SECOND AMENDED STANDARD FORM 299 (SF299)

APPLICATION FOR TRANSMISSION AND UTILITY SYSTEMS AND FACILITIES ON FEDERAL LANDS

LUCKY CORRIDOR

TRANSMISSION LINE PROJECT

Prepared for:
Lucky Corridor, LLC

Prepared by:
Ecosphere Environmental Services
776 E. Second Ave.
Durango, CO 81301

Ecosphere Environmental Services

August 2016

HOLLAND&HART LLP

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August 22, 2016

VIA E-MAIL
Lynn Chapman Greene
CEO and Manager
Lucky Corridor, LLC
6526 Wauconda DR
Larkspur, CO 80118
Re: Lucky Corridor FAST-41 Eligibility

Dear Ms. Greene:

I am pleased to respond to your question whether the Lucky Corridor Transmission Project ("Project), as described in the Second Amended Standard Form 299 Application to the U.S. Forest Service ("Service"), would be eligible for expedited and coordinated NEPA review pursuant to Title XVI of the Fixing America's Surface Transportation Act of 2015 ("FAST-41"). In short, the Project appears to fall within the scope of the FAST-41 review and permitting process.

FAST-41 changes the federal permitting process for major infrastructure and other capital projects in three ways: (1) better coordination of and deadline setting for permitting decisions; (2) enhanced procedural transparency; and (3) tightened deadlines for litigation challenging permitting decisions. FAST-41's procedural reforms apply to projects involving investment greater than $200 million and extend to most industry sectors, including electricity transmission, renewable or conventional energy production, ports and waterways, broadband, pipelines, and manufacturing. The FAST-41 review process can also be applied to projects that involve investment less than $200 million, if the project is chosen for inclusion by a to-be-formed multiagency federal permitting improvement council because the project is subject to NEPA and of a size and complexity which, in the opinion of the interagency council, makes the project likely to benefit from enhanced oversight and coordination.

Projects requiring NEPA review and permitting under the authority of the Service, including electric transmission projects, are included in the scope of FAST-41. The Service has already included one such project, the "Kake to Petersburg Transmission Project," in the inventory of projects eligible for review under the FAST-41 process.

The estimated cost of the Lucky Corridor Transmission Project is $154 million, with the next best alternative estimated to cost $260 million. The range of the Project alternatives' estimated cost meets the presumptive threshold set by FAST-41. In addition, the Project would meet the test for discretionary inclusion in the FAST-41 process because it requires NEPA

review and is of a size and complexity likely to benefit from enhanced oversight and coordination.

We note also that the Service has publically stated a policy in support of siting new transmission infrastructure in existing corridors, as would be the case with the Project. The Service's policy reflects the authority detailed in 36 C.F.R. § 215.55(b)(3), which addresses the nature of interests conveyed by special use authorizations. The Service expressly retained "the right to require common use of the land or to authorize the use by others in any way not inconsistent with a holder's existing rights and privileges after consultation with all parties and agencies involved."

The Service's public statements are found in a wide range of directives. For example, the Service's 2011 Strategic Energy Framework identified "specific tactical areas" to help the Service "achieve energy security while protecting the National Forest System[,]" which include:

> Energy delivery—Contribute to the movement of energy from production sources to the places where people use energy, and confine delivery methods to existing or newly designated "corridors" as a way to minimize the proliferation of rights-of-way across the landscape[.]

USFS, Strategic Energy Framework at 4.

Additionally, Forest Service Manual 2700 recognizes that "[r]educing the dispersion of rights-of-way is encouraged by the Federal Land Policy Management Act. Therefore, [Service employees should] encourage proponents and applicant for powerlines to propose siting their facilities along existing rights-of-way or in existing right-of-way corridors." FSM 2700: Special Uses Management, Chapter 2720 – Special Use Administration, Section 2726.43: Powerlines. The Manual reiterates this policy in the subsection on Electric Transmission Projects: "Where practicable and appropriate, encourage proponents of electric transmission projects to locate their projects within designated energy corridors or adjacent to existing rights-of-way." *Id.* at Section 2726.43b. These statements show the Service-wide policy of siting transmission infrastructure in existing rights of way.

The Carson National Forest has a specific policy for siting new transmission infrastructure in existing corridors. Carson National Forest's current Forest Plan (1986) includes a Forest-Wide Prescription on Facilities and Corridors. That prescription's Standards and Guidelines for "corridors of use" are: "[d]esignate existing communication, power, oil, and gas transmission rights of way as corridors . . . [and p]rovide for joint use in corridors and combine uses, to the extent possible, in light of technical and environmental constraints." 1986 Forest Plan, at Facilities-1, *as amended by* Carson Forest Plan Amend. 7 (1990).

As you are aware, the FAST-41 process is new, with many administrative and operational details still in development within the Executive Office of the President. There is no operational history under FAST-41 that would allow us to offer an opinion on the timing or outcome should the Project receive consideration under the FAST-41 process. We do not know, for example, how the interagency council charged with implementation of FAST-41 might apply its discretion or resources under the new law to the Project.

It does appear to be clear on the face of the new law that the Project would be eligible for FAST-41's expedited and coordinated review. It is also evident that the Project, intended to facilitate development of renewable energy resources, is of a nature that would promote implementation of the Administration's energy and environmental policies related to climate change and reduction of greenhouse gas emissions, and would be consistent with the Service's own policies related to location of transmission infrastructure.

We hope this letter is responsive to your request. We would be happy to provide additional information, if needed. It is a privilege to be of service.

Sincerely,

Thomas C. Jensen
Partner

LUCKY CORRIDOR

August 22, 2016

James Duran, Forest Supervisor
Carson National Forest
208 Cruz Alta Road
Taos, New Mexico 87571

Re: Lucky Corridor Transmission Project-Second Amended Standard Form 299 Application (the "Application")

Dear Supervisor Duran and Staff:

We are today submitting a revised project proposal which would reduce the length of the single circuit 345 kV Lucky Corridor Transmission project from 130 miles to 62 miles (the "Project"). There are new federal and regional policies and programs promoting clean energy and regional cooperation. We are betting that the ability and cost of moving clean energy west through certain existing transmission in our region will ease, without our having to build parallel transmission through BLM or sovereign nations' land.

Similarly, market conditions are leading to improved transmission from Springer to the east. Consequently, we are all now allowed to focus on the best path through and around just 12 miles of the Carson National Forest which includes Taos Canyon. About fifty miles of private right-of-way in the Taos region will complete the path needed to efficiently re-supply the Four Corners NYMEX electricity trading hub with northern New Mexico's vast renewable energy.

These same USFS lands were the focus of eight years of work by your office now concluding and reported upon in ***Tri-State Taos to Black Lake Transmission Line Access Project prepared by the Camino Real Ranger District, Carson National Forest, Taos County, NM; Preliminary Environmental Assessment (PEA 2016)***.

As you know, we have begun organized public outreach. With the help of Ecosphere Environmental Services and our attorney Scott Sanger, we reached out to the public in the Project region. Ecosphere has replaced Tetra Tech on our team. Please see following both a summary of the meeting dates, attendees and topics discussed, as well as the support letters obtained to date.

In general, the meetings introduced key local officials and community members to the Project, and provided a forum for questions and answers about the Project. The local economic development benefits and potential for other renewable energy development opportunities were discussed.

the agency meetings (Taos County Planning Department and Town of Taos) preliminary permitting

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LUCKY CORRIDOR

discussions also occurred, with information provided regarding the U.S. Forest Service permitting process. The meetings were well attended and overall there was positive feedback and support expressed for the Project. Please see these interesting support letters, attached.

We also have new counsel, Thomas Jensen of the Washington D.C. office of Holland & Hart, https://www.hollandhart.com/tcjensen. His experience with successful projects will make the task of studying this Project easier for all of us.

Importantly, the completion of work by your office, as well as progress in federal policy which promotes clean energy and the infrastructure necessary to mitigate climate change and fire risk, should hasten the analysis of whether the Project will benefit the public today and into the future.

We hope that your office, local government, and people living in the region will learn, as our team has, from the data that inspired this Project. The resources in the Taos region can mitigate the dangers of climate change, not just here, but throughout western U.S. population centers, while bringing technology-based economic development to the Taos Region.

This precious and sensitive Taos region can both act to protect itself from negative changes in the environment, and to lead the western U.S. in smart mitigation of climate change. By accepting this Application and moving efficiently toward a cost allocation agreement and the resulting Project studies, the Carson National Forest and the USFS would demonstrate how to study the benefits of modern infrastructure, balanced with the need to sustain national forests. We believe modernizing transmission and fiber infrastructure, requiring fire mitigation practices, and developing world class renewable energy resources in the few places where they occur, such as in northern New Mexico, will benefit the public interest. Using the wind and sun to make electricity is one of the most important paths toward environmental protection.

We look forward to working with you to determine the best interests of the public in the Taos region.

Very truly yours,
Lucky Corridor, LLC

By: Lynn Chapman Greene

Lynn Chapman Greene, CEO/Manager

Enclosures

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Lucky Corridor Outreach Meetings Summary 8/18/16

Organization	Meeting Time and Place	Summary of Topics
Renewable Taos (RT) Bob Bresnahan John Gusdorf Jay Levine SteveFuhlendorf William Brown Lucky Corridor	Monday, February 8, 2016 Taos County Administrative Building, Taos, New Mexico	• Lucky Corridor Project (Lucky) consists of proposed new transmission and fiber facilities that would bring renewable energy, transmission and fiber capacity to the Taos region, with attendant economic development potential. • RT members are familiar with the Lucky Corridor and have decided to support the necessary studies to possibly advance the project, in part because it could be a means to transmit locally generated solar energy from Taos to other areas. • Can Lucky provide simulations that would show the visual impacts of the project? • The two major public issues with the project would likely be visual impacts and concerns against the inclusion of any electricity on the line from natural gas sources that involve fracking in Mora County. The project has had no contact nor interest expressed by any gas producers or projects. • The Lucky team would like to give RT a more complete presentation in the future. • RT is very receptive and perhaps could help generate community support.
U.S. Forest Service (USFS): Carson National Forest and Bureau of Land Management (BLM): Taos Field Office Field Manager, BLM Forest Supervisor, USFS Engineering/ Recreation/ Lands & Minerals Officer, USFS District Ranger, Camino Real Ranger District, USFS Lucky Corridor	Wednesday, April 6, 2016 Michael's Kitchen, Taos, New Mexico	• The westward linkage is the question. How will the Lucky line get to the Ojo Caliente Substation and what happens after the Substation? The project needs to represent local and regional public interests. The SF 299 should present a complete project. • The project should provide value to New Mexico and the local community. • The BLM considers social and economic justice when evaluating whether a project is in the public interest. The Lucky Corridor Project should demonstrate that it will produce local jobs. Some of the local interest groups include the Pueblo of Taos, who own Tract A west of town, and the people in the Taos Canyon, east of town • The project analysis should consider alternatives on a broad scale, such as the Sun Zia line. • The analysis should include other affected communities, such as Rio Arriba County. • People are sophisticated about agency planning processes. The project should conform to new plans. The Bureau of Indian Affairs should be involved in the process.

Organization	Meeting Time and Place	Summary of Topics
Renewable Taos Bob Bresnahan William Brown Lucky Corridor	Wednesday, April 6, 2016 Gutiz Restaurant, Taos, New Mexico	• Renewable Taos supports the project. • The project will need to comply with the new Carson National Forest Plan Revision. The Carson office will make decisions on the Tri-State access roads proposal in the near future, after the resource studies and environmental documentation are complete, which is anticipated soon. • There is community support for local service by Kit Carson Co-op with some electric power provided by local solar development. • Does the Lucky Project allow for the connection of local solar electric development to the transmission grid? • Connection of local solar development to the transmission grid requires proximity to a substation, such as the one located off of Blueberry Hill Road. • People here are convinced that they can plan for and develop local solar generation and transmission • RT members are working with Senators Tom Udall and Martin Heinrich to help bring renewable energy to northern New Mexico. • Lucky is interested in continuing to receive input from RT and will be moving forward with additional studies as required by the USFS.
Taos County Planning Department County Planning Director County Chief Planner County Planner II Lucky Corridor	Wednesday, April 6, 2016 Taos County Administrative Building, Taos, New Mexico	• The County has a new 2015 zoning and land use ordinance with 2016 amendments. It is likely that the Lucky Project would fall under the administrative permit. • Has the Lucky alignment through Taos been defined yet? • Federal regulations prioritize the re-use of existing corridors. We won't know the exact alignment until the studies are complete. The design is interactive with the evaluation of resource constraints and other factors such as the ability to work with the Tri State line. • The County application would be one of the last steps when the proposed alignment is defined. The County has no jurisdiction on federal lands. The County application would not be active until a specific route is known. • As soon as the application is filed, the County will notify adjacent property owners and place an advertisement in the newspaper.

Organization	Meeting Time and Place	Summary of Topics
		• It is important that the project consider local plans, such as the ongoing economic development plan, the comprehensive plan, and the USFS plan. Criteria used in evaluating the permit application include visual compatibility, land use compatibility, and performance standards as described in the zoning and land use ordinance. • When public meetings are held, the County would invite local neighborhood associations and organizations like the County wildfire protection board. County neighborhoods would likely include Taos Canyon, West Mesa, and Lower Las Colonias. The group from the community of Carson, west of town along the existing transmission line, should also be invited.
Taos County Planning Department County Planning Director County Chief Planner County Planner II County Floodplain Administrator Lucky Corridor	Thursday, May 5, 2016 Taos County Administrative Building, Taos, New Mexico	• Lucky is requesting letters of support to the USFS for moving the project forward. • The Tri State project Environmental Assessment is now available for public review. • Lucky Corridor facilities are proposed to carry low cost renewable energy in the post-coal electric energy market. • Lucky encourages Taos County to discuss cooperating agency status for the project with the USFS. • Taos County is receptive to sending a letter of support for the project. • County staff suggests an additional presentation on the project with the County Manager. • Taos County staff is excited about the project. They want to hear more about the pros and cons of overhead versus underground – this will need to be addressed for county permitting. Lucky may need to research potential for grandfathering of existing line/land use. Currently the existing right-of-way on private land is owned by Tri State.
Town of Taos Mayor Town Manager Town Attorney Planning Director Marketing and Tourism Director Lucky Corridor	Thursday, May 5, 2016 Town of Taos City Hall, Taos, New Mexico	• Lucky presented information on the project and requested a letter from the Town to encourage the USFS to accept the SF 299 Application. • The current project will end at the sub-station on Blueberry Hill Road. There is existing capacity westward to the Ojo Caliente Substation and Four Corners area. • Will there be economic benefits in Taos with higher-expertise jobs and tax revenues going out of state or to entities other than the Town?

Organization	Meeting Time and Place	Summary of Topics
		• The project will support local solar related jobs, training programs, and opportunities for fiber optic service and fire prevention technology. • Is there a consumer of power at the Taos sub-station where you drop into the grid and along the Lucky line to Gladstone? Is there a conduit to the grid at Farmington? • There are electric coops along the Lucky line. Lucky provides the shortest and cheapest route for renewable energy to reach the Four Corners area, which then has transmission linkages to California.
Community Wildlife Protection Plan (CWPP)/ Firewise: Core Team Taos County Kit Carson Coop State Forestry Division BLM The Nature Conservancy Rocky Mountain Youth Corps Valle Escondido Firewise Carson National Forest USDA-Natural Resource Conservation Service Amigos Bravos Pot Creek Firewise Village of Taos Ski Valley Taos Pueblo Taos Canyon Firewise Taos Land Trust Lucky Corridor	Thursday, May 19, 2016 Taos County Commissioner's Chambers, Taos, New Mexico	• Lucky presented information on the project and requested support letters to encourage the Carson to accept the SF 299 Application, which would allow Lucky to proceed with the studies needed to determine the feasibility, economic benefits, and potential environmental and community impacts of the project. • How will letters of support be collected? Is there a website to review information? • Has the Taos Pueblo been contacted? A presentation should be made to the Pueblo Council.
Senator Martin Heinrich, Staffer, Katie Richardson	Friday, May 27, 2016 Teleconference	• General introduction to the project including local and state economic benefits, construction jobs, and encouraging renewable energy development.

Taos Pueblo Richard Archuleta, War Chief; Fred Romero, Lieutenant War Chief; Reva Suazo, Real Estate Officer	Wednesday August 3, 2016, Taos Pueblo	• Scott H. Sanger, Esq., on behalf of Lucky Corridor, shared informational materials and encouraging economic studies from each of the University of New Mexico – Bureau of Business and Economic Research and the State of New Mexico Economic Development Department, along with proposed route mapping ending in Taos Substation, with Taos War Chief, Lieutenant War Chief and Real Estate Officer. • Real Estate Officer expressed concerns about transmission Tower visual impact on Sensitive Vector Area adjacent to Pueblo Tract A and their desire to review archaeological portion of NEPA study. • War Chief is recommending issuance Approval of Support letter to United States Forest Service for the NEPA study.
Taos County Economic Development Corporation (TCEDC) – Daniel Barrone, Mayor, Town of Taos; Judith Cantu, Town Councilor; Candice O'Donnell, Taos County Commissioner; Reva Sauzo, Taos Pueblo Realty; Terrie Badhand, TCEDC Director; Pati Martinson, TCEDC Director; Richard Archuleta, Taos Pueblo War Chief; Lucky Corridor	Wednesday, August 17, 2016, Taos, NM	• Lucky Corridor presented information on the project and requested support letters to encourage the USFS to accept the SF 299 Application, which would allow Lucky to proceed with the studies needed to determine the feasibility, economic benefits, and potential environmental and community impacts of the project. • A letter of support was approved at the meeting

Taos County Economic Development Corp

"Supporting food, land, water and cultures of the peoples of Northern New Mexico"

James Duran, Forest Supervisor
Carson National Forest
U.S. Forest service
208 Cruz Alta Rd.
Taos, NM 87571

Steve Okamoto, Rec/Lands& Minerals Officer
Carson National Forest
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Re: Application of Lucky Corridor, LLC for Studies of USFS Lands

Dear Supervisor Duran and Officer Okamoto,

At a duly called Board of Directors Meeting of the Taos County Economic Development Corporation where there was a quorum present, and held on Wednesday, August 17, 2016, representatives of the Lucky Corridor Transmission Project introduced information via telephone and an on- site power point presentation. Information presented regarding the proposed project included its potential impact on economic development in Taos and Taos County. TCEDC a 501@3 Community Development Organization operating for close to thirty (30) years here in Northern, New Mexico is looking at the possible benefits that the Lucky Corridor Project could have in terms of providing lower cost power and internet services to local small businesses which the organization serves as well as the creation of viable employment opportunities for community members. With over sixty (60) food business entrepreneurs operating out of the TCEDC Commercial Food Center alone, the costs of power and connection availability are extremely high for the organization as well as for each individual business.

TCEDC's experience developing the first Small Business Incubator and the first Commercial Kitchen in the state has informed our Board of Directors and staff of the challenges and difficulties faced by small start-up ventures particularly around the costs of power and utilities.

By increasing electric transmission capacity and modernizing and facilitating an upgrade to the infrastructure, the Lucky Corridor project could have a positive impact on TCEDC's client base.

It is our understanding that the project requires additional studies by the U.S. Forest Service and other stakeholders in the region in order to proceed. The TCEDC Board of Directors supports the follow-up action necessary to begin the study process after submission of the amended SF299 Application to the U.S. Forest Service. The TCEDC Board of Directors further requests that TCEDC receive a copy of the completed studies to determine if the results will indeed benefit its constituents and provide increased opportunity for local business and employment development as well as a means for affordable renewable energy.

Very Truly Yours,

Terrie Bad Hand, Director

Peb Martinson, Director

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Taos County Administration

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August 19, 2016

James Duran, Forest Supervisor
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Steve Okamoto, Rec/Land & Minerals Officer
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Tammy Malone, District Ranger
Carson National Forest, Camino Real Ranger District
U.S. Forest Service
P.O. Box 68
Peñasco, NM 87553

Re: Letter of Support for Lucky Corridor LLC Application

Dear Mr. Duran, Mr. Okamoto and Ms. Malone,

On behalf of Taos County please accept this letter of support for the Lucky Corridor, LLC, regarding USFS Lands Project Application. Taos County feels that if this study is done by the USFU and stakeholders in our region it will be an important step towards substantial economic benefits in our area.

The Lucky Corridor project upgrade will provide for improved electric and telecommunications services for communities along the transmission project route, encourage the development of local renewable energy projects by allowing them to transmit electricity to local, regional and national market users.

Taos County wants to encourage support for moving the project through the federal permitting process in a thorough and quick manner. Time is of the essence if we want to protect northern New Mexico's market share of our clean energy future. If you have any questions please contact me at 575-737-6300.

Sincerely,

Leandro Cordova,
Taos County Manager

June 14, 2016

James Duran, Forest Supervisor
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U.S. Forest Service
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Steve Okamoto, Rec. /Lands & Minerals Officer
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RENEWABLE TAOS

502 Piñon Court
Taos, NM 87571

RE: Application of Lucky Corridor, LLC for Studies of USFS Lands

Dear Supervisor Duran, Ranger Malone and Officer Okamoto:

We have recently met with Lucky Corridor, LLC (Lucky) and supporting personnel about the potential benefits that the Lucky Corridor transmission project could have in terms of empowering renewable energy and local economic development in the Taos region. Lucky personnel have informed us that, by increasing electric transmission capacity and modernizing local electric and telecom infrastructure, the project may have the potential for substantial economic benefits for the Town of Taos, and Taos County. However, Lucky personnel carefully explained that the potential benefits as well as the social, economic, and environmental effects cannot be factually determined unless the project is studied by the USFS and stakeholders in our region. We are therefore requesting today that the USFS proceed to accept the project's amended SF 299 Application, and therefore begin the study process.

We hope the project's impacts, on balance, will be positive for our area. If the studies reveal a public benefit, such as renewable energy, transmission line, and telecom jobs, the project would benefit our area. Many of these jobs pay higher than average wages, which counteract high unemployment and poverty rates. The infrastructure investment itself would lead to increased tax base and a multiplier effect in the local economy during construction.

The project is an important step towards marketing northern New Mexico's abundant renewable energy resources. Upgrading existing transmission corridors may be the most efficient approach to moving renewable energy resources to existing markets, including the Four Corners NYMEX trading hub in northwestern New Mexico.

The upgrade activities would also provide for improved electric and telecommunications services for communities along the transmission project's route. Because of our area's proximity to Four Corners, our clean energy would have a lower delivered price, and therefore earn market share.

The Lucky Corridor project will encourage development of local renewable energy projects by allowing local projects to send electricity to users in local, regional, and national markets. There are local advocacy groups and developers in Taos County who are interested in seeing the Lucky Corridor project move forward in the near term, so they can use the new transmission capacity for local renewable energy development.

We are in favor of proceeding with the SF 299 Application and National Environmental Policy Act (NEPA) process to study the biological, cultural, and other impacts of the project, and evaluate its potential public benefit. We want to express our sincere support for moving the project through the federal permitting process in a thorough and expeditious manner.

Since the Preliminary Environmental Assessment for the Tri-State Hernandez to Black Lake Transmission Line Access Project was released in April of 2016, we suggest that the USFS use that information and any other available public information to quickly and efficiently study the Lucky Corridor proposal to modernize the infrastructure in this non-exclusive pathway. This study would of course also include any physical diversions from the existing transmission line pathway that may be in the public interest.

To protect our environment and our climate, and in light of previously scheduled coal plant retirements in the Four Corners region, western states are competing to repower New Mexico's Four Corners NYMEX electricity hub. The solar resources in the Taos region, as well as northern New Mexico's wind resources, are among the best quality renewable energy resources in our nation, and even on a worldwide scale. We hope our region's resources can win part of the market share which is the subject of this competition, without public detriment, and bring the benefits to the Taos area. That can only be determined by proceeding with the SF 299 Application and NEPA studies.

Today, our region does not have the transmission capacity necessary to export clean energy. For regional mid- and long-term planning, we need to know whether developing local renewable energy resources is a viable economic plan for our future. For that reason, we ask that you use all public information available to you, as well as new studies of areas of particular concern, and public scoping, to determine the feasibility as soon as possible.

If our renewable energy resources here cannot be developed in conjunction with new transmission and telecommunications infrastructure, the Taos area will need to study other plans for our economic future. Time is of the essence if we want to protect northern New Mexico's market share of our region's clean energy future.

Please help us study potential public impacts as efficiently as possible.

Very truly yours,

John Gusdorf

John Gusdorf
Executive Director

AMIGOS BRAVOS

Because Water Matters

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June 30,2016

James Duran
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Tammy Malone, District Ranger
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Re: Application of Lucky Corridor, LLC for Studies of USFS Lands

Dear Mr. Duran, Mr. Okamoto, and Ms. Malone,

We have been made aware of the potential benefits that the Lucky Corridor transmission project could have in terms of empowering renewable energy and local economic development in the Taos region. It's clear that the potential benefits, as well as the social, economic, and environmental impacts cannot be factually determined unless the project is studied under the National Environmental Policy Act (NEPA) by the USFS and stakeholders in our region. Accordingly, we request that the USFS proceed to accept the project's amended SF299 Application, and therefore begin the study process.

Our hope is that the project's impacts will be overall positive for the Taos area, and the project would seem to be an important step towards developing northern New Mexico's abundant renewable energy resources.

We expect that proceeding with the SF299 Application and National Environmental Policy Act (NEPA) will identify the biological, environmental, cultural, and other impacts the project may have. As you may be aware, Amigos Bravos works to ensure that the waters of New

Mexico are protected by the best policy and regulations possible, and of course this mission will be paramount to our interest in the results of the study.

We view the Taos Canyon as a sensitive area, and in our view the project development must use every possible technique to mitigate adverse impacts to the watershed and the environment.

As we noted in our comments regarding the Preliminary EA for the Tri-State to Black Lake Transmission Line Access Project (letter to J. Duran dated 5-31-16 attached hereto), it is our view that a comprehensive approach to minimize adverse impacts is key. In particular, creating new roads, reopening old roads and allowing access to heavy equipment have the potential to adversely affect wildlife, water quality and overall watershed health, and we urge the applicant and the Forest Service to be creative about minimizing such impacts.

We at Amigos Bravos understand the potentially positive impacts to the Taos community and to the environment that may accrue from facilitating more reliance on renewable energy and less on energy derived from fossil fuels. With that being said, while we support moving forward with an analysis under NEPA to flush out specific project details and environmental impacts, we are not endorsing the project as a whole at this point. We will be closely watching the process and analyzing the potential impacts to wildlife and water quality to determine whether moving forward with such a project is in the best interest of watershed health and the Taos Community. We urge the Forest Service to ensure that the concerns identified above are appropriately addressed at all stages of the project.

Sincerely,

Joe Zupan
Executive Director
Amigos Bravos

AMIGOS BRAVOS *Because Water Matters*
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James Duran
Forest Supervisor
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May 31, 2016

Re: Preliminary Environmental Assessment, Tri-State to Black Lake Transmission Line Access Project, April 2016

Dear Mr. Duran,

Amigos Bravos is a statewide water protection organization guided by social justice principles. Our mission is to protect and restore the rivers of New Mexico, and ensure that those rivers provide a reliable source of clean water to the communities and farmers that depend on them, as well as a safe place to swim, fish, and recreate. Amigos Bravos works locally, statewide, and nationally to ensure that the waters of New Mexico are protected by the best policy and regulations possible. In this capacity Amigos Bravos works to make sure that planning and projects implemented on public lands will protect and/or restore the ecological and biologically integrity of New Mexico's precious water resources. We would like to thank you for the opportunity to provide comments on the Preliminary Environmental Assessment for the Tri-State to Black Lake Transmission Line Access Project ("PEA"). While we appreciate many of the changes since the scoping process in 2011, we still have substantial concerns with the proposal to allow Tri-State increased access to the Black Lake Transmission Line. These concerns are outlined below:

Comprehensive Analysis and Plan for the Future of the Corridor is Needed:
Amigos Bravos urges the Carson National Forest to assess this project in the context of the potential future use of the corridor. Amigos Bravos is aware that there is a proposal from Lucky Corridor, LLC to utilize this same transmission corridor to import renewable energy into the Taos Community. "The Lucky Corridor Transmission Project" as presented in collaboration with Taos County at the recent Taos Community Wildfire Protection Plan (CWPP) meeting on May 19, 2016 at the Taos County Commission Chambers would require substantial upgrades to the existing transmission lines in the corridor. We urge CNF to look comprehensively at the future of this corridor and make decisions so that impacts to both

agency and natural resources aren't multiplied. To allow Tri-State access to the corridor and permit the considerable associated impacts to the natural resources in Taos Canyon only to have another proposal and its substantial impacts follow close on its heels, does not make sense in terms of impacts to agency and natural resources. These types of projects take considerable agency resources to review and oversee. In addition the creation of new roads, reopening of old roads and allowing access to heavy equipment as outlined in the PEA will have considerable impacts to the Carson's wildlife and watersheds. If a comprehensive approach was taken, many of these impacts could potentially be reduced. This is especially so since the Lucky Corridor Project, if approved, would likely involve installing completely new infrastructure, making repairs to the existing line as proposed in the PEA obsolete and the impacts to the surrounding resources from these repairs will have been in vain.

PEA Purpose and Need:
Tri-State has successfully maintained and reconstructed the transmission line using current practices for almost half a century. Existing access along the transmission line right of way, and current vegetation management and maintenance practices are sufficient to meet Tri-State's operating needs as well as its legal requirements under the Federal Energy Regulatory Commission and the North American Energy Reliability Corporation. Tri-State does not identify new legal or operating requirements that justify the need for this proposal. The stated purpose is solely for the benefit of the corporation. The only purposes identified are for maintenance convenience and to shorten emergency response times. Maintenance convenience cannot be considered a need that justifies re-opening over 20.4 miles of roads in prime wildlife habitat. Emergencies and scheduled replacement of the line have been adequately dealt with for close to fifty years without this access. There are no new maintenance requirements or "new" emergencies that could justify the cumulative impacts of the proposed action. Tri-State and its environmental consultants have claimed that responding to Forest fires is a concern. However, this argument is disingenuous, as Tri-State has neither the authority nor the capacity to respond to forest fires. There are no legal justifications for approving Tri-State's proposal. On the other hand there are numerous environmental and social reasons to reject the proposal. Because the proposed action will result in adverse environmental and social impacts, and because the stated *Purpose and N*eed for the project is insufficient to justify a change in current practice, we ask that you deny Tri-State's access proposal.

Wildlife Impacts
The proposed project area has experienced a huge resurgence of wildlife since the forest roads were closed to motorized travel. There is mounting evidence that indicates increases in the populations of elk, deer, bear, mountain lion, bobcat, golden eagles, hawks (including goshawks) and owls. The many miles of closed non-system routes in the area have begun to revegetate and are currently prime wildlife habitat that provides multiple species with forage and nesting sites. Reopening these routes would have substantial impacts to the area's wildlife.

Water Impacts

The Rio Fernando Watershed is impaired for a number of parameters including *E.coli,* Temperature, and Sedimentation. Reopening 20.4 miles of revegetated roads has the potential to cause or contribute to increases in all three of these impairments and therefore and does not comply with agency duties to comply with the Clean Water Act. See 33 U.S.C. § 1323(a) (requiring that federal agencies comply with the Clean Water Act, which includes compliance with water quality standards). The PEA says that reopening roads has the potential to decrease sedimentation by implementing BMPs (PEA at 55). This is an absurd statement that is not supported by facts or documentation, as is required by law. See 5 U.S.C. § 706(2)(A). Many of the non system routes in question have revegetated and have stabilized and thus are currently unlikely to be substantially causing or contributing to a substantial sediment loading into the Rio Fernando, whereas, if these roads were rebladed and used on a consistent basis, increased sedimentation is likely. Amigos Bravos requests to see an analysis of the current sediment loading from these routes compared with the anticipated sediment loading associated with reopening these routes. This anticipated loading must calculate the increased sediment loading that will occur due to illegal access that will accompany any grading and improvement to these currently closed roads. Closed roads that are revegetated are much less likely to see illegal access and disturbing these roads as proposed in the PEA will most certainly result in increased illegal access. Amigos Bravos also requests to see examples on the Forest where BMPs have been installed and adequately maintained to reduce sediment load. In addition, Amigos Bravos requests that the Forest Service provide specific proposed sediment reducing BMP locations and techniques that are being proposed for the 20.4 miles of reopened non system routes and the 6.4 miles of existing system routes.

Social Impacts

New and improved access to the Tri-State transmission line will open up most of the forest between US Highway 64 and Taos Pueblo lands. Current road closures provide a safety buffer from illegal activity in the area. Opening up roads will result in increased illegal access and poaching and will create additional security risks to many of the property owners whose homes can be accessed through the National Forest.

In conclusion Amigos Bravos urges you to choose the no action alternative.

Thank you for this opportunity to comment. Amigos Bravos looks forward to working with you and your staff to ensure the continued protection and restoration of the upper Río Fernando watershed. Please let me know if you have any questions.

Sincerely,

Rachel Conn
Projects Director
rconn@amigosbravos.org

UNION COUNTY COMMUNITY DEVELOPMENT CORPORATION

uccdc1@gmail.com
www.clayton-nm.com

UCCDC
124 Main Street
P.O. Box 216
Clayton, NM 88415
Voice 575-447-2855
Fax 575-374-2855

February 23, 2016
Lucky Corridor, LLC
c/o Lynn Greene, CEO
via email: lynn@luckycorridor.com

PNM

The Union County Community Development Corporation (UCCDC) wishes to express our support for the Lucky Corridor transmission project, and for the work your company has done to aid economic development in northern New Mexico. We are aware of the economic development studies done in support of Lucky Corridor, LLC by the University of New Mexico's Bureau of Business and Economic Research and by Impact Data Source on behalf of the State, both showing the tremendous benefit to our area of building new transmission capacity, which will enable development of our region's wind, solar and gas resources.

Lucky Corridor's work in the development of wind generation, transmission lines and the State of New Mexico cooperation coupled with the regional support for improving the electrical infrastructure in northern New Mexico will be a prime factor in reversing the downturn in our regional economy. It is our understanding that federal regulation will also require the installation of fiber optic cable along with electrical conductor. That could be good for telecommunications in our region.

We believe that opening up sales of energy from northern New Mexico to the Four Corners electricity marketplace, where customer demand for a cleaner energy resource mix is changing the electricity supply, will be good for economic development in northern and eastern New Mexico.

We at the UCCDC are in support of this project and other green energy projects as an agent of the local governmental agencies we represent.

Thank you for your Consideration,

Richard (PR) Arguello
Executive Director, UCCDC.

North East Economic Development Organization, Inc.
dba NEEDO-NM
32 N Mesa Loop, Raton NM 87740
(575) 445-3130

December 5, 2013

Lucky Corridor, LLC
c/o Lynn Greene, CEO
via email: lynn@luckycorridor.com

Dear Ms. Greene:

Thank you for this opportunity to express our support for the Lucky Corridor transmission project, and for the work your company has done to aid economic development in northern New Mexico. We are aware of the economic development studies done in support of Lucky Corridor, LLC by the University of New Mexico's Bureau of Business and Economic Research and by Impact Data Source on behalf of the State, both showing the tremendous benefit to our area of building new transmission capacity, which will enable development of our region's wind, solar and gas resources. We are also aware of the MOU between your company and NM RETA, and the MOU with Western Area Power Administration, as well as the company's success in winning negotiated rate authority with the FERC.

Lucky Corridor's recent acquisition of transmission right-of-way with 100% landowner and State cooperation also shows the regional support for improving the electrical infrastructure in northern New Mexico. It is our understanding that federal regulation will also require the installation of fiber optic cable along with electrical conductor. That could be good for telecommunications in our region.

We believe that opening up sales of energy from northern New Mexico to the Four Corners electricity marketplace, where customer demand for a cleaner energy resource mix is changing the electricity supply, will be good for economic development in northern and eastern New Mexico.

Please feel free to share the fact of our support for the Lucky Corridor project with others. We wish you continued success in the development of the Lucky Corridor, LLC projects.

Very truly yours,

Paul Jenkins

Paul Jenkins, President
North East Economic Development Organization, Inc.
dba NEEDO-NM

Coalition of Renewable Energy Landowner Associations

111 South Jefferson Street
Grady, New Mexico 88120

December 5, 2013

The Honorable Susana Martinez
Governor of New Mexico

Dear Governor Martinez

The Board of Directors of CRELA ask for your support and endorsement of the Lucky Corridor Transmission Project in Northeastern New Mexico in Union, Colfax and Taos Counties.

Several opportunities have been proposed within the state to increase electric transmission capacity utilizing Direct Current (DC) or High Voltage Direct Current (HVDC) technology, either stand alone, or in combination with Alternating Current (AC) technology, or Voltage Source Conversion (VSC), which includes Tres Amigas Super Station, Clean Line Centennial West, Sun Zia and Power Network New Mexico (now Western Spirit Clean Line), a partnership between the New Mexico Renewable Energy Transmission Authority (NMRETA) and Clean Line Energy Partners, all of which CRELA supports.

Lucky Corridor is significant in that its primary objective is to build and upgrade existing AC transmission lines, not to build or employ new HVDC, DC or VSC technologies. This approach will serve to lessen interconnection expenses for large and small energy projects seeking access throughout its course. The target marketing hub is the Four Corners Substation in San Juan County, which in and of itself serves as a major price point for the western electric grid.

The state of New Mexico will benefit by building new tax base within the state in the counties where the project will be located. These benefits will extend to rural school systems, rural cities and villages, and the county governments and thence forward to the state government. Lucky Corridor will foster job creation, both direct and induced and will additionally offer new revenue solutions to participating farmers and ranchers that have suffered from prolonged drought conditions in the Northeastern part of the state.

The Lucky Corridor Transmission Projects primary investors are the landowners in Union County. The project has secured two Memorandums of Understanding with NMRETA and one with Western Area Power Administration's Transmission Infrastructure Program. It has been granted the authority by the Federal Energy Regulatory Commission to start selling capacity to anchor tenants and has pre-sold 300 megawatts of its capacity.

The support and endorsement of this project by your office, the legislature and the New Mexico citizens is important, in that the permitting process may move forward in a timely fashion to affect a speedy completion. It is important that our state as a whole foster an environment that encourages renewable energy development within our borders.

It is our fear and concern that if New Mexico is not strong and aggressive in renewable energy development and by extension fostering relationships with and-partnering along side natural gas producers in New Mexico to provide firm source delivery that destination users/customers may/will require, our state will ultimately end up with, and be mandated to provide right of way easement (without provision for in-state interconnection points) for DC and HVDC transmission lines originating in other states that will be moving energy (both firmed and non-firm) to the Pacific Coast region. New Mexico energy source businesses (both traditional and renewable) will lose out on major marketing and profit opportunities to deliver power to the California and/or other comparable markets.

Our neighboring state of Texas has over 10000 megawatts of renewable power online and continues to grow in transmission infrastructure with the CREZ system and more new projects. It is imperative that New Mexico move quickly in this competitive arena with all of its transmission proposals, but most especially with projects such as the Lucky Corridor, which will provide a more immediate short term solution for building, obtaining and maintaining a competitive edge for New Mexico. Thank You for your consideration.

Paul Stout
Chairman

NEW MEXICO
RETA
renewable energy transmission authority

November 8, 2013

Buck Sanchez, Forest Supervisor
Carson National Forest
208 Cruz Alta Road
Taos, NM 87571

Sam DesGeorges, Field Manager
Bureau of Land Management, Taos Field Office
226 Cruz Alta Road
Taos, NM 87571-5983

RE: Lucky Corridor Project

Dear Messrs Sanchez and DesGeorges:

The New Mexico Renewable Energy Transmission Authority ("RETA") is a governmental instrumentality focused on financing the development of new transmission projects to promote renewable energy. RETA is the first infrastructure authority of its kind in the nation to focus on renewable energy transmission. RETA's purpose is to diversify and expand the state's economy and promote environmental stewardship through improvements in the electric transmission system within New Mexico.

In accordance with the authority delegated to RETA by the New Mexico Legislature, and RETA's policies, RETA has entered into a Memorandum of Understanding with the Lucky Corridor Transmission Project based on its economic and other benefits to the State in the area of renewable energy development. Upon receipt of an SF 299 Application from Lucky Corridor LLC, we urge the Carson National Forest / BLM Taos Field Office to thoroughly and expeditiously review the merits of this project under the National Environmental Policy Act."

Very truly yours,

Jeremy Turner
Executive Director

1516 Paseo de Peralta • Santa Fe, New Mexico 87501
Phone (505) 983-4458 • Fax (505) 983-4472

CONGRESS OF THE UNITED STATES

DELEGATION OFFICE
STATE OF NEW MEXICO
HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510
(202) 631-2322

August 6, 2013

Lynn Chapman Greene
Lucky Corridor
6526 Wauconda Drive
Larkspur, CO 80118

Dear Ms. Greene:

I am pleased to inform you that your request for assistance in identifying potential funding sources for an electricity transmission project in northern New Mexico has been approved for research by all five Members of the New Mexico Delegation. Upon approval, all requests are researched in the order in which they were received. The amount of time necessary to complete research on a request is dependent on the number of requests submitted. Most projects take less than 30 days from the approval date to research completion.

Once research is completed and possible sources of funding have been identified, you will receive descriptions of the relevant funding programs as well as information contacts. It will then be up to you to review the suggestions provided and submit proposals to any programs for which you feel you may be eligible.

Please also note that once a project has been approved for the Delegation Office, the individual Members' offices will do no further work on that project. Any questions, correspondence, or additional information should be directed to the Delegation Office.

I look forward to serving you in this endeavor, and will contact you when the research on your project is completed.

Sincerely,

NEW MEXICO CONGRESSIONAL
DELEGATION PROJECTS OFFICE

Kristine M. Dietz
Director

July 18, 2011

Lynn Chapman Greene, President & CEO
Lucky Corridor Transmission Development
lynn@luckycorridor.com
303/681-3073

Ms. Greene,

Given your involvement with the Lucky Corridor Transmission Development in the state of New Mexico, I have attached a study conducted by Los Alamos National Laboratory (LANL) for your review and consideration regarding the siting and development of Lucky Corridor.

In the enclosed study, Hutcherson Ranch, and the two other ranches in the Coalition Renewable Landowner Association (CRELA) North Ranches landowner association, offer ready access to the Lucky Corridor Transmission development. LANL's study identified this specific area as a *significant* development site for capturing, converting and transmitting large quantities of renewable energy into New Mexico's electric grid.

Hutcherson Ranch is a 24,000+ acre ranch, approximately 40 miles southwest of Clayton, New Mexico. Table F-1, page 39, provides collected on-site wind speed data. The wind speeds collected thus far, as you can see, range between 22 and 40 miles per hour. Wind data continues to be collected and will be updated at the end of October 2011.

In addition to high wind speeds, the Hutcherson Ranch boasts land that is virtually free of sage bush and trees, as seen on pages 39 through 41 of the enclosed study. Therefore, environmental concerns pose minimal issues with the Endangered Species Act (ESA). Specifically, according to recent studies, Hutcherson Ranch is situated well north of the habitat of the Lesser Prairie Chicken, is free of Black-Tailed Prairie Dog habitats, and is not identified to be a migration route of any other endangered or listed species. The ranch has excellent easy access on the north and south, and east and west outside perimeter with good established caliche roads within the ranch.

We would welcome further information and contact from you regarding Hutcherson Ranch and the development of Lucky Corridor.

Regards,
Suzy and Mike Hutcherson
suzy.hutcherson@gmail.com
806/441-7552

NEW MEXICO
ECONOMIC DEVELOPMENT
Department

SUSANA MARTINEZ
GOVERNOR

JON BARELA
CABINET SECRETARY DESIGNATE

June 8, 2011

Tim Meeks, Administrator
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

Re: Lucky Corridor, New Mexico Transmission Project

Dear Administrator Meeks:

I wish to express support for the Western Area Power Administration's ongoing work in helping to finance the Lucky Corridor transmission project.

This transmission project is 102 miles of double circuit 230-kV line, between Gladstone and Taos, New Mexico, which will correct a long-term service reliability problem in New Mexico, as well as build an east-west backbone that is a key missing component needed to allow the export of electricity produced from New Mexico's renewable energy and gas resources to California and other Western states, through the Four Corners switchyard (the "Project"). The Los Alamos National Laboratory is also consulting on the Project. New Mexico is the leading producer of natural gas in the Western grid.

Lucky Corridor personnel have worked diligently with three Cabinet-level departments, New Mexico's Economic Development Department, Department of Workforce Solutions and Department of Veterans' Services, to create a job training and job creation plan. Together, we contacted the Presidents and leaders of university and community colleges in the Project area, took inventory of the assets that could be used to train workers, and also looked at equipment that is lacking, and methods to pay for necessary equipment. New Mexico has the highest ratio of veterans to population of any state in America. Lucky Corridor worked with us to plan to use our field offices serving veterans to find disciplined workers that can be trained to help us build the 21st century electrical grid.

Two economic studies have been done regarding the very positive impact this Project will have on the economy of New Mexico. Lucky Corridor hired the University of New Mexico's Bureau of Business and Economic Research, whose study showed that the Project area has the third highest rate of poverty in the U.S. In Colfax County alone, 17% of the workforce has left since 2008, because of a lack of jobs. 35% of all housing units in that county are now vacant. In the Project area as a whole, median income is 29% beneath the national average, with 17.9% of residents living beneath the poverty line.

New Mexico itself commissioned the second study. Impact DataSource of Austin, TX found that the economic output of the Project within New Mexico, in just its first ten years, is about $587 million. Because this transmission line will allow planned generation to be built, and other transmission lines to be built, the study estimates that over 3,000 direct, indirect and induced jobs will be created. New Mexico needs this job creation, and offers its full cooperation to Western to get construction underway. Our Renewable Energy Transmission Authority has issued an MOU to support the Project. In addition, the Authority, subject to final approval by its Board of Directors would consider providing financing and backstop eminent domain for the project.

We are aware of the hurdles faced by Projects of this kind. To minimize environmental impact, the Project seeks to purchase an existing right-of-way. These and other milestones will hopefully be made possible with state and federal support.

New Mexico has hosted coal-fired electricity generation facilities supplying several states for about fifty years, which have been a valuable part of our tax base. Now, California has imposed limitations on those plants that could lead to a significant decline in our tax base.

Since 2003, our state has taken a leading role in transmission and other planning designed to keep Four Corners as a vibrant market hub, supporting its gradual conversion to energy produced from gas and renewables tailored to current market requirements. The fact that this Project is a direct route to supplying that export market with clean energy, and to fixing regional reliability problems in the West, makes it worthy of your continued attention.

Please make funding this transmission Project a priority for the Western Area Power Administration. We join Senator Bingaman and Congressman Lujan in offering our support.

Sincerely,

Jon Barela
Cabinet Secretary

Joseph M. Montoya Bldg. 1100 St. Francis Dr. Santa Fe, New Mexico 87505-4147
(800) 374-3061 (505) 827-0307 fax: (505) 827-0263 goNM.biz

CS

CS RANCH, INC.

620 HIGHWAY 58
CIMARRON, NEW MEXICO 87714

OFFICE: (575) 376-2827
FAX: (575) 376-2595
E-MAIL: CSRANCH@BACAVALLEY.COM

April 23, 2010

Transmission Infrastructure Program
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

Re: The Lucky Corridor

Ladies and Gentlemen:

On behalf of the CS Ranch, we wish to offer our support to the Lucky Corridor project. We are aware that Lucky Corridor, LLC has applied to Western's Transmission Infrastructure Program for funding to help replace an old transmission line that goes through our ranch with a new line capable of carrying additional electricity, made from our local renewable energy resources. We own about a third of Segment A of the Lucky Corridor's route.

In recent years, our local economy has suffered. Young people often have to leave this area in order to find work. The proposed $400 million construction project would be good for the local economy and the long term future of northeastern New Mexico. We support the concept of using the nearby Springer campus of Luna Community College to train people for vocations useful in the emerging clean energy economy.

We have had an opportunity to meet with principals of the Lucky Corridor, LLC, and to ask questions. Subject to agreeing to terms and consideration in writing, we are generally willing to allow a new transmission line on an easement through our property.

Thank you for your continuing support of the Lucky Corridor project.

Very truly yours,

J. Kirk Davis
President

Express UU Bar Ranch
1115 State Rd 21
Cimarron, NM 87714
Office 575 376 2035 Fax 575 376 2063

April 20, 2010

Transmission Infrastructure Program
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

Re: The Lucky Corridor

Ladies and Gentlemen:

On behalf of the UU Bar Ranch, we wish to offer our support to the Lucky Corridor project. We are aware that Lucky Corridor, LLC has applied to Western's Transmission Infrastructure Program for funding to help replace an old transmission line that goes through our ranch with a new line capable of carrying additional electricity, made from our local renewable and gas resources. According to the information we have been provided, it appears that approximately 20% of Segment A of the Lucky Corridor's route passes through a portion of our Ranch.

In recent years, our local economy has suffered. Young people often have to leave the Cimarron area in order to find work. This $400 million construction project would be an amazing opportunity to increase the Northern New Mexico economy. We also support the concept of using the nearby Springer campus of Luna Community College to train people for vocations useful in the emerging clean energy economy.

We have had an opportunity to meet with principals of the Lucky Corridor, LLC to ask questions. Subject to agreeing to exact terms and consideration in writing, we are generally willing to allow a new transmission line on an easement through our property.

Thank you for your continuing support of the Lucky Corridor project.

Best regards,

Kent W. Gardner
General Counsel

KWG:cf
cc: Steve Boyce

T:\3000.001\LETT\Ltr Western Area Power Administration endorsing Lucky Corridor project (2992).DOC

RBC Capital Markets®

RBC Capital Markets Corporation
6301 Uptown Blvd. NE, Suite 110
Albuquerque, New Mexico 87110
(505) 872-5999
(505) 872-5979 - Fax

April 16, 2010

Lynn Chapman Greene, Manager
Luck of the Irish, LLC
6526 Wauconda Dr.
Larkspur, CO 80118

Re: Lucky Corridor-Financing Facility

Dear Lynn:

Congratulations on being selected on the second round of selected prospects. We know you are able to move more quickly than most transmission projects which are hosted by cooperative landowners seeking an annual payment through lease of the Corridor. By originating the Lucky Corridor project (the "Project") along with the landowners and their counsel, your company is well-situated to play an integral role in the development and ownership of this Project.

RBC Capital Markets ("RBC CM"), has a long history with its affiliates in providing both corporate and structured finance facilities in the past. RBC CM is interested in financing transmission projects or renewable energy projects. The possibility of the Project receiving loan guarantees or other help from the Western Area Power Administration ("Western"), to advance economic stimulus of the U.S. economy through moving renewable energy to load centers, makes it even more interesting to discuss a role for our company in the Project.

We understand that you have filed the {Statement of Interest} with Western on April 3, 2009, nominating the Project for federal development funds. The Lucky Corridor is likely to be in excess of 130 miles long, and is in a premium area of wind and solar energy resources on both sides of the New Mexico-Colorado border. If this Project is completed, it will allow many megawatts of renewable energy to help power the growing needs of the states within the Western electricity grid.

In relation to that nomination process, we provide this letter and acknowledge that this letter may be submitted to Western, we also submit the link to our website www.rbccm.com.

We are pleased to provide this letter confirming our support as a potential debt financier for the construction and debt funding requirements of the Project.

RBC Capital Markets Corporation
6301 Uptown Blvd. NE, Suite 110
Albuquerque, New Mexico 87110
(505) 872-5999
(505) 872-5979 - Fax

This letter does not constitute any commitment by RBC CM to underwrite or provide funds to the project. We shall be entitled to undertake all due diligence necessary in the evaluation of the Project and shall in our absolute discretion determine whether or not to provide financing for the project.

We look forward to working with you on this important transaction.

Very truly yours,

RBC Capital Markets Corporation

Paul J. Cassidy
Managing Director

Luna Community College

Office of the Vice President for Instruction

April 16, 2010

Transmission Infrastructure Program
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

Re: The Lucky Corridor

Ladies and Gentlemen:

On behalf of Luna Community College ("Luna"), we want to explain our willingness to work with the job training goals of the Green Jobs for Americans Program initiated by Lucky Corridor, LLC and EC Source Services.

Luna understands that the Lucky Corridor, LLC has applied to the Western Area Power Administration ("Western") for project funding through its Transmission Infrastructure Program ("TIP"), funded by the Recovery Act. Winning approval for Recovery Act funding may be dependent in part on whether the project causes jobs to be created in our area, as well as on our area's ability to supply a trained workforce, and put the economic stimulus dollars to good work.

Luna Community College (LCC) is the only community college in northeastern New Mexico. LCC is located in the lower slopes of the majestic Sangre de Cristo Mountain Range overlooking the city of Las Vegas, New Mexico. LCC enjoys an outstanding reputation for its caliber of facilities, teaching methods, curricula, and dedication to excellence.

LCC has satellite centers in the northeasterner NM towns of Mora, Springer and Santa Rosa, New Mexico. These satellites, in addition to the main campus, serve participants of the Springer Municipal Schools, Maxwell Municipal Schools, and Santa Rosa Consolidated Schools, which are within Colfax and Guadalupe counties. LCC also has a presence in Pecos and Wagon Mound schools.

LUNA COMMUNITY COLLEGE
366 Luna Drive • Las Vegas • New Mexico • 87701
Phone: (505) 454-2567 or 1-800-588-7232 • Fax: (505) 454-2519 • E-mail: vmartinez@luna.edu

Our mission includes:

1. Prepare students for employment through a broad range of vocational, technical, and professional education programs.
2. Enhance job effectiveness and continue training in keeping up with changes in the job market and technology.

After meeting to review the Green Jobs for Americans program and seeing the jobs to be created by this electrical transmission project, we assessed Luna's needs in order to host the job training at our Las Vegas and Springer campuses. As you will see on the attached Luna Community College Job Training Plan, we estimate that it will cost $250,000 to add equipment, staff and facilities necessary to host the journeyman linesman, commercial driver, and fire safety certification programs at Luna. Fortunately, other Luna programs, already well-established here, share some components with these new certifications, so we will not have to start from scratch.

Existing state programs, some federally funded, may be available to help finance training for the new jobs the Lucky Corridor project will bring to our region. The New Mexico Department of Workforce Solutions may be especially helpful in this regard.

Please look favorably upon the Lucky Corridor proposal to bring more jobs and job training to our area, which is in need of economic stimulus. It certainly appears that the job training for new jobs in the electric industry will be valuable for our students, and lead to further well-paying green jobs for them, even after this initial project is completed.

Very truly yours,

Vidal Martinez, Ed.D.,
Vice President for Instruction

Attachment: Breakdown of equipment

Here is an estimate of equipment and educational supplies that is needed to expand our CDL program at Luna Community College:

Item(s):	Cost:
2 Certified CDL student driving trucks	$95,000
Certified flat bed 40 foot trailer	$15,000
2 Dry van 48 foot trailer	$24,000
Full time certified instructor	$40,000
Part time driving instructor	$10,000
Instructional classroom supplies:	
*Large LCD Monitor, software, Instructor computer, students computer stations	$18,000
poly-com for distance learning	$10,000
3 Driving simulators	$15,000
Classroom demonstration and application models.	$18,000
Updated curriculum	$ 5,000
TOTAL	**$250,000.00**

STANDARD FORM 299 (05/2009)
Prescribed by DOI/USDA/DOT
P.L. 96-487 and Federal
Register Notice 5-22-95

APPLICATION FOR TRANSPORTATION AND UTILITY SYSTEMS AND FACILITIES ON FEDERAL LANDS

FORM APPROVED
OMB Control Number: 0596-0082
Expiration Date: 1/31/2017

FOR AGENCY USE ONLY

Application Number

Date Filed

NOTE: Before completing and filing the application, the applicant should completely review this package and schedule a preapplication meeting with representatives of the agency responsible for processing the application. Each agency may have specific and unique requirements to be met in preparing and processing the application. Many times, with the help of the agency representative, the application can be completed at the preapplication meeting.

1. Name and address of applicant *(include zip code)*

Lucky Corridor, LLC
6526 Wauconda Dr.
Larkspur, CO 80118

2. Name, title, and address of authorized agent if different from item 1 *(include zip code)*

Lynn Chapman Greene, Manager/CEO
lynn@luckycorridor.com
www.luckycorridor.com

3. Telephone (area code)
303 681 3073 - Office
Applicant
303 596 4821 - Cell
Authorized Agent
Lynn Chapman Greene

4. As applicant are you? *(check one)*

a. ☐ Individual
b. ☐ Corporation*
c. ☒ Partnership/Association*
d. ☐ State Government/State Agency
e. ☐ Local Government
f. ☐ Federal Agency

* *If checked, complete supplemental page*

5. Specify what application is for: *(check one)*

a. ☐ New authorization
b. ☐ Renewing existing authorization No.
c. ☐ Amend existing authorization No.
d. ☐ Assign existing authorization No.
e. ☐ Existing use for which no authorization has been received *
f. ☒ Other*

* *If checked, provide details under item 7*

6. If an individual, or partnership are you a citizen(s) of the United States? ☒ Yes ☐ No

7. Project description (describe in detail): (a) Type of system or facility, *(e.g., canal, pipeline, road)*; (b) related structures and facilities; (c) physical specifications *(Length, width, grading, etc.)*; (d) term of years needed: (e) time of year of use or operation; (f) Volume or amount of product to be transported; (g) duration and timing of construction; and (h) temporary work areas needed for construction *(Attach additional sheets, if additional space is needed.)*

Please see attached

8. Attach a map covering area and show location of project proposal Please See Attached

9. State or Local government approval: ☐ Attached ☒ To be Applied for ☐ Not Required

10. Nonreturnable application fee: ☐ Attached ☐ Not required To be submitted when fee amount identified

11. Does project cross international boundary or affect international waterways? ☐ Yes ☒ No *(if "yes," indicate on map)*

12. Give statement of your technical and financial capability to construct, operate, maintain, and terminate system for which authorization is being requested.

Please see attached

13a. Describe other reasonable alternative routes and modes considered.

Please see attached

b. Why were these alternatives not selected?

Please see attached

c. Give explanation as t o why it is necessary to cross Federal Lands.

Please see attached.

14. List authorizations and pending applications filed for similar projects which may provide information to the authorizing agency. *(Specify number, date, code, or name)*

Please see attached

15. Provide statement of need for project, including the economic feasibility and items such as: (a) cost of proposal (construction, operation, and maintenance); (b) estimated cost of next best alternative; and (c) expected public benefits.

Please see attached.

16. Describe probable effects on the population in the area, including the social and economic aspects, and the rural lifestyles.

Please see attached.

17. Describe likely environmental effects that the proposed project will have on: (a) air quality; (b) visual impact; (c) surface and ground water quality and quantity; (d) the control or structural change on any stream or other body of water; (e) existing noise levels; and (f) the surface of the land, including vegetation, permafrost, soil, and soil stability.

Please see attached

18. Describe the probable effects that the proposed project will have on (a) populations of fish, plantlife, wildlife, and marine life, including threatened and endangered species; and (b) marine mammals, including hunting, capturing, collecting, or killing these animals.

Please see attached.

19. State whether any hazardous material, as defined in this paragraph, will be used, produced, transported or stored on or within the right-of-way or any of the right-of-way facilities, or used in the construction, operation, maintenance or termination of the right-of-way or any of its facilities. "Hazardous material" means any substance, pollutant or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCIA Section 101(14), 42 U.S.C. 9601(14), nor does the term include natural gas.

Please see attached

20. Name all the Department(s)/Agency(ies) where this application is being filed.

U.S. Forest Service, Carson National Forest

I HEREBY CERTIFY, That I am of legal age and authorized to do business in the State and that I have personally examined the information contained in the application and believe that the information submitted is correct to the best of my knowledge.

Signature of Applicant	Date
Lucky Corrida, LLC By: Lynn C Greene, CEO/Manager	August 23,2016

Title 18, U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

GENERAL INFORMATION
ALASKA NATIONAL INTEREST LANDS

This application will be used when applying for a right-of-way, permit, license, lease, or certificate for the use of Federal lands which lie within conservation system units and National Recreation or Conservation Areas defined in the Alaska National Interest lands Conservation Act. Conservation system units include the National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers System, National Trails System, National Wilderness Preservation System, and National Forest Monuments.

Transportation and utility systems and facility uses for which the application may be used are:

1. Canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other systems for the transportation of water.

2. Pipelines and other systems for the transportation of liquids other than water, including oil, natural gas, synthetic liquid and gaseous fuels, and any refined product produced therefrom.

3. Pipelines, slurry and emulsion systems, and conveyor belts for transportation of solid materials.

4. Systems for the transmission and distribution of electric energy.

5. Systems for transmission or reception of radio, television, telephone, telegraph, and other electronic signals, and other means of communications.

6. Improved right-of-way for snow machines, air cushion vehicles, and all-terrain vehicles.

7. Roads, highways, railroads, tunnels, tramways, airports, landing strips, docks, and other systems of general transportation.

This application must be filed simultaneously with each Federal department or agency requiring authorization to establish and operate your proposal.

In Alaska, the following agencies will help the applicant file an application and identify the other agencies the applicant should contact and possibly file with:

Department of Agriculture
Regional Forester, Forest Service (USFS)
Federal Office Building,
P.O. Box 21628
Juneau, Alaska 99802-1628
Telephone: (907) 586-7847 *(or a local Forest Service Office)*

Department of the Interior
Bureau of Indian Affairs (BIA)
Juneau Area Office
Federal Building Annex
9109 Mendenhall Mall Road, Suite 5
Juneau, Alaska 99802
Telephone: (907) 586-7177

Department of the Interior
Bureau of Land Management
222 West 7th Avenue
P.O. Box 13
Anchorage, Alaska 99513-7599
Telephone: (907) 271-5477 (or a local BLM Office)

U.S. Fish & Wildlife Service (FWS)
Office of the Regional Director
1011 East Tudor Road
Anchorage, Alaska 99503
Telephone: (907) 786-3440

National Park Service (NPA)
Alaska Regional Office, 2225
Gambell St., Rm. 107
Anchorage, Alaska 99502-2892
Telephone: (907) 786-3440

Note - Filings with any Interior agency may be filed with any office noted above or with the Office of the Secretary of the Interior, Regional Environmental Office, P.O. Box 120, 1675 C Street, Anchorage, Alaska 99513.

Department of Transportation
Federal Aviation Administration
Alaska Region AAL-4, 222 West 7th Ave., Box 14
Anchorage, Alaska 99513-7587
Telephone: (907) 271-5285

NOTE - The Department of Transportation has established the above central filing point for agencies within that Department. Affected agencies are: Federal Aviation Administration (FAA), Coast Guard (USCG), Federal Highway Administration (FHWA), Federal Railroad Administration (FRA).

OTHER THAN ALASKA NATIONAL INTEREST LANDS

Use of this form is not limited to National Interest Conservation Lands of Alaska.

Individual department/agencies may authorize the use of this form by applicants for transportation and utility systems and facilities on other Federal lands outside those areas described above.

For proposals located outside of Alaska, applications will be filed at the local agency office or at a location specified by the responsible Federal agency.

SPECIFIC INSTRUCTIONS
(Items not listed are self-explanatory)

7 Attach preliminary site and facility construction plans. The responsible agency will provide instructions whenever specific plans are required.

8 Generally, the map must show the section(s), township(s), and range(s) within which the project is to be located. Show the proposed location of the project on the map as accurately as possible. Some agencies require detailed survey maps. The responsible agency will provide additional instructions.

9 , 10, and 12 The responsible agency will provide additional instructions.

13 Providing information on alternate routes and modes in as much detail as possible, discussing why certain routes or modes were rejected and why it is necessary to cross Federal lands will assist the agency(ies) in processing your application and reaching a final decision. Include only reasonable alternate routes and modes as related to current technology and economics.

14 The responsible agency will provide instructions.

15 Generally, a simple statement of the purpose of the proposal will be sufficient. However, major proposals located in critical or sensitive areas may require a full analysis with additional specific information. The responsible agency will provide additional instructions.

16 through 19 Providing this information is as much detail as possible will assist the Federal agency(ies) in processing the application and reaching a decision. When completing these items, you should use a sound judgment in furnishing relevant information. For example, if the project is not near a stream or other body of water, do not address this subject. The responsible agency will provide additional instructions.

Application must be signed by the applicant or applicant's authorized representative.

EFFECT OF NOT PROVIDING INFORMATION: Disclosure of the information is voluntary. If all the information is not provided, the application may be rejected.

DATA COLLECTION STATEMENT

The Federal agencies collect this information from applicants requesting right-of-way, permit, license, lease, or certification for the use of Federal lands. The Federal agencies use this information to evaluate the applicant's proposal. The public is obligated to submit this form if they wish to obtain permission to use Federal lands.

SUPPLEMENTAL		
NOTE: The responsible agency(ies) will provide instructions	CHECK APPROPRIATE BLOCK	
I - PRIVATE CORPORATIONS	ATTACHED	FILED*
a. Articles of Incorporation	☐	☐
b. Corporation Bylaws	☐	☐
c. A certification from the State showing the corporation is in good standing and is entitled to operate within the State	☐	☐
d Copy of resolution authorizing filing	☐	☐
e. The name and address of each shareholder owning 3 percent or more of the shares, together with the number and percentage of any class of voting shares of the entity which such shareholder is authorized to vote and the name and address of each affiliate of the entity together with, in the case of an affiliate controlled by the entity, the number of shares and the percentage of any class of voting stock of that affiliate owned, directly or indirectly, by that entity, and in the case of an affiliate which controls that entity, the number of shares and the percentage of any class of voting stock of that entity owned, directly or indirectly, by the affiliate.	☐	☐
f. If application is for an oil or gas pipeline, describe any related right- of-way or temporary use permit applications, and identify previous applications.	☐	☐
g. If application is for an oil and gas pipeline, identify all Federal lands by agency impacted by proposal.	☐	☐
II - PUBLIC CORPORATIONS		
a. Copy of law forming corporation	☐	☐
b. Proof of organization	☐	☐
c. Copy of Bylaws	☐	☐
d. Copy of resolution authorizing filing	☐	☐
e. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	☐	☐
III - PARTNERSHIP OR OTHER UNINCORPORATED ENTITY		
a. Articles of association, if any	☒	☐
b. If one partner is authorized to sign, resolution authorizing action is	☒	☐
c. Name and address of each participant, partner, association, or other	☒	☐
d. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	N☒A	☐

*If the required information is already filed with the agency processing this application and is current, check block entitled "Filed." Provide the file identification information *(e.g., number, date, code, name)*. If not on file or current, attach the requested information.

NOTICES

Note: This applies to the Department of Agriculture/Forest Service (FS)

This information is needed by the Forest Service to evaluate the requests to use National Forest System lands and manage those lands to protect natural resources, administer the use, and ensure public health and safety. This information is required to obtain or retain a benefit. The authority for that requirement is provided by the Organic Act of 1897 and the Federal Land Policy and Management Act of 1976, which authorize the secretary of Agriculture to promulgate rules and regulations for authorizing and managing National Forest System lands. These statutes, along with the Term Permit Act, National Forest Ski Area Permit Act, Granger-Thye Act, Mineral Leasing Act, Alaska Term Permit Act, Act of September 3, 1954, Wilderness Act, National Forest Roads and Trails Act, Act of November 16, 1973, Archeological Resources Protection Act, and Alaska National Interest Lands Conservation Act, authorize the Secretary of Agriculture to issue authorizations or the use and occupancy of National Forest System lands. The Secretary of Agriculture's regulations at 36 CFR Part 251, Subpart B, establish procedures for issuing those authorizations.

BURDEN AND NONDISCRIMINATION STATEMENTS

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 8 hours hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720- 2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

CONTENTS

Exhibits

Exhibit A: Z Global Report Update 2015

Exhibit B: BBER Economic Conditions Study 2016

Exhibit C: Impact Data Source Economic Impact Report 2016

Appendix

Appendix A: Corporation Information

1. Articles of Organization
2. Operating Agreement (Signature Pages Upon Request)
3. A certification from the state of Colorado showing the limited liability company is in good standing and a certification from the state of New Mexico showing that the company is entitled to operate within New Mexico
4. Copy of resolution authorizing filing
5. Name and address of each equity owner holding 3 percent or more of the company shares

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1. Name and Address of Applicant

Lucky Corridor, LLC
Lynn Chapman Greene, Manager, CEO
6526 Wauconda Dr.
Larkspur, CO 80118
lynn@luckycorridor.com
www.luckycorridor.com

2. Name, Title, and Address of Authorized Agent

See above.

3. Telephone Number of Applicant

Office: 303-681-3073
Cell: 303-596-4821
Fax: 303-681-3499

4. Organizational Status of Applicant

a. ☐ Individual
b. ☐ Corporation*
c. ☒ Partnership/Association (LLC)
d. ☐ State Government/State Agency
e. ☐ Local Government
f. ☐ Federal Agency

Lucky Corridor, LLC (the Company) is a Colorado limited liability company qualified to do business in New Mexico, taxed as a partnership, formed on October 3, 2007 to develop, acquire, construct, and operate electricity transmission infrastructure in northern New Mexico, including the proposed Lucky Corridor Transmission Line Project (Project).

*Appendix A provides supplemental information required by Standard Form 299 (SF-299) describing Lucky Corridor, LLC, including:

- Articles of Organization
- Operating Agreement
- A certification from the state of Colorado showing the limited liability company is in good standing and a certification from the state of New Mexico showing that the company is entitled to operate within New Mexico
- Copy of resolution authorizing filing
- Name and address of each equity owner holding 3 percent or more of the company shares

5. Purpose of the Application

a. ☐ New authorization
b. ☐ Renewing existing authorization
c. ☐ Amend existing authorization
d. ☐ Assign existing authorization
e. ☐ Existing use for which no authorization has been received
f. ☒ Other* If checked, provide details under Item 7

6. Citizenship of the Applicant

Are you a citizen of the U.S.?

☒ Yes ☐ No

7. Project Description

(a) Type of System or Facility

The Project is a proposed new, shorter route for a 345-kV single circuit electric transmission line (Lucky Corridor Transmission Project or Lucky Facilities), reduced to 62 miles from the 130 miles proposed in the Project's November, 2013 ***First Amended SF-299*** filing. The Project, when passing through federal lands, would be constructed adjacent to the existing Tri-State Generation and Transmission Association 115-kV transmission line (Tri-State Line), which was built decades ago within a non-exclusive 12-mile easement through United States Forest Service (USFS) lands in Taos Canyon. Applicant will also accept any variant path through these 12 miles of USFS lands as determined by the USFS based on its recent completion of the ***Tri-State Taos to Black Lake Transmission Line Access Project prepared by the Camino Real Ranger District, Carson National Forest, Taos County, NM; Preliminary Environmental Assessment (PEA 2016)***.

Lucky Corridor is requesting a new 150-foot right-of-way (ROW) near or adjacent to the existing Tri-State ROW. However, if it is determined to be in the public benefit to mitigate fire risk by removing the old Tri-State Line through these 12 miles, Lucky Corridor is willing, subject to certain terms, to pay for the removal of the Tri-State Line, and to construct sufficient transmission capacity for Tri-State to also use the new facilities, which could reduce the ROW needed from 150 feet to 50 feet in addition to the 100 feet currently occupied by the Tri-State Line.

This Second Amended SF-299 Application is a request for a Special Use Permit (SUP) for the Project to cross 12 miles of USFS land in the Carson National Forest (see Figure 1). The Project has no need to acquire additional State lands to construct Lucky Facilities. The remaining approximately 50 miles of ROW needed for the Project are on private lands.

The Project would span approximately 62 miles from a substation near Springer, New Mexico, to an interconnection point with the Taos Substation near Taos, New Mexico (Figure 1). It would be constructed in Colfax and Taos Counties.

The Project would provide modernized transmission infrastructure through very sensitive USFS lands, where the risk of fire is often high. There is a recognized national and local interest in replacing old transmission infrastructure on sensitive federal lands with steel, not wood, towers, and with sophisticated fiber-based monitoring equipment, to mitigate fire risk.

A recent study on the importance of this work to mitigate fire risk can be found at: http://www.ceati.com/projects/publications/publication-details/?pid=3391 (CEATI 2016).

Further, Tucson Electric Power conducted a study showing that steel poles have life cycle cost advantages, better strength and reliability, and environmental benefits over wood poles (Hall and Runion 2010). Another recent study showed that steel poles have environmental sustainability advantages over wood poles in terms of lower greenhouse gas production, less impact on forests and related habitat, and lower generation of untreated waste (Thimons 2013).

The Project addresses the voltage and capacity constraint on the bi-directional electricity pathway in northern New Mexico currently experienced with the existing, aged Tri-State Line. The existing 115-kV transmission line is over 50 years old (constructed in 1963) (PEA 2016), and has little to no remaining electric transmission capacity.

The overall purpose of the Project is to carry clean energy generated from New Mexico's top grade renewable energy resources to western utilities that can take delivery at the Four Corners switchyard located in the northwestern corner of New Mexico. The proposed transmission facilities would better enable delivery to western markets of electricity produced from the exceptional renewable energy resources in northern New Mexico. Because of the already planned retirement of electricity generating plants reliant on fossil fuels, historically scheduled through New Mexico's significant Four Corners NYMEX trading hub, if new transmission and new clean energy generation plants are not soon built, the southwestern U.S. could experience steep price increases for electric power.

If the electricity supply is cut by closing coal-fired power plants without substitute supply being ready for consumers, the resulting electricity price increases could cause further economic distress in northern New Mexico, and elsewhere in the U.S. Southwest. Clean energy can only re-supply the Four Corners hub if new transmission is built to the renewable energy resource zones. For this important reason, the Federal Energy Regulatory Commission (FERC) has granted the request of Lucky Corridor, LLC for authority to develop the proposed Lucky Facilities. The Company is ready to provide the transmission, and the customers of the Lucky Corridor Transmission Project are ready to provide the electricity, generated in northern New Mexico, currently required by southwestern states' Renewable Portfolio Standards and emerging enhanced clean air standards. The FERC case files are available upon request.

The FERC provides a relatively new U.S. framework to pay for transmission lines needed to move electricity made from renewable and natural gas resources in the rural U.S. to urban areas without unduly burdening rural citizens, who do not have the need for significant new energy supplies or their related infrastructure (and attendant costs).

The Project was approved to charge a tariff for its new facilities in FERC Dockets No. 12-1832-000, 15-839-000 and 15-842-000; therefore, the Project is currently authorized to sell capacity on a to-be-built system. It currently has sold 500 MW of the 700 MW of transmission capacity it is authorized to sell on the proposed Project, to transport electricity made from wind energy. In addition, the Company hopes to sell transmission services to developing solar energy projects in the Project area.

The Company also proposes that its construction and maintenance protocols will be consistent with approved USFS best management practices (BMP) for not only the immediate ROW corridor, but also for an extended boundary, if mutually agreeable. Management practices will include reduction of hazardous fuels, such as dead trees within, and perhaps near, the ROW established for Lucky Facilities.

Importantly, several western states are competing to take away the market position held by New Mexico, which historically hosted big coal plants and the tax base they brought, supplying electricity at the Four Corners NYMEX market hub. These competing states include Texas, Arizona, Nevada, Wyoming, Utah, and California. Traditionally, the cheapest electricity sells first. Transmission cost is included in the sale price of the electricity. We believe northern New Mexico can supply the next generation of electricity needed at Four Corners at a cheaper price than its competitors.

Lucky Corridor, LLC commissioned a report on the viability of its plans, which is attached to this Amended Application. Please see ***"The Lucky Corridor Project: A Report of Load in the Los Angeles Basin and the Transmission Capability, Availability and the Feasibility of Moving Energy from New Mexico into Southern California".***

The path between world class renewable energy resources and the biggest retiring coal hub in America, Four Corners, is shortest through Taos, and therefore the delivered cost of energy will be low. The renewable resources in northern New Mexico are more diversified and robust than in competing areas. The Taos region out-performs competitors that have only solar energy, and places such as Wyoming, which has only wind energy, not solar, by having both solar energy and the wind energy to the east supplied through Taos. The wind energy in northern New Mexico is also unique in that it is strong even on a summer afternoon, when the southwestern U.S. has peak electricity demand.

The Taos region, with the addition of modern infrastructure, can itself significantly mitigate climate change in the western United States by supplying abundant clean energy at the time of day and time of year it is needed in western states.

Figure 1: Location Map

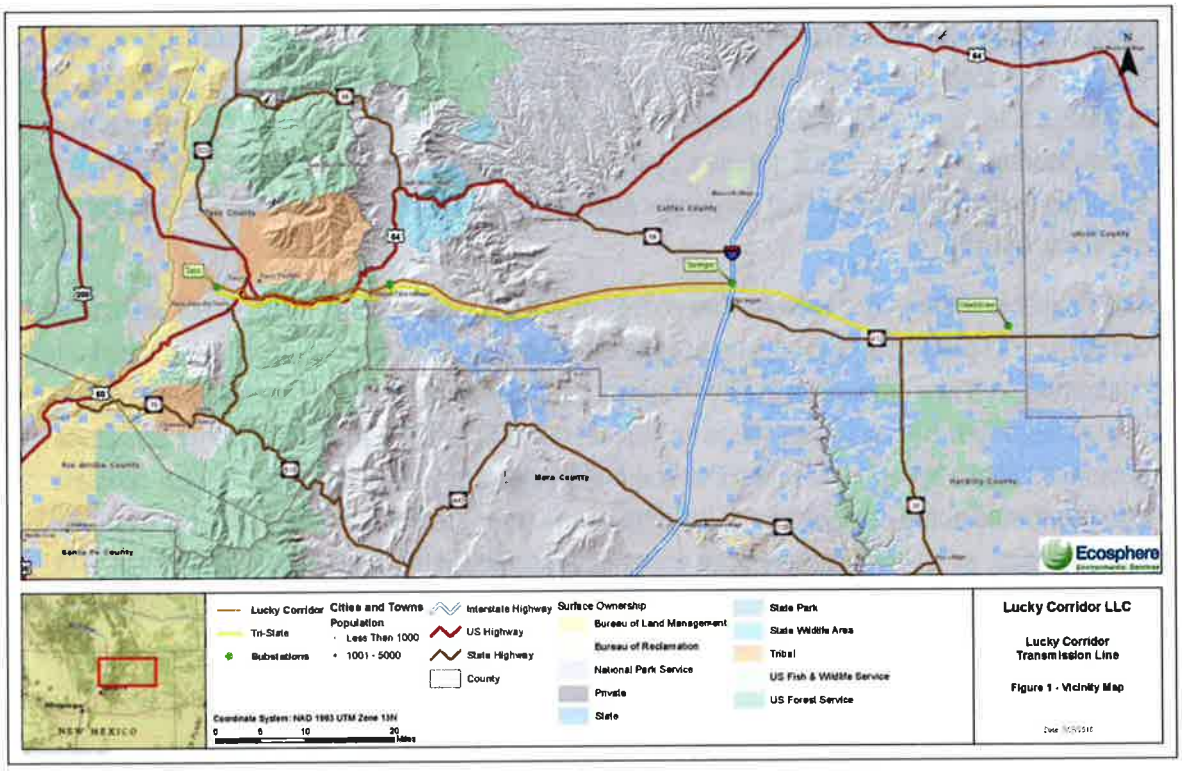
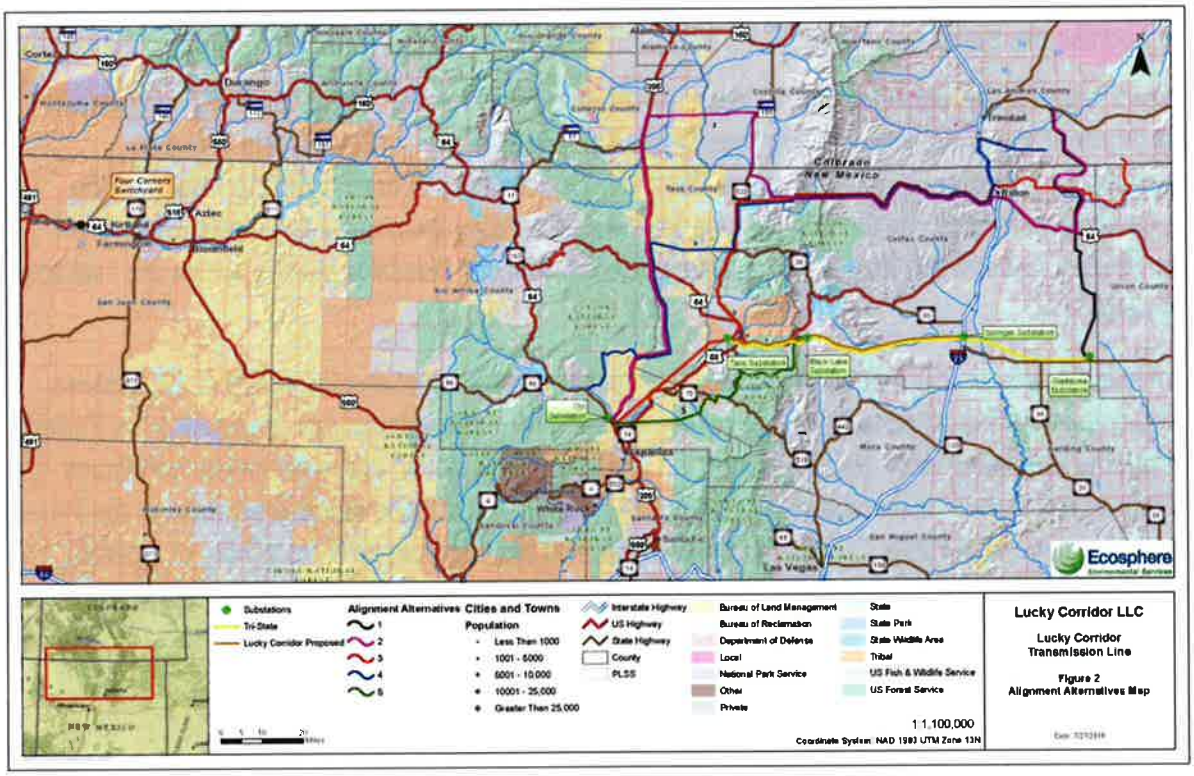


Figure 2: Alternatives Map



- The Lucky Corridor transmission line would create enough transmission capacity to encourage economic development in the Project area. Studies made on behalf of the Company by the New Mexico Economic Development Department through Impact Data Source of Austin, Texas, show that during construction the transmission line Project and associated renewable energy generation facilities could create up to 3,000 direct, indirect, and induced jobs in the Project area, which is one of the poorest areas in the U.S. (studies available upon request) (IDS 2016). The Company is open to consideration of any route that minimizes environmental impacts and maximizes potential economic benefits.
- The Project is in the public interest. The energy mix at the Four Corners NYMEX hub is changing. Some old coal plants are closing, and several others could follow. New Mexico has enjoyed a tax base from electricity production at Four Corners for decades, so has an interest in re-supplying the market there with electricity also made in New Mexico, from wind farms, solar plants and other generation plants based in New Mexico. The energy-rich area surrounding the Project contains significant wind energy that occurs at the time of day when the southwestern U.S. experiences peak demand, as well as first-rate solar energy (particularly in the Taos area), geothermal, and natural gas resources. This combination of clean energy resources may not occur together in such a concentration anywhere else in the western electricity grid.
- Data from the U.S. Department of Energy's National Renewable Energy Laboratory indicate that this area of New Mexico is ranked at the top of not just U.S. renewable resource zones, but at the top of worldwide rankings (http://www.nrel.gov/gis/). The Project area has been hampered by the lack of available transmission capacity needed to export electricity from New Mexico, which has impeded both energy development and associated economic development. The Project would address this system constraint.

The Project is part of the WestConnect 10 Year Transmission Plan for the western states, and is also in regional engineering studies with the Southwest Area Transmission group (SWAT) and with the management of the western grid, the Western Electricity Coordinating Council (WECC). However, the studies cannot progress unless the USFS properly studies the Project and helps finalize its route. The Company's electrical and civil engineers have completed successful feasibility studies, which are available upon request.

This Amended Application includes the required description of the Project and the scope of the facilities (Item 7(a)-(c)); an estimated schedule for constructing, operating, maintaining, and terminating the Project (Item 7(g)); the estimated life of the Project and the proposed construction and reclamation techniques (Item 7(d)); a map of the Project, showing its proposed location and existing facilities adjacent to the Project (Figure 1); a statement of Lucky Corridor, LLC's financial and technical capability to construct, operate, maintain, and terminate the Project (Item 12); any plans, contracts, agreements, or other information concerning Lucky Corridor, LLC's use of the ROW and its effect on competition (Item 15) (see 43 C.F.R. § 2804.12(a)).

Appendix A includes the Lucky Corridor, LLC Articles of Organization, Operating Agreement, Certificates of Good Standing from Colorado and New Mexico, a copy of the resolution authorizing filing, and the name and address of each equity owner holding 3 percent or more of the company shares.

(b) Related Structures and Facilities

Construction and operation of the Project would require installation of transmission structures, transmission structure foundations, substation improvements, and the potential for a limited number of access roads as studied in the recent Environmental Assessment completed by the Carson National Forest of the Project region. The substation improvements would consist of equipment, primarily new autotransformers, added to existing substations or added in new substations adjacent to the existing substations to accommodate the proposed transmission line. During construction, the Project would require temporary material laydown and staging areas as described below under construction activities.

Federal law and safety standards also require that fiber optic cable be run along with the electrical conductor cable.

(c) Physical Specifications

The Project would be constructed using a mixture of both galvanized steel lattice towers and Corten tubular steel monopole transmission structures. The foundations for the transmission structures vary depending on the rock at each foundation site. Subject to further engineering in compliance with the studies requested in this Amended Application, the height of the transmission structures would range from 125 to 140 feet tall (the existing transmission structures within the existing ROW are estimated to be 90 feet tall). The distance between transmission structures would be approximately 900-1,250 feet, which equates to approximately four to six structures per mile. Transmission line characteristics are listed in Table 1.

Table 1: Transmission Line Characteristics

Structure	Specification
Length of the Transmission Line (miles)	62 miles
Types of Transmission Structure	Weathered steel monopole
Structure Height—Monopole (feet)	125 – 140
Structure Foundation (square feet)	40 - 50
Structures per Mile (number)	4 - 6
Foundation Depth (feet)	12 - 20
Span Length between Structures (feet)	900 – 1,250
ROW Width Needed for Construction (feet)	150 – 200
Permanent ROW Width Needed (feet)	150
Voltage (kV), Circuit Configuration	345-kV single-circuit
Capacity (megawatts)	700 MW; MVA=1,500

Where transmission structures may exceed a height of 200 feet or are within a specified distance of an airport, the Federal Aviation Administration (FAA) requires that they be illuminated and/or marked. Transmission structures with this height typically are used for long spans, such as major river crossings (none planned by the Project), to maintain the ground-to-conductor clearance when the transmission line sags. The required lighting typically is a white strobe or steady red light and varies by time of day. The FAA could require marking as well, depending on terrain features, weather patterns, and geographic locations (FAA 2007).

To minimize environmental impacts, the Project would incorporate the following design elements:

- Use of Corten-weathering steel where appropriate, which seals itself by oxidizing, creating a rusty exterior color that blends well in wooded areas
- Use of monopole transmission structures to minimize the Project footprint in the ROW, and, in some areas, use of lattice towers to minimize height
- Non-specular, or non-shiny, conductor for the transmission wires to minimize reflectivity
- Long spans between structures to reduce the total number of structures required

(d) Term of Years Needed

Easements establishing ROWs with private landowners, where applicable, are anticipated to be perpetual. A long time horizon (30 years) is anticipated for any permit through federal lands.

(e) Time of Year of Use or Operation

Operation of the Project would be continuous, 24 hours per day, 365 days per year by Lucky Corridor, LLC or any successor in interest. Control of the flow of electricity through the transmission line would occur remotely in response to energy demand.

(f) Volume or Amount of Product to be Transported

The Project would be constructed with a capacity rating of under 1,000 MW, based upon system challenges, though the Mega Volt Amps (MVA) rating for the facilities installed will be higher than the amount of energy that can actually be transported through the existing regional system, which is common in transmission development. Because the capacity of regional infrastructure is currently constrained, even when new infrastructure is installed, it cannot be fully utilized, because of off-system constraints.

(g) Duration and Timing of Construction

Pre-construction engineering is anticipated to continue through 2017. Initiation of construction activities for the Project would begin no earlier than 2018, to allow for time to complete the NEPA process, acquire state and local permits, and conduct final engineering. Construction of individual transmission structures typically would require 3 weeks per structure over several months. The typical sequence of activities and associated equipment needs is listed in Table 2.

Table 2: Construction Activities and Equipment

Task	Equipment
Surveying	Utility vehicles, pickups, ATVs
Access	Graders, caterpillars, dump trucks, water trucks
Right-of-Way Clearing	Brush hogs, mowers, chain saws, skidders, bulldozers
Staging	Flatbeds with cranes, delivery trucks, pickups
Excavation	Backhoes, rotary drilling rigs, augers, cement mixers, pickups, ATVs, portable compressors
Structure Assembly	Cranes, material trucks, carryalls, pickups
Structure Placement	Cranes, boom trucks, pickups
Cable Pulling	Boom trucks/manlifts, reel trailers, hydraulic tensioning equipment, pickups
Cleanup	Flatbeds, dump trucks, pickups
Restoration	Seeding equipment, hand-seeding equipment, caterpillars, backhoes, flatbeds, pickups

(h) Temporary Work Areas Needed for Construction

Sections of the proposed transmission facilities would be constructed in progressive stages. Temporary work areas would be needed along the transmission line to accommodate material laydown, equipment staging, and storage facilities. The applicant would identify locations for temporary work areas prior to construction, emphasizing use of previously disturbed sites such as existing substations and vacant parking lots. The applicant would conduct surveys at temporary work areas to identify any sensitive environmental resources, and implement mitigation measures as appropriate. Space requirements vary by the size and number of transmission line structures, conductors, shield wires, insulator bells, conductor hardware, spacer dampers, and other materials needed. Specific work areas and space requirements would be identified prior to construction.

Any temporary work areas on the Carson National Forest would be consistent with all applicable Carson Forest Plan standards.

For Project construction and maintenance, existing access roads in their current condition servicing the existing transmission line would generally be adequate to support the Project.

Where access routes are not available to proposed structure locations, a limited number of new, temporary access roads would be proposed.

8. Project Map

Figure 1 illustrates the Project starting from a point near the existing Springer Substation to the Taos Substation.

9. State or Local Government Approvals

☐ Attached ☒ (To be) Applied for ☐ Not Required

State agencies, including the New Mexico Department of Game and Fish (NMDGF), the New Mexico Historic Preservation Division (HPD), New Mexico Environment Department (NMED), and the New Mexico Department of Transportation (NMDOT) may require permits or consultation for construction of the Project. Other agencies also may require permits or consultation for construction. Table 3 summarizes the permits, processes, and approvals that may be required in the state of New Mexico. In addition, Table 3 includes the federal permit required for stormwater management from the U.S. Environmental Protection Agency (EPA), because this program has not been delegated to the state.

Table 3: Permit, Approval, and Coordination Requirements

Agency	Study/Permit/Coordination
New Mexico Public Regulations Commission	Certificate of Public Convenience and Necessity, Location Permit, Determination of ROW width
New Mexico Department of Game and Fish	Consultation to identify special status species
New Mexico Historic Preservation Division	Consultation to identify potential effects on historic properties
New Mexico Department of Transportation	Utility Permit Oversize Permit
U.S. Environmental Protection Agency	Construction Stormwater Permit, Notice of Intent for Construction Discharge
Colfax County	Coordination to ensure Project consistency with Colfax County Comprehensive Plan (2004)
Taos County	Special Use Permit (new regulations pending); coordination to ensure Project consistency with Taos County Comprehensive Plan (2004)

The New Mexico Public Regulations Commission (NMPRC) will be responsible for issuing a Certificate of Public Convenience and Necessity (CPCN), and approving the location of the proposed high-voltage transmission line by issuing a Location Permit (New Mexico Statutes § 62-9-3; New Mexico Statutes § 62-9-1). Furthermore, because a ROW width of more than 100 feet is required, the proponent must also seek a Determination of Right-of-Way Width from the NMPRC (New Mexico Statutes § 62-9-3-2), after the USFS studies determine the desired location.

The NMDGF would be consulted to identify wildlife species protected under the New Mexico Wildlife Conservation Act or other sensitive wildlife and plant species that may be affected by the Project.

Wildlife and botany resource surveys and associated reporting was completed to support the Tri-State PEA analysis (Parametrix 2016a, 2016b, and 2016c). The Project would overlap much of the area analyzed in the Tri-State PEA.

The New Mexico Historic Preservation department is responsible for conducting Section 106 processes under the National Historic Preservation Act and for reviewing state and local government projects under the Prehistoric and Historic Sites Preservation Act of 1989 (New Mexico Statutes §§ 18-8-1–18-8-8). Projects are reviewed to ensure compliance with the applicable historic preservation laws that require that the agency with approval authority for a project consider cultural and historic properties in their decisions.

A utility permit from the NMDOT is required for the installation of utility facilities in a state highway ROW. The permit application must show the location of the existing and/or proposed installation relative to roadways and ROWs, adjacent land use for an application for parallel installation, structural drawings, and other pertinent data. An Oversize Permit would also be required if trucks must operate above legal limits set by NMDOT or local authorities for construction (NMSA 66-7-413). A permit form would be submitted to NMDOT and the proposed truck route would need to be approved.

The Project may require a Construction General Permit under the National Pollution Discharge Elimination System (NPDES) Stormwater Permit Program from the U.S. EPA (see Section 402 of the CWA, 40 C.F.R. § 122.26). The EPA administers the NPDES permit process for the state of New Mexico, with limited assistance from the New Mexico Environment Department's Surface Water Quality Bureau (SWQB).

The Project would be located in Colfax and Taos Counties. Colfax County does not have zoning or land use regulations for unincorporated lands. Therefore, specific permit requirements were not identified for Colfax County other than general compliance with the county comprehensive plan. Taos County has land use regulations (Taos County Ordinance 2015-02). An administrative Special Use Permit would be required for the Project in Taos County, which has been confirmed with county planning staff.

10. Application Fee

☐ Attached ☐ Not required

[WILL BE SUBMITTED UPON NOTIFICATION OF AMOUNT]

11. International Boundaries and Waterways

Does the Project cross an international boundary or waterway?

☐ Yes ☒ No

12. Technical and Financial Capability

Before qualifying for FERC authority, Lucky Corridor, LLC was required to complete significant Project engineering, including the preliminary system design, scheduling, and costs, as described below. The documents cited are available from Lucky Corridor, LLC.

- DiGioia Gray & Associates (DGA), May 30, 2012: Preliminary Transmission Line Design for the 230 kV upgrade Taos to Gladstone.
- DGA Consulting, November 15, 2013: Lucky Corridor 345-kV Transmission Project Budget Estimates (includes assumptions regarding design and construction).
- Extensive load and resource reports confirming the viability of delivering New Mexico renewable energy to western markets have been prepared by both the civil and electrical engineers.
- Lucky Corridor, LLC has worked with cabinet secretaries in New Mexico state government to create a job creation and training program related to construction, operation, and maintenance of the Project with emphasis on employment opportunities for Veterans and for individuals in northern New Mexico, an area that is considered one of the most economically distressed regions of the country. Documentation titled ***"Green Jobs for New Mexico Project Proposal"*** is available.

Lucky Corridor, LLC has a Manager/Chief Executive Officer and a Chief Financial Officer, as well as independent contractors including: Holland & Hart, Bryan Cave LLP, DiGioia Gray and Associates, Utility System Efficiencies, Inc., Ecosphere Environmental Services Inc., Rio Energy Consultants, Rocky Mountain Land Services, Eagle Peak Land Surveyors, Keleher & McLeod, Hackstaff Law Group, Arnold Podgorsky PLLC and more, all paid by the hour.

Lucky Corridor, LLC has 25 voting members, each of whom has provided money to the LLC through a series of private placements under the Securities Act of 1933. Please see detailed documentation in Appendix A.

13a. Reasonable Alternative Routes and Modes Considered

Alternatives to construction of the Project that were considered include the following:

- Removal of the Tri-State 115-kV transmission line and construction of a new transmission line in its place, carrying energy for both companies
- Identification of an alternative route between the Springer Substation and the Taos or Ojo Substation-Angel Fire to Hernandez Substation; Angel Fire-Questa-Espanola, New Mexico Border area through southern Colorado to Ojo Substation; Springer-Sante Fe-Espanola (see Figure 2)
- Regional transmission alternatives such as Sun Zia, Centennial West, and Western Spirit were reviewed and determined to be too far from proposed renewable energy sources to provide economically feasible alternatives
- Construction of double-circuit 230 kV
- No action

13b. Why Alternatives Were Not Selected

Removal and construction of a new transmission line, and increasing the capacity of the existing facilities owned and operated by Tri-State between the Gladstone and Taos Substations was the main alternative considered by the Company. Time and effort has been expended for about 4 years trying to reach a Joint Participation Agreement with Tri-State to create export capacity to Four Corners. Tri-State has initiated its own studies on the non-exclusive permitted ROW through USFS lands crossed by the 115-kV transmission line. Tri-State is not currently willing to enter into a Joint Participation Agreement. If coal plants scheduled into Four Corners begin to close with no substitute supply being ready to replace them, regional consumers have a high risk of substantial cost increases. Incumbent utilities will have legal authority to raise rates if demand for electricity stays the same or increases, when supply of electricity from old coal plants decreases, if there is no replacement supply. Therefore, the Company feels it must move ahead with a request for a parallel route.

Identifying a new parallel or alternative transmission line route is believed to be more burdensome to federal and private landowners than the earlier proposed upgrade and use of the existing non-exclusive ROW. USFS may have the authority to order that all parties work together to move electricity through the existing non-exclusive utility ROW through these 12 miles of USFS lands. Otherwise, through study, we want to work with USFS to find an alternate path around or through these twelve miles. To keep the price of New Mexico electricity at Four Corners as low as possible, any new pathway needs to be as close to 12 miles long as possible. Every additional mile could cost up to $2,000,000 in increased cost.

The Project, as proposed, would, by remaining adjacent to existing transmission, re-purpose as little land as possible to minimize new impacts. The recent Tri-State environmental assessment for access road improvements indicated that it is possible to construct the proposed Project with relatively minor cultural and natural resource impacts within or adjacent to the existing ROW.

Alternative routes were considered as part of the screening activities for the Project. Routes to the north, even into Colorado, and then returning to the Taos or Ojo substation were reviewed and evaluated. These routes were generally much longer than the proposed Project, and therefore would be costlier and have more environmental impacts. An alternative route to the south, through the Carson and Santa Fe National Forests was also mapped and evaluated through field reconnaissance. This alternative route was not considered feasible because it would require significant new construction of both roads and transmission structures on previously undisturbed lands, and would have greater environmental impacts than the proposed Project. Figure 2 shows the general routes that were considered as alternatives to the proposed Project.

The alternative of no action would forego a great opportunity to protect consumers from price hikes for electricity, create a new tax base for New Mexico, keep the Four Corners NYMEX hub open and operating, and foster economic development in northern New Mexico. The Project, as proposed, would maintain USFS land to reduce the possibility of wildfire, install fiber-based monitoring equipment in the non-exclusive corridor, reduce hazards in and around the existing ROWs, and provide significant economic development in northern New Mexico and the greater energy sector.

13c. Why it is Necessary to Cross Federal Lands

The existing transmission facilities between the vicinity of Springer Substation and Taos Substations cross USFS lands. The mileage crossed by each category of land ownership is provided in Table 4.

Table 4: Proposed Project Miles by Land Ownership

Ownership	Miles
U.S. Forest Service	12
Private	50
Total	**62**

The route identified for the proposed Project is adjacent to an existing, 100-foot wide, non-exclusive utility ROW on federal land, the use of which would limit environmental impacts. Routes circumventing USFS lands would not offer the same public benefits since there is so much federal land in the Taos area that trying to avoid federal lands altogether would increase the mileage between the clean energy resource area and the Four Corners hub; therefore, increasing delivered cost of electricity from northern New Mexico, and perhaps losing the competitive advantage which northern New Mexico today enjoys.

This Second Amended SF-299 drops the request to build a new parallel line between the existing Taos and Ojo Substations in New Mexico. Tri-State owns a 345-kV line between those two substations. Reportedly, that line does have capacity to move New Mexico's renewable energy west—if the sway and swag were reduced through maintenance or network upgrades, more energy could move. Tri-State has recently joined WestConnect and the new Mountains West Transmission Group, indicating that Tri-State is willing to cooperate with other utilities to reduce "pancake" rates, thereby helping New Mexico renewable energy to be sold at Four Corners at a competitive delivered cost. Lucky Facilities are still needed to carry energy west to the Taos Substation, through the region where only an old, weak, full 115-kV line, the Tri-State Line, exists today.

Four Corners is historically the nation's largest coal hub, yet some of its generation plants now fail to meet new air quality standards and are thus becoming obsolete. Increasingly, the old coal plants are being required to close to help the region meet air quality standards. The opportunity to evolve the nation's biggest coal hub into perhaps the first major clean energy hub in America is among the most outstanding challenges in the U.S. energy market today. It took more than 50 years for this country to build the transmission lines taking Four Corners' coal-fired generation to load centers throughout the western grid, which includes western Mexico and western Canada, historically supplied with electricity from New Mexico. By building modern infrastructure a total of about 62 miles (12 miles on federal lands) to the east via the Project, New Mexico can efficiently re-supply the Four Corners, and help protect regional consumers from price increases when the coal plants close and electricity supply from coal decreases.

The public benefits of modern electricity infrastructure align with federal and state policy objectives for renewable and clean energy.

Proposed Lucky Facilities address economic development challenges faced by New Mexico, sustain New Mexico tax base related to the Four Corners hub, and importantly, help to reduce the tremendous fire risk in the Carson National Forest by possibly removing obsolete infrastructure and replacing it with modern facilities, including fiber-based telemetry for monitoring electrical infrastructure and conditions near it.

14. Authorizations and Pending Applications for Similar Projects

The existing Tri-State Line, the 115-kV east of Taos, has been operating under a federal lease granted by the USFS. The USFS lease agreement for the 115-kV transmission line is in the process of being transferred from the original transmission line owner, Plains Electric, to Tri-State through a Special Use Permit application that Tri-State filed with USFS in May 2008. The USFS approved the permit application, but issuance of a permit and lease agreement to Tri-State is pending NEPA review of facility operations, vegetation, and access management for the transmission line (USFS 2016).

Tri-State filed a second SF-299 application in 2011 requesting access routes. This SF-299 application is currently being evaluated through the ***Preliminary Environmental Assessment Tri-State Taos to Black Lake Transmission Line Access Project prepared by the Camino Real Ranger District, Carson National Forest and issued in April 2016***. This SF-299 application requests a Special Use Permit amendment to include formally designated access not otherwise captured in the current Special Use Permit issued to Tri-State in 2008. Access is needed to conduct routine inspections, manage vegetation including removing hazard trees, and perform maintenance and repairs. According to the Preliminary Environmental Assessment, the age of the infrastructure indicates that it is likely Tri-State will need to replace crossarm, poles, and in some cases entire structures that support the line. These types of repairs require the use of larger pieces of equipment. Designating routes would allow more efficient response times and reduce potential impacts to sensitive resources (PEA 2016).

By combining Tri-State requests with those of Lucky Corridor, LLC, the USFS could order efficient, sophisticated Facilities through its sensitive lands. Tri-State can move its coal-fired electricity east, and Lucky can move its renewable energy west on combined new facilities, or on parallel facilities, as the USFS determines, by studies based on its recent PEA, is in the best interests of the public.

15. Statement of Need for the Project, including Economic Feasibility

The purpose for the Project is twofold:

The Project would increase the reliability and capacity of the existing transmission system by constructing a new 345-kV single-circuit transmission line between points near the existing Springer and Taos substations. The new transmission system would allow transport of renewable energy resources from the Springer and Taos substation areas, and would also allow development of potential new renewable energy resources along the proposed transmission line route.

There is currently existing capacity in the transmission line network west from the Taos substation to the NYMEX hub, Four Corners; therefore, the only remaining section that needs improvement is from Springer to Taos substations.

By improving this section of transmission line, the entire route would be available for transmission of renewable energy. These renewable energy generation sources in New Mexico are needed to re-supply New Mexico's NYMEX hub—Four Corners—as coal generation facilities are phased out.

The Project would both protect against cost increases from reduced electricity supply as well as add significant revenue to the local and state tax base from renewable energy generation. By making New Mexico's grid more reliable and robust, new energy generation projects, primarily from wind and solar energy can be built in New Mexico. By becoming one of the areas within the U.S. with a modern, reliable, high-capacity clean energy supply, New Mexico would have an advantage when trying to incent companies to invest in the state and create new jobs.

Generation developers are currently constrained by the lack of available transmission capacity to serve their project needs and public needs. The Project is positioned to recoup the cost of construction and operation of the Project through generators paying for the cost of transmission service. In addition, historic support from New Mexico RETA and the Department of Energy supports Lucky Corridor, LLC's conviction that the Project is in the public interest.

(a) Cost of Proposal

If the 62-mile long Project configuration is approved by the USFS, projected costs will be reduced to approximately $154 million in construction debt and equity financing.

(b) Cost of Next Best Alternative

The next best alternative would be a variation of the proposed Project as described in previous filings, at an estimated cost of $260 million, and alternatives described under Item 13a with commensurately additional significant costs for pre-construction activities and construction, and therefore a higher delivered cost for New Mexico's clean electricity at the Four Corners hub.

(c) Expected Public Benefits

In addition to increasing the capacity of the existing transmission system, anticipated public benefits include economic benefits. It is anticipated that the Project would create an overall economic boost to the area of influence, due in part to short-term employment and opportunities for longer-term job growth from development associated with an upgraded transmission system. In fact, the Report of Economic Impact of the Lucky Corridor Project on Communities in Northern New Mexico (IDS 2016) estimates that the Project would generate up to 3,000 direct, indirect, and induced jobs. The overall benefit to the area would include the reduction of unemployment levels, and an associated increase in per capita income. This benefit would positively affect the economy of New Mexico and counties surrounding the Project as new jobs are created, both directly from construction and operation of the Project and indirectly from development of future renewable energy and natural gas projects and their ancillary service needs (IDS 2016). Development of such future projects is currently constrained by the lack of electricity transmission capacity in the area. The Project would also generate steady revenues to state, county, and local governments in the form of property and other tax payments (IDS 2016).

The Project also compliments Kit Carson Electric Cooperative's (KCEC's) work to become independent, and help regional economic development on the strength of the region's clean energy resources. Recently, KCEC reached a $37 million settlement to end its contract with the Tri-State Generation and Transmission Association (Tri-State) and begin sourcing its power from Guzman Renewable Energy Partners. The Tri-State contract capped KCEC's renewables usage at 5 percent, which clashed with a community-wide demand for more renewable energy sources. The Guzman contract provides more flexibility to add solar or other renewable energy sources to the KCEC system based on local demand and allows locally generated solar energy to be exported in all directions. The Lucky Corridor Project provides transmission capacity to export this locally generated solar energy.

16. Probable Effects on the Population in the Area, Including the Social and Economic Aspects, and the Rural Lifestyles

The area of influence for potential economic benefits in the Project area includes Colfax, Union and Taos counties and larger population and service areas in close proximity to these counties. The largest communities in the immediate Project area are Raton, Springer, and Taos, New Mexico.

The primary influences on the local economy in the Project area are agriculture (e.g., ranching, small produce farming, and miscellaneous forest products) recreation, and tourism (e.g., service sector). Given the Project area's emphasis on these sectors and the lack of large population centers, it is likely the Project would draw workers, goods, and services from a broader area.

In 2015, 21.3 percent of the total population of New Mexico lived below the poverty level, with 29.1 percent of persons under the age of 18 living below the poverty level. Both figures are significantly higher than the national average of 14.8 percent reported for 2014 (see Table 5) (UNMBBER 2016)].

Generally, less than half of the labor force for Colfax and Taos counties performs non-farm employment, which is indicative of the substantial agricultural economy in the area. Unemployment levels for 2016 in Colfax County were below the state level, though slightly higher than the national level. Unemployment levels in Taos County were higher than both state and national levels. As shown in the economic studies paid for by both Lucky Corridor, LLC and by the state of New Mexico, the Project area has an out-migration problem that has resulted in a vacancy rate of up to 35 percent of the homes in some locations near the Project area, which artificially reduces the unemployment rate but demonstrates a greater economic problem (UNMBBER 2016).

Table 5: Socioeconomic characteristics of counties within Project area

Location	Estimated Population July 1, 2016	Per Capita Income 2014	Persons Below Poverty Level (% 2015)	Non-Farm Employment 2013	Estimated Labor Force 2015	Estimated Employment 2015	Estimated Unemployment June 2015	Unemployment May 2016
United States	321,418,820	$28,555	14.8%	—	—	—	—	4.7%
New Mexico	2,085,109	$23,948	21.3%	606,002	—	—	—	6.0%
Colfax County	12,414	$20,975	20.5%	3,228	5,965	5,599	366	5.7%
Taos County	32,907	$22,107	19.2%	8,521	14,743	13,378	1,365	8.5%

Sources: United States Census Bureau – http://www.census.gov/quickfacts/table/PST045215/35007,35055,35,00
U.S. Bureau of Labor Statistics - http://data.bls.gov/map/MapToolServlet, http://www.bls.gov/cps/, http://www.bls.gov/regions/southwest/new_mexico.htm#eag. http://www.bls.gov/lau/#cntyaa, http://www.bls.gov/news.release/pdf/empsit.pdf, http://www.unemployment-extension.org/unemployment-rate-nm.php ,

Note: $ = dollar sign; % = percent

The Project could take advantage of numerous incentive opportunities including the Job Training Incentive Program and numerous tax credits for employment. The applicant has initiated discussions with state agencies and local educational institutions, including Luna Community College, and New Mexico Highlands University, which have focused on avenues for local job creation. The applicant and the construction contractor are proposing training programs for specific positions that would be available during Project construction, as well as proposing the creation of and training for green jobs that are anticipated for secondary renewable power projects.

Indirect benefits to the local economy would occur from jobs created as a result of construction worker spending from adding a temporary workforce and its associated needs for housing (e.g., hotels, motels, campgrounds, recreational vehicle sites) and other basic living necessities (e.g., healthcare/medical, food/groceries, restaurants, supplies and services, entertainment) and supplies necessary for construction of the transmission line from local vendors.

Long-term job creation likely would result from the modernization of electrical and telecommunications infrastructure, and the increased supply of renewable energy, both of which attract high tech companies to a region. Environmental Effects to Air, Visual, Water, Noise, and Land Resources.

(a) Air Quality

Air emissions during Project construction would be generated both directly from tailpipe emissions and indirectly from fugitive dust. Tailpipe emissions would come from construction equipment and vehicles, such as haul trucks, boom trucks, drill rigs, earth-moving equipment, flatbeds, water trucks for dust suppression, and pickup trucks. Fugitive dust would come from soil disturbances from clearing and grading activities and from construction traffic on unpaved access roads.

The amount of fugitive dust generated depends on the silt and moisture content of the soil, frequency of rainfall, wind speed, vegetation removal, traffic volumes and speeds, and the application of BMPs during construction. Because these are large particles, fugitive dust would tend to settle quickly in the atmosphere and effects would generally be localized. To minimize air quality impacts, construction in sandy and highly erodible soils would be minimized to the extent possible. The use of water trucks on continuous operation, speed limits, and vehicle emission controls would also be used to minimize air emissions. The Project would comply with state and any local requirements for controlling air emissions during construction. Air emissions during operation and maintenance of the Project would be minimal and associated only with maintenance activities, as needed.

(b) Visual Impact

Because the Project would be located adjacent to, and perhaps even partially within, an existing transmission corridor, visual impacts would be limited to alteration of visual elements of the existing landscape by installing taller monopole and lattice transmission structures for the new transmission line. The span length between transmission structures would be greater for the new transmission line than for the current 115-kV transmission line. According to preliminary engineering analysis, structures would range from 125 to 140 feet in height. The transmission structures would be made with dulled weathering steel to help the structures blend with the surrounding landscape, which seals itself by oxidizing and creating a rusty exterior color that blends well in wooded areas and other selected environments.

Individual structures associated with the new transmission line would be more or less noticeable than the current transmission structures, depending on the locations of the transmission structures and the observers, the background landscape, the character of visual elements in the landscape (e.g., additional vertical elements such as communications towers), and the discretion of the individual viewer. The Project could be visible from sensitive viewsheds that include:

- Areas within the Carson National Forest
- Recreation areas and trails
- Locally important viewsheds and scenic byways
- Cultural and historic places
- Residences and businesses

These sensitive viewsheds would be further analyzed using federal visual management policies, standards, and tools such as visual resource management classifications. If there were potential for significant impacts to visual resources, mitigation such as strategic structure placement and varying structure materials or colors would be evaluated.

(c) Surface and Ground Water Quality and Quantity

Surface water resources in the Project area include lakes, stock ponds, irrigation ditches, arroyos, perennial streams, creeks, and possible wetlands. It is anticipated that the Project would cross the following waterbodies: Canadian River and tributaries, Coyote Creek, and Rio Fernando de Taos.

Lakes in the Project area serve multiple purposes including flood control, irrigation storage, recreation, and sediment control. Rivers and streams provide water supplies for agriculture and recreation. All surface waters provide habitat for wildlife. There are also extensive ephemeral water resources in the area, including arroyos (dry washes) that are connected to surface waters, and playas (dry lakes) that are not directly connected to surface waters. The Project either would avoid water resources through careful placement of transmission structures or would span water resources.

Potential effects to surface water from construction activities, such as vegetation clearing, grading, and building or traveling on access roads, could disturb soil that, without proper management, could travel off the construction site. In these instances, surface waterbodies could experience effects from erosion and sedimentation during stormwater runoff events. Implementation of BMPs during construction, and compliance with a stormwater construction permit, would avoid or mitigate the effects of erosion and sedimentation. Because the proposed action would impact more than 1 acre of soil, a Stormwater Pollution Prevention Plan (SWPPP) would be required for the Project under the NPDES Storm Water Permit Program administered by the EPA. The contractor would adhere to the SWPPP and its stipulations, including water and erosion control measures and post-construction controls to ensure surface water resources are protected.

Temporary construction impacts to water resources features (floodplains, lakes, streams, wetlands, other drainages) would be restored to pre-construction condition, and revegetated with native species. In areas where construction may occur near surface waters and wetlands, buffers would be created to protect these resources from sedimentation and erosion impacts. Heavy equipment used near wetlands or other water resource features would be placed on top of mat boards during work periods, or other similar materials, as necessary, to limit rutting and compaction in these areas. Implementation of BMPs would include limiting the removal of soil-stabilizing vegetation to only the area necessary for construction, scarifying and revegetating disturbed soils, construction setbacks from waterbodies, and use and maintenance of silt fences and other storm water control measures.

Effects to groundwater would not be anticipated from the Project because **groundwater is unlikely to be encountered in the arid Project area**. Subsurface disturbance potentially affecting groundwater would consist only of drilling and auguring to the extent necessary for installation of transmission structure supports and foundations.

During construction, water would be necessary for dust suppression and to dissipate heat from drills used to bore holes for transmission structure supports. Where groundwater was limited or unavailable for these functions, the use of surface water would be coordinated with the local jurisdiction responsible for requested short-term and limited use of local water rights.

If such local water is not available, water from public or private supplies would be trucked into the construction area. In those instances, where water tanks would need to be filled for dust suppression, the amount of water used would be minimal when compared to existing residential, municipal, and agricultural water uses in the area. There would be no anticipated measurable drawdown effects to wells or aquifers from such short-term construction activities.

(d) Control or Structural Change on Any Stream or Other Body of Water

The Project either would be routed around water resources through the careful placement of transmission structures or would span waterbodies, as necessary. Permanent structural changes to streams or other waterbodies would not take place as a result of the Project. Existing access roads and bridges would be used for construction and maintenance of the transmission line to the extent possible to avoid or minimize the need to build new roads. Rather than crossing waterbodies, construction crews generally would approach construction sites from opposing sides of the waterbody using existing access roads or minimal overland travel. In limited circumstances, streams or intermittent drainages could be crossed during construction if a crossing could be accomplished in compliance with U.S. Army Corps of Engineers (USACE) requirements.

(e) Existing Noise Levels

Construction activities would temporarily increase noise levels from their existing background levels in the Project area. Construction noise is dependent on the specific construction activities occurring at a particular time and would vary over time at given locations. The majority of the existing transmission line is located in sparsely populated areas, and the number of receptors who might hear construction noise is currently low. Under peak conditions with the noisiest construction equipment operating simultaneously, the highest average expected noise level is estimated to be approximately equivalent to noise experienced on a sidewalk alongside a busy urban street. At distances over 0.25 mile, peak construction noise would be approximately equivalent to normal conversation at 6 feet. Temporary construction activities in more populated areas or near residences or businesses might require noise mitigation measures such as equipment mufflers and limited construction schedules (e.g., 7:00 a.m. to 7:00 p.m.). All applicable noise regulations of local jurisdictions would be identified and complied with.

Operating transmission lines also create audible noise depending on the size of the transmission line, the transmission line configuration (i.e., horizontal, vertical, delta), and the geometry of the conductors on the transmission line. Audible noise varies depending on wet or dry weather conditions. Audible noise from the Project would be calculated as part of a NEPA analysis.

(f) Surface of the Land, Including Vegetation, Permafrost, Soil, and Soil Stability

East of Taos, the Project would traverse rugged terrain in the canyon between Taos and Angel Fire, New Mexico. The Project then would cross gentler mesas and hills to the area around the Springer Substation. The majority of the Project area has a semi-arid continental climate.

Land Use

The Project would cross the Camino Real Ranger District in the Carson National Forest. It would parallel U.S. Highway 64 and the adjacent stream, Rio Fernando de Taos, in the Camino Real Ranger District. The Rio Fernando de Taos runs through Taos Canyon, a narrow canyon characterized by steep hillsides with some slopes exceeding a 40 percent grade. Vegetation types in the canyon include piñon-juniper, spruce, and mixed conifer woodlands. Riparian vegetation occurs along the stream banks of Rio Fernando de Taos and its drainages. The section of the proposed transmission line through the Town of Taos to Taos Substation includes residential, commercial, institutional, and industrial land uses.

Permafrost

The presence of permafrost is not applicable in the Project area.

Soil and Soil Stability

Geologic constraints in the Project area include areas that are geologically unstable because of the area's potential for seismic activity. Highly eroded areas indicate the potential for rock falls, rock slides, and debris flows that could affect the stability of transmission line support structures. Individual soil types in the Project area would be analyzed in detail to identify specific geotechnical concerns relating to soil stability, erosion potential, and other characteristics of concern. Foundations and any needed access roads for the transmission structures would be located and constructed to avoid or minimize potential effects from unstable soil conditions, or other identified geotechnical issues such as unstable slopes. The presence of the existing transmission line structures indicates that the potential for slope failure or other geotechnical failures are not indicated.

17. Environmental Effects to Marine and Wildlife Resources

(a) Populations of Plant Life, Wildlife, and Marine Life, including Threatened and Endangered Species

Wildlife resources in the Project area include species typical of the vegetation communities described above. Major wildlife species likely to occur include big game (e.g., elk, pronghorn antelope, mule deer, white-tailed deer, and black bear), carnivores (e.g., coyote, fox, raccoon, mountain lions, and bobcats), small mammals, upland game birds, waterfowl, raptors, songbirds, and reptiles and amphibians. Waterfowl within the Project area are part of the Central Flyway populations. As part of the Preliminary Environmental Assessment: Tri-State Taos to Black Lake Transmission Line Access Project (Camino Real Ranger District, Carson National Forest. April 2016.), biological investigations were conducted (Parametrix 2016a, 2016b, and 2016c) to provide a comprehensive inventory of vegetation, wildlife, and other natural resources in the project area. **These studies generally indicate that impacts to sensitive biological resources can be avoided under the Tri-State access project and suggest the same conclusions for the Lucky Project.** The studies will be utilized as the basis for further evaluations with additions as need for the Lucky Project.

Special status species in the Project area include those listed as endangered, threatened, candidate, or proposed for listing by the U.S. Fish and Wildlife Service (USFWS) or by the NMDGF. The NMDGF lists wildlife species as threatened or endangered under the New Mexico Wildlife Conservation Act. Formal coordination with the USFWS, NMDGF, and USFS would be completed to identify a final list of protected species that may be affected by the Project.

Potential impacts could occur because of construction activities, or long-term operation. Potential impacts to wildlife during construction include loss of individuals, loss of habitat, reduction in habitat quality (including habitat fragmentation), and interference with breeding, feeding, or other critical behaviors. Loss of important habitat, such as critical habitat for threatened or endangered species, or big game (e.g., deer, elk, and pronghorn) habitats, would also constitute an impact to wildlife species. Disturbance of wildlife due to noise and activity would be temporary and limited to the construction timeframe.

Impacts to wildlife from transmission line operation are expected to be similar to impacts from the current transmission line. An avian impact assessment would be needed to identify differences in impacts from the taller structures and conductors that would be spaced differently from the current arrangement. Impacts to fish and aquatic species are not anticipated because waterways and wetlands would be spanned. The applicant would also use National Electric Safety Code and Avian Power Line Interaction Committee guidance to minimize or eliminate avian electrocutions.

If required by the USFWS or NMDGF, the applicant would conduct pre-construction surveys for special status species, or species susceptible to effects from transmission lines such as raptors, to determine their occurrence in the Project area. Threatened or endangered species and critical habitat would be identified such that appropriate avoidance strategies could be developed. Construction would be timed to avoid critical time periods such as breeding, nesting, or migration.

(b) Fish and Marine Mammals, including Hunting, Capturing, Collecting, or Killing These Animals

The transmission line would be designed to span waterbodies. Construction activities would approach waterbodies from opposing sides of the waterbody. Access roads crossing waterbodies are not anticipated. Impacts to marine mammals, therefore, are not anticipated.

18. Hazardous Materials

Construction of the Project would produce solid waste mostly in the form of materials packaging and scrap material and the removal of existing transmission structures. Solid waste generated during construction activities would be hauled off-site and disposed of at appropriate permitted waste collection facilities. Small volumes of hazardous materials would be present to support construction equipment and vehicles (e.g., ethylene glycol, oil, transmission/hydraulic fluids) and used for emergency maintenance. All hazardous materials would be stored, handled, and disposed of in accordance with applicable local, state, and federal hazardous material statues and regulations. A Spill Prevention Control and Countermeasures Plan would be developed to minimize the potential for small spills or leaks. The Plan would institute on-site controls of possible contaminants and would require on-site availability of absorbents and other spill cleanup materials.

Because the quantities of materials used would be relatively small, potential spills also would be small and more easily contained than on a larger construction site. The potential for a spill to reach surface water or to migrate below the surface of the land to groundwater would be minimal. The contractor would have the standard requirement to implement onsite controls of possible contaminants and to have available absorbents and other spill cleanup materials.

19. Agencies Where This Application is Being Filed

U.S. Forest Service
Carson National Forest
208 Cruz Alta Road
Taos, New Mexico 87571

References:

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Certification

I HEREBY CERTIFY, that I am of legal age and authorized to do business in the State and that I have personally examined the information contained in the application and believe that the information submitted is correct to the best of my knowledge.

Signature of Applicant Lucky Corridor, LLC By:	Date
	August 19, 2016

Manager/Chief Executive Officer

Exhibits

Exhibit A: Z Global Report Update 2015

Exhibit B: BBER Economic Conditions Study 2016

Exhibit C: Impact Data Source Economic Impact Report 2016

Appendix A – Corporation Information

Appendix A: Corporation Information

1. Articles of Organization
2. Operating Agreement (Signature Pages Upon Request)
3. A certification from the state of Colorado showing the limited liability company is in good standing and a certification from the state of New Mexico showing that the company is entitled to operate within New Mexico
4. Copy of resolution authorizing filing
5. Name and address of each equity owner holding 3 percent or more of the company shares

The Lucky Corridor Project

A Report on Load in the Los Angeles Basin and the Transmission Capability, Availability and the Feasibility of moving Energy from New Mexico into Southern California

Updated
June 4, 2015

Prepared by:

ZGLOBAL
Power Engineering & Energy Solutions

604 Sutter Street, Suite 250
Folsom, CA 95630

Contents

Overview

The Lucky Corridor is a 130 mile transmission project that hopes to deliver wind and solar resources from New Mexico into the 345 kV Ojo Substation owned by Public Service of New Mexico ("PNM"), for energy delivery to CAISO members and others at Four Corners. The project intends on delivering an estimated 600-800MW of renewable and gas generation into California. The project is made up of the following two segments:

- **Segment A** (Lucky Corridor) consists of new line, proposed at 500 kV, in 70 miles of new, private Right of Way that will begin at the Gladstone Substation owned by Tri-State Generation and Transmission Association, Inc. ("Tri-State") near Farley, New Mexico, and terminates near Tri-State's Black Lake Substation.
- **Segment B** consists of 60 miles of new line within Tri-State's existing right-of-way between its Black Lake Substation, and terminating at PNM's Ojo Substation.

The objective of this report is to provide broad information on demand at Four Corners, existing transmission, and the renewable standards in the southwest and in California that will add benefit to the Lucky Corridor transmission project. The objectives are to:

- Review the changes in regulatory environment including the renewables standards,
- Identify what resources are currently utilizing the transmission system,
- Evaluate how the shift away from coal impacts the use of the transmission system, and
- Outline the current and future transmission system and the demand it serves.

The report takes a pragmatic approach by outlining transmission capacity into California supplying load currently served by coal generation, and assumes that this capacity will be displaced by clean renewable resources. The report also describes the current state of the renewable standards and climate change legislation that is anticipated to force the shutdown of a large fleet of coal generation in the southwest. This unused transmission capacity will then be available for use by renewable and gas resources from the Lucky Corridor transmission project to deliver power to load centers of Arizona and southern California. The report demonstrates how the new proposed transmission projects in the area will address the required future infrastructure development and how these projects will impact the Lucky Corridor.

The goal of this report is to provide a high level assessment of the transmission capability, the loads served, and the transmission ownership from the Four Corners and New Mexico area into California. In addition, the various transmission routes where an entity could acquire transmission to move energy from Four Corners, New Mexico, into Southern California is discussed.

Executive Summary

This report illustrates that the current and future transmission system will be able to deliver the estimated 600-800 MW of renewable generation from the Lucky Corridor transmission project to California load centers. There are several factors that lead to this conclusion:

- California Governors recent executive order issued on April 29, 2015[1] to establish a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 - the most aggressive benchmark enacted by any government in North America. This Executive order could increase California Renewable goals from the 33% to 50 % by 2030.

Policy and regulatory changes that will expand the need for renewable resources and imports into the states in the west,

- Future transmission capacity that will be available as the generators using coal are shut down,
- Access to renewable generation,
- Transmission rights that California entities hold in the Four Corners area, and
- The lack of competing projects in the Four Corners area.

There are also significant Renewable Portfolio Standards (RPS) being set in Oregon, California, Nevada, Utah, Arizona, Colorado, and New Mexico that further support the need for the Lucky Corridor's estimated 600-800 MW of renewable generation. These requirements do not only impact California, but are impacting almost every state in the West. By 2020 each of the following states must reach the percentage of retail sales coming from renewable resources:

- 20% Oregon,
- 33% California
- 22% Nevada,
- Utah must provide a progress report on where they are in meeting the target of 20% by 2025,
- 10% Arizona,
- 30% Colorado, and
- 20% New Mexico

The increase in renewable requirements has made it is necessary to build renewable generation and to ensure this capacity has access to the market. Wind generator owners have commented that transmission infrastructure that moves their energy to the areas that need it is lagging. Load Serving Entities (LSE) need the renewable electricity to meet the RPS goals and the generator owners need the transmission to deliver this energy.

There has been tremendous pressure put on LSEs in California to eliminate coal from their portfolio. The regulators have stopped supporting any expansion of coal at existing plants. AB 32 will eliminate the use of coal generation in California due to the limitations it has placed on Green House Gasses. Furthermore, the public has been vocal, to the point of protesting in front of coal power plants, that they do not want their electricity from coal. California currently imports approximately 2,800 MW of coal generation from the

[1] http://gov.ca.gov/news.php?id=18938

southwest corridor, the plants include: Four Corners, Intermountain Power Plant, Navajo, and San Juan. The table below shows the coal generators that deliver electricity to California.

Generator	Plant Capacity (MW)	California Share of Capacity (MW)
Four Corners	2,040	740
Intermountain Power Plant	1,800	1,350
Navajo	2,250	477
San Juan	1,800	281
TOTAL	7,890	2,848

Table 1: Coal Generation into California

This means that eventually 2,800 MW of scheduling capacity will become available for renewable resources to import into California. The Lucky Corridor transmission project represents less than 10% of the potential available transmission capacity into California.

The Lucky Corridor's intent is to deliver renewable energy to the Four Corners area. It is a common misconception that due to Four Corners being within New Mexico that delivering to Four Corners is not delivering to the state of California. Although Four Corners is not within California there are several entities within California that hold scheduling rights from this location to their load centers. Other locations within close proximity to Four Corners that have scheduling rights into California include:

- Moenkopi,
- El Dorado,
- Mead,
- McCullough,
- Victorville, and
- Palo Verde.

The decision for Lucky Corridor to choose the Four Corners appears to be a good one. There is the need for the renewable generation and New Mexico has access to desirable sources of renewable fuel sources. There is good geothermal potential in the southern New Mexico area, along with the very strong Solar potential based on the irradiation values, and wind potential in the North Eastern part of the state is also very desirable. Filling up the capacity should not be difficult.

In addition, the transmission line is uniquely positioned East and West with no other competing projects. Many of the other proposed transmission projects have competition for the right of ways as they are using the same routes. Examples of competing projects:

- North to South
    - One Nevada, and
    - Northern Lights
- Wyoming to Las Vegas, Nevada,
    - Gateway projects,
    - Tranwest Express, and

- Zephyr
- East to West between New Mexico to Arizona
  - SunZia,
  - Western Spirit, and
  - The Southline

Introduction

There are several drivers that impact the availability of transmission capacity on the system. Load and available resources in an area impact the need for generation to be brought in through a transmission line; in addition, the loading on the line as it goes from point A to point B impact the available transmission capacity. Although this report will not attempt to forecast transmission availability, it is important to understand that transmission availability is mostly dynamic and closely correlated to the following elements:

- Renewable portfolio compliance from resources within the various Western States,
- Regulatory framework,
- Supply and demand, and
- Transmission services, availability, and proposed upgrades,

The entire United States is focused on changing the landscape of the energy infrastructure and marketplace. Renewable development is being forced by the regulators. Coal is being forced out by renegotiated contracts, and from regulators not approving any permits for expansion. The increase in gas fired plants is projected to continue in order to help maintain stability in the new electric grid. California's and the western states modest growth in electric load, continue to increase demand for electricity. Although several new and major transmission lines are being proposed to access these new resources, transmission capacity will continue to lag behind the generation developments and this key factor will play a major role in the ability to move generation from remote areas to load centers.

The western grid is managed as a large integrated entity. For instance, on an average Hydro year, California imports more than 20% of its energy from the Western States. California is highly dependent upon imports and much of the energy imported from the Pacific Northwest is hydro-based. California also imports large amounts of energy from the Southwest. On an annual basis California imports almost twice as much electricity from the Southwest as the Northwest. For 2013 total imports from the Northwest were 35,000 GWH and the Southwest was 62,000 GWH.

The net amount of energy imports into California could be as high as 10,000 MW at the peak demand during the summer.

Regulatory Framework:

America now generates more kilowatt-hours of renewable energy than any other country in the world. In addition to creating jobs and bettering the environment, zero-fuel cost renewable generation provides a critical hedge against future increases in fossil fuel prices.

While federal incentives such as the Production and Investment Tax Credits have bolstered the supply of renewable energy, support for renewable energy demand has come chiefly from states in the form of Renewable Portfolio Standard (RPS) mandates for utilities to procure minimum amounts of electricity from renewable sources. Currently in place in 29 states (and Washington DC), RPS mandates have driven creation of 1/3 of current US non-hydro renewable electricity. As the federal incentives are reduced the RPS mandates are the chief medium-term driver of new investment in renewable energy.

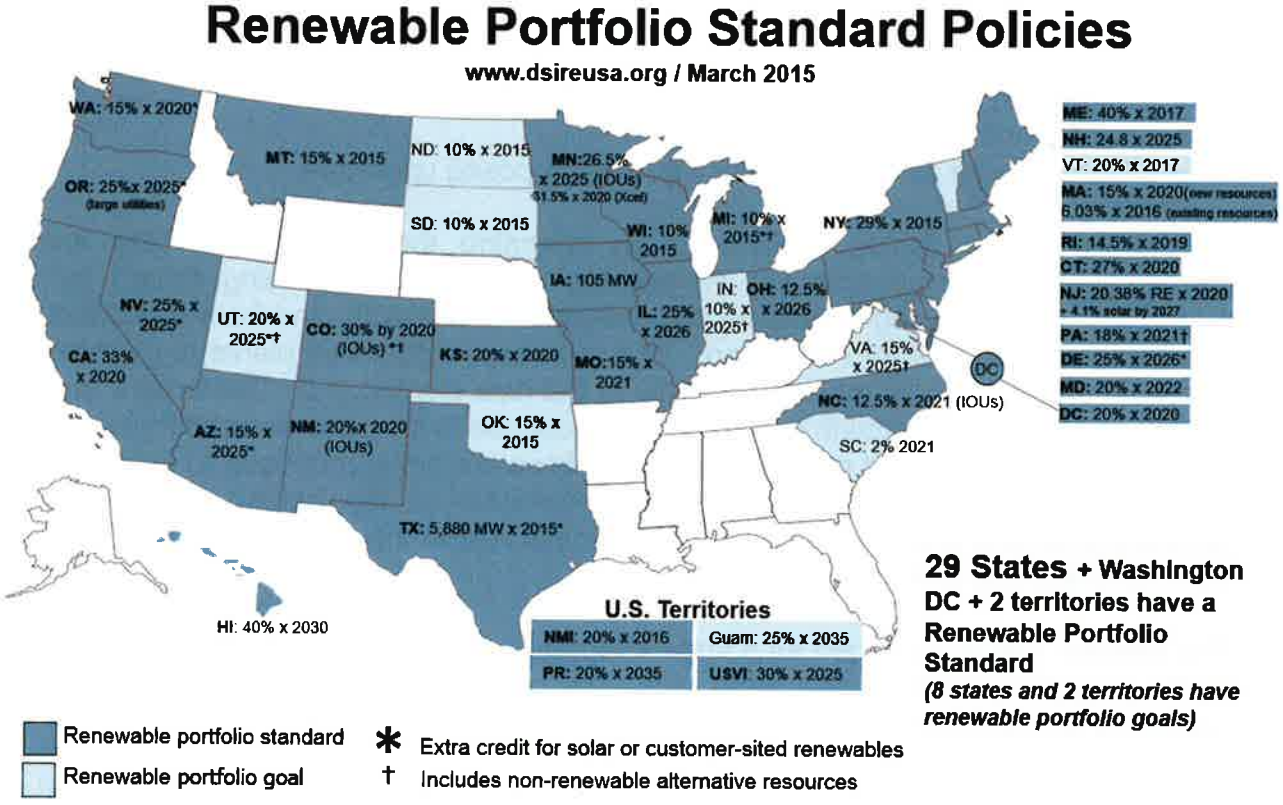


Figure 1: Renewable Portfolio Standards Policies by State

The 2020 RPS targets will require 98 GW of Renewable Energy capacity and 123 GW by 2035. Meeting these targets will require incremental build of 3-7 GW/yr through 2020 and 1-2 GW/yr thereafter. In comparison, RPS-driven additions averaged 6 GW/yr since 2008 (10 GW/yr. for all RE).

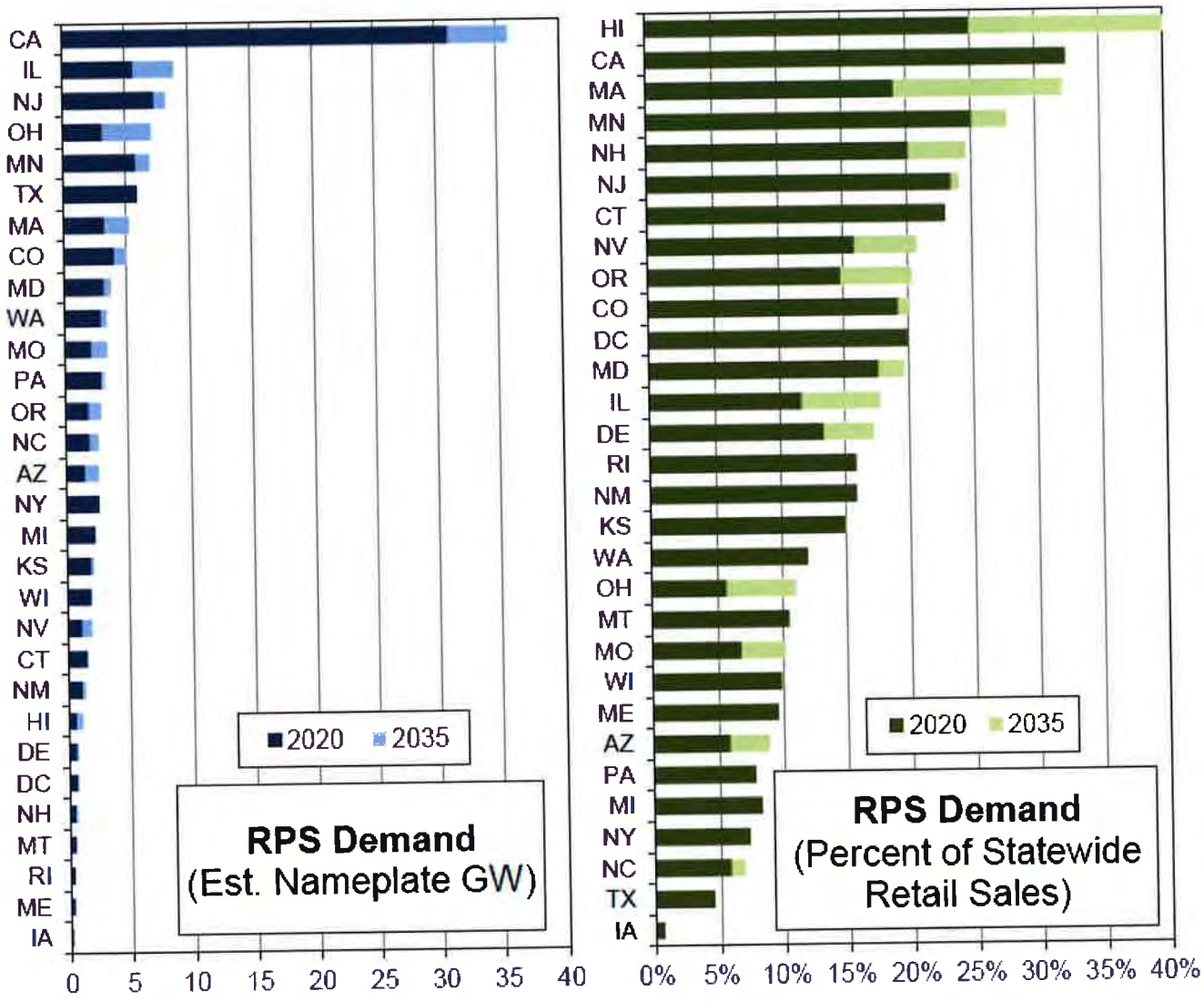


Figure 2: RPS Demand by State

The schedule for RPS rollout in the major western states is provided below in Table 2:

Year	OR	CA	NV	UT	AZ	CO	NM	TX
2005			6%					
2006			6%		1%		5%	
2007			9%		2%	3%/ na	6%	2,280
2008			9%		2%	5%/ 1%	6%	
2009			12%		2%	5%/ 1%	6%	3,272
2010			12%	PR	3%	5%/ 1%	6%	
2011	5%	20%	15%		3%	12%/ 3%	10%	4,264
2012		20%	15%		4%	12%/ 3%	10%	
2013		20%	18%		4%	12%/ 3%	10%	5,256
2014		22%	18%		5%	12%/ 3%	10%	
2015	15%	23%	20%	PR	5%	20%/ 6%	15%	5,880
2016		25%	20%		6%	20%/ 6%	15%	
2017		27%	20%		7%	20%/ 6%	15%	
2018		29%	20%		8%	20%/ 6%	15%	
2019		31%	20%		9%	20%/ 6%	15%	
2020	20%	33%	22%	PR	10%	30%/ 10%	20%	
2021			22%		11%			
2022			22%		12%			
2023			22%		13%			
2024			22%	PR	14%			
2025	25%		25%	20%	15%			10,000

Table 2: Renewable Targets for Western States

Notes:
OR: Large utilities represents those with 3% or more of the state's load, Utilities with less than 1. 5% of state load must meet a 5% RPS by 2025
CA % of Retail Sales
NV: Renewables and Efficiency Programs
UT: utilities must file Progress Reports (PR) on Jan 1 of 2010, 2015, 2020 and 2024
AZ: also has a Distributed Renewable resources requirement
CO: IOU%/ Muni%
NM: No less than X% of annual retail jurisdictional energy sales
TX: Targets are MW values not a percentage

Oregon Renewable Portfolio Standard (RPS)

As part of the Oregon Renewable Energy Act of 2007 the state of Oregon established a renewable portfolio standard (RPS) for electric utilities and retail electricity suppliers. Different RPS targets apply depending on a utility's size. Electricity service suppliers must meet the requirements applicable to the electric utilities that serve the territories in which the electricity service supplier sells electricity to retail consumers.

Large utilities -- those with 3% or more of the state's load -- must ensure that a percentage of the electricity sold to retail customers in-state be derived from newer eligible renewable energy resources according to the following schedule:

- 5% by 2011
- 15% by 2015
- 20% by 2020
- 25% by 2025

Eligible "newer" resources are primarily those placed in service on or after January 1, 1995. Smaller utilities are subject to lower standards. Utilities with less than 1. 5% of state load must meet a 5% RPS by 2025. Utilities with more than 1. 5%, but less than 3% of state load must meet a 10% RPS by 2025. However, utilities that buy into a new coal plant or sign a new contract specifically for new coal power and publicly-owned utilities that annex investor-owned utility territory without consent are subject to the "large utility" standards.

The legislation also established a "goal" that by 2025 at least 8% of Oregon's retail electrical load comes from small-scale, community renewable energy projects with a capacity of 20 MW or less. In fact, the legislation modified Oregon's public purpose charge for renewable resources to focus on smaller projects of 20 MW or less and extended the sunset date on the public purpose charge through 2025.

California Renewable Portfolio Standard (RPS)

California's Renewables Portfolio Standard (RPS) was originally established by legislation enacted in 2002. Subsequent amendments to the law have resulted in a requirement for California's electric utilities to have 33% of their retail sales derived from eligible renewable energy resources in 2020 and all subsequent years. The law established interim targets for the utilities as shown below. By January 1, 2012, the California Public Utilities Commission (CPUC) must establish specific electricity sales targets for electric retail sellers based on the interim targets:

- 20% of retail sales by December 31, 2013
- 25% of retails sales by December 31, 2016
- 33% of retails sales by December 31, 2020

AB 327 (2013) allows the CPUC to establish procurement requirements in excess of the percentages stated above. Publicly owned municipal utilities (POUs) are not regulated by the CPUC but are affected by the law nonetheless, and their governing boards are charged with establishing procurement requirements based on the interim goals above by December 31, 2016 and 33% by 2020. In 2021 and later years, all retail sellers must procure 33% of their retail sales from RPS-eligible resources.

	Actual RPS Procurement Percentages in 2013	Percentage of RPS Procurement Currently Under Contract for 2020
PG&E	23. 8 %	31. 3 %
SCE	21. 6 %	23. 5 %
SDG&E	23. 6 %	38. 8 %

Table 3: California RPS Targets by IOU

The California Legislature has an insatiable appetite for renewable resources at the expense of consumers. Repeatedly there have been statutes passed and executed by the Governor to increase the amount of renewable power. Established in 2006 under Senate Bill 1078, the California Renewable Portfolio Standard (RPS) required electric utilities to increase renewable energy resources to reach 20% of all retail sales by 2010. The California Energy Commission (CEC) released a full list of RPS projects and it was found that approximately 40% of all projects on the CEC project list will be served by Imported Generation.

Nevada Renewable Portfolio Standard (RPS)

Nevada established a renewable portfolio standard (RPS) as part of its 1997 restructuring legislation. Under the standard, NV Energy (formerly Nevada Power and Sierra Pacific Power) must use eligible renewable energy resources to supply a minimum percentage of the total electricity it sells. In 2001, the state increased the minimum requirement by 2% every two years, culminating in a 15% requirement by 2013. The portfolio requirement has been subsequently revised, most recently by of 2009, which increased the requirement to 25% by 2025. The 2009 amendments also raised the solar carve-out, requiring utilities to meet 6% of their portfolio requirement through solar energy beginning in calendar year 2016. The solar carve-out remains at 5% through the end of calendar year 2015. In addition to solar, qualifying renewable energy resources include biomass,

geothermal energy, wind, certain hydropower, energy recovery processes*, and waste tires (using microwave reduction). The following schedule is currently in effect:

- 6% renewables/efficiency in 2005 and 2006
- 9% renewables/efficiency in 2007 and 2008
- 12% renewables/efficiency in 2009 and 2010
- 15% renewables/efficiency in 2011 and 2012
- 18% renewables/efficiency in 2013 and 2014
- 20% renewables/efficiency in 2015 through 2019
- 22% renewables/efficiency in 2020 through 2024
- 25% renewables/efficiency in 2025 and thereafter

Utah Renewable Portfolio Goal (RPG).

Utah enacted "The Energy Resource and Carbon Emission Reduction Initiative" in March 2008. While this law contains some provisions similar to those found in renewable portfolio standards (RPSs) adopted by other states, certain other provisions in S. B. 202 indicate that this law is more accurately described as a renewable portfolio "goal" (RPG). Specifically, the law requires that utilities only need to pursue renewable energy to the extent that it is "cost-effective" to do so. The guidelines for determining the cost-effectiveness of acquiring an energy source include an assessment of whether acquisition of the resource will result in the delivery of electricity at the lowest reasonable cost, as well as an assessment of long-term and short-term impacts, risks, reliability, financial impacts on the affected utility, and other factors determined by the Utah Public Service Commission (PSC).

Goals

Under S. B. 202 -- To the extent that it is cost-effective to do so -- investor-owned utilities, municipal utilities and cooperative utilities must use eligible renewables to account for 20% of their 2025 adjusted retail electric sales. Adjusted retail sales include the total kilowatt-hours (kWh) of retail electric sales reduced by the kWh attributable to nuclear power plants, demand-side management measures, and fossil fuel power plants that sequester their carbon emissions. For example, if a utility has electric sales of 100 million megawatt-hours (MWh) in 2025, and 10 million MWh was produced at a nuclear plant, the utility would need to produce 20% of 90 million MWh from renewable energy sources to be in compliance.

While RPSs adopted by most states include interim targets that increase over time, Utah's goal has no interim targets. The first compliance year is 2025 (although utilities must file progress reports on January 1 of 2010, 2015, 2020 and 2024). Progress reports must indicate the actual and projected amount of qualifying electricity the utility has acquired, the source of the electricity, an estimate of the cost for the utility to achieve their target, and any recommendations for a legislative or program change.

Renewable Energy Certificates

Utilities may meet their targets by producing electricity with an eligible form of renewable energy or by purchasing renewable energy certificates (RECs), enacted in March of 2009 granted authority to the PSC to develop or approve a system to track RECs. The legislation specifically referenced the Western Renewable Energy Generation Information

System as an acceptable trading platform. To date the PSC has not adopted a system to track RECs.

Eligible Technologies
For the purposes of the law, eligible renewables include electric generation facilities that became operational after January 1, 1995, and produce electricity from solar; wind; biomass (under certain conditions); hydroelectric (under certain conditions); wave, tidal or ocean-thermal energy; geothermal; or waste gas and waste heat. Solar-thermal installations can also count towards the goal with no limit, and their contribution is determined by assessing the amount of fossil fuel consumption they displace. In 2010 Utah added methane gas from an abandoned coal mine and methane gas from a coal degassing operation associated with a state-approved mine permit as eligible technologies. In addition, municipal solid waste was added as an eligible technology. A third bill signed in 2010, added compressed air energy storage as an eligible technology if the electricity used to compress the air was produced using a renewable energy resource, or if an equivalent number of RECs was purchased. Electricity may be produced within the state, or within the geographic boundary of the Western Electricity Coordinating Council. Notably, each kWh of electricity produced using solar energy counts as 2. 4 kWh for the purposes of meeting the goal.

Arizona Renewable Energy Standard (RES)

In November 2006, the Arizona Corporation Commission (ACC) adopted to expand the state's Renewable Energy Standard (RES) to 15% by 2025, with 30% of the renewable energy to be derived from distributed energy technologies (~2,000 MW). In June 2007, the state attorney general certified the rule as constitutional, allowing the new rules to go forward, and they took effect 60 days later. Investor-owned utilities and electric power cooperatives serving retail customers in Arizona, with the exception of distribution companies with more than half of their customers outside Arizona, are subject to the standard.

Utilities subject to the RES must obtain renewable energy credits (RECs*) from eligible renewable resources to meet 15% of their retail electric load by 2025 and thereafter. Of this percentage, 30% (i. e. 4. 5% of total retail sales in 2025) must come from distributed renewable (DR) resources by 2012 and thereafter. One-half of the distributed renewable energy requirement must come from residential applications and the remaining one-half from nonresidential, non-utility applications. The compliance schedule is below where DR = Distributed Renewable resources

- 2006:1. 25%
- 2007: 1. 50% (5% DR)
- 2008: 1. 75% (10% DR)
- 2009: 2. 00% (15% DR)
- 2010: 2. 50% (20% DR)
- 2011: 3. 00% (25% DR)
- 2012: 3. 50% (30% DR)
- 2013: 4. 00% (30% DR)
- 2014: 4. 50% (30% DR)
- 2015: 5. 00% (30% DR)

- 2016: 6. 00% (30% DR)
- 2017: 7. 00% (30% DR)
- 2018: 8. 00% (30% DR)
- 2019: 9. 00% (30% DR)
- 2020: 10. 00% (30% DR)
- 2021: 11. 00% (30% DR)
- 2022: 12. 00% (30% DR)
- 2023: 13. 00% (30% DR)
- 2024: 14. 00% (30% DR)
- 2025: 15. 00% (30% DR)

A utility may use bundled RECs acquired in any year to meet its annual requirement. With the exception of incremental generation from hydropower facilities or hydropower output used to firm intermittent renewables, renewable energy from facilities installed before January 1, 1997, are not eligible. Energy produced by eligible renewable-energy systems must be deliverable to the state.

Colorado Renewables Portfolio Standard (RPS)

Note: The law described on this page was amended by Senate Bill 252 of 2013. Among other changes, the bill doubled the renewable energy requirement for cooperative utilities of a certain size, allowed for additional technologies to qualify, created a distributed generation carve-out for cooperative utilities, and made a new requirement for generation and transmission cooperatives. After signing the legislation, the Governor issued two Executive Orders forming an Advisory Council to study and report on the feasibility concerns of the companies impacted by the legislation. The summary below describes this law as modified by Senate Bill 252.

Colorado became the first U. S. State to create a renewable portfolio standard (RPS) by ballot initiative when voters approved Amendment 37 in November 2004. The original version of Colorado's RPS required utilities serving 40,000 or more customers to generate or purchase enough renewable energy to supply 10% of their retail electric sales. In March 2007, increased the RPS and extended a separate renewable-energy requirement to electric cooperatives, among other changes. In 2010 Colorado further expanded the RPS. Eligible renewable-energy resources include solar-electric energy, wind energy, geothermal-electric energy, biomass facilities that burn nontoxic plants, landfill gas, animal waste, hydropower, recycled energy,* and fuel cells using hydrogen derived from eligible renewables. Senate Bill 252 (2013) also allows coal mine methane and pyrolysis of municipal solid waste to qualify, but only if the Colorado Public Utilities Commission (PUC) determines they are greenhouse gas neutral technologies. The PUC has issued rules to implement the RPS, but has not yet ruled on these two new technologies. The rules were most recently amended as required by HB 1001 in August 2010. The PUC's rules generally apply to investor-owned utilities (IOUs). Electric cooperatives and municipal utilities serving more than 40,000 customers are still bound to the separate requirements approved by the legislature.

Requirement for IOUs

Colorado's RPS requires each IOU to provide specific percentages of renewable energy and/or recycled energy according to the following schedule:

- 3% of its retail electricity sales in Colorado for the year 2007;
- 5% of its retail electricity sales in Colorado for the years 2008-2010;
- 12% of its retail electricity sales in Colorado for the years 2011-2014;
- 20% of its retail electricity sales in Colorado for the years 2015-2019; and
- 30% of its retail electricity sales in Colorado for the year 2020 and for each following year.

Distributed Generation Carve-out (IOUs only)
Utilities must also have a certain percentage of their retail sales come from either wholesale distributed generation (DG) or retail DG**, regardless of technology type, according to the following schedule:

- 1% of its retail electricity sales in 2011 and 2012;
- 1. 25% of its retail electricity sales in 2013 and 2014
- 1. 75% of its retail electricity sales in 2015 and 2016;
- 2% of its retail electricity sales in 2017-2019; and
- 3% of its retail electricity sales in 2020 and each following year.

At least one-half of the DG requirement must be generated by retail DG systems located on-site at customers' facilities. Beginning January 1, 2015, the Colorado Public Utility Commission (PUC) may reduce the DG requirement if a utility submits an application to them, and the PUC finds the requirement is no longer in the public interest. If the PUC finds that public interest requires a higher DG requirement, they are to report their findings to the General Assembly.

Requirement for Cooperatives and Municipal Utilities
Colorado's RPS also requires all electric cooperatives and each municipal utility serving more than 40,000 customers to provide specific percentages of renewable energy and/or recycled energy. The following schedule applies to municipal utilities serving more than 40,000 customers and cooperative utilities that provide service to fewer than 100,000 meters:

- 1% of its retail electricity sales in Colorado for the years 2008-2010;
- 3% of its retail electricity sales in Colorado for the years 2011-2014;
- 6% of its retail electricity sales in Colorado for the years 2015-2019; and
- 10% of its retail electricity sales in Colorado for the year 2020 and each following year.

Cooperative utilities serving 100,000 or more meters are subject to a higher requirement of 20% by 2020.

Distributed Generation Carve-out for Cooperatives
Senate Bill 252 (2013) added a distributed generation carve-out to the requirements listed above for cooperative utilities. For cooperative utilities that provide service to 10,000 or more meters, 1% of its retail electricity sales must come from distributed generation in 2020 and each following year. For cooperative utilities that provide service to less than

10,000 meters, 0. 75% of its retail electricity sales must come from distributed generation in 2020 and each following year.

Requirement for Generation and Transmission Cooperatives
Senate Bill 252 (2013) added a separate RPS requirement for generation and transmission cooperatives. The legislation defines such organizations as providing wholesale electric service directly to Colorado electric associations that are its members. At least 20% of the energy it provides its Colorado members at wholesale must be must generated from renewable energy in 2020 and each following year. For the purposes of this law, generation and transmission cooperatives may count the renewable energy generated or caused to be generated by their member utilities towards their requirement.

Credit Multipliers
The Colorado RPS includes credit multipliers for four types of projects. These multipliers cannot be combined. One project can only receive one multiplier.

- Each kilowatt-hour (kWh) of eligible electricity generated in-state, other than retail DG, can receive 125% credit for RPS-compliance purposes.
- Electricity generated at a "community-based project" -- a project not greater than 30 MW in capacity that is located in Colorado and owned by individual residents of a community or by an organization or cooperative that is controlled by individual residents, or by a local government entity or tribal council can receive 150% credit for RPS-compliance purposes.
- Solar electricity located in the territory of a cooperative or municipal utility and generated by a facility that begins operation before July 1, 2015, can receive 300% credit for RPS-compliance purposes. (Solar electricity generated by a facility that begins operation on or after July 1, 2015, receives 100% credit.)
- Projects up to 30 MW that are interconnected to electrical transmission or distribution lines owned by a cooperative or municipal utility, which are installed prior to December 31, 2014 can receive 200% credit for RPS-compliance purposes. With the exception of investor-owned utilities using this multiplier, it is only available for the first 100 MW of projects statewide.

Tradable renewable energy credits (RECs) may be used to satisfy the standard.

- Recycled energy is defined as energy produced by a generation unit with a nameplate capacity of not more than 15 (MW) that converts the otherwise lost energy from the heat from exhaust stacks or pipes to electricity and that does not combust additional fossil fuel.
- Retail Distributed Generation is defined as a resource that is located on the site of a customer's facilities and is interconnected to the customer's side of the meter". Presumably, this would include all renewable energy systems that participate in net metering. "Wholesale distributed generation" is defined as a "resource in Colorado with a nameplate capacity rating of 30 MW or less and that does not qualify as retail distributed generation." DG systems with a nameplate capacity of 1 MW or greater must be registered with a REC tracking system which will be selected by the PUC.

New Mexico Renewables Portfolio Standards and Goals (RPS)

The purpose of this rule is to implement the Renewable Energy Act, and to bring significant economic development and environmental benefits to New Mexico. This rule applies to electric public utilities and rural electric distribution cooperatives. Each public utility must develop a reasonable cost renewable energy portfolio. In developing its renewable energy portfolio, a public utility shall take into consideration the potential for environmental and economic benefits to New Mexico. The renewable portfolio standard shall be no less than five percent (5%) of annual retail jurisdictional energy sales for calendar year 2006 and six percent (6%) for calendar years 2007 through 2010, except as modified by Subsection C of this section. The renewable portfolio standard shall be no less than ten percent (10%) for calendar years 2011 through 2014. The renewable portfolio standard shall be no less than fifteen percent (15%) for calendar years 2015 through 2019. The renewable portfolio standard shall be no less than twenty percent (20%) for calendar year 2020 and subsequent years. Rural electric distribution cooperatives must offer their retail customers a voluntary renewable energy tariff to the extent that their suppliers under their all-requirements contracts make such renewable resources available. Rural electric distribution cooperatives must report to the commission by April 30 of each year concerning the availability to them of renewable energy and the annual demand for renewable energy pursuant to their voluntary tariff.

The renewable portfolio standard:

- 2006 no less than five percent (5%) of annual retail jurisdictional energy sales
- 2007 through 2010 six percent (6%), except as modified by Subsection C of this section.
- 2011 through 2014 no less than ten percent (10%).
- 2015 through 2019 no less than fifteen percent (15%)
- 2020 and subsequent years no less than twenty percent (20%)

Texas Renewable Portfolio Standard (RPS)

In 1999 the Public Utility Commission of Texas (PUCT) adopted rules for the state's Renewable Energy Mandate, establishing a renewable portfolio standard (RPS), a renewable-energy credit (REC) trading program, and renewable-energy purchase requirements for competitive retailers in Texas. The 1999 standard called for 2,000 MW of new renewables to be installed in Texas by 2009, in addition to the 880 MW of existing renewables generation at the time. In August 2005, increased the renewable-energy mandate to 5,880 MW by 2015 (about 5% of the state's electricity demand), including a target of 500 MW of renewable-energy capacity from resources other than wind. Wind accounts for nearly all of the current renewable-energy generation in Texas. The 2005 legislation also set a target of reaching 10,000 MW of renewable energy capacity by 2025.

To address concerns about the adequacy of the state's transmission systems, the law also instructs the PUCT to require utilities to add to their transmission systems as necessary to meet the renewable energy goal, and to allow utilities to recover the cost of such projects in their electric rates. The schedule of renewable energy capacity required and the corresponding compliance dates are as follows:

- 2,280 MW by 1/1/2007
- 3,272 MW by 1/1/2009
- 4,264 MW by 1/1/2011
- 5,256 MW by 1/1/2013
- 5,880 MW by 1/1/2015

Qualifying renewable energy sources include solar, wind, geothermal, hydroelectric, wave or tidal energy, biomass, or biomass-based waste products, including landfill gas. Qualifying systems are those installed after September 1999. The RPS applies to all investor-owned utilities. Municipal and cooperative utilities may voluntarily elect to offer customer choice.

The PUCT established a renewable-energy credit (REC) trading program that began in July 2001 and will continue through 2019. Under PUCT rules, one REC represents one MWh of qualified renewable energy that is generated and metered in Texas. A capacity conversion factor (CCF) is used to convert MW goals into MWh requirements for each retailer in the competitive market. The CCF was originally administratively set at 35% for the first two compliance years, but is now based on the actual performance of the resources in the REC-trading program for the previous two years. For 2010 and 2011 compliance years the CCF was 30. 5%. The CCF increased to 32. 2% for compliance years 2012 and 2013.

Pursuant to meeting the 500 MW non-wind goal contained in S. B. 20 of 2005, the PUCT has elected to award a "compliance premium" for each non-wind REC generated after December 31, 2007. Compliance premiums are functionally equivalent to a REC for the RPS compliance purposes and may only be awarded to non-wind facilities that were installed and certified by the PUCT after September 1, 2005. This method effectively doubles the compliance value of electricity generated by renewable resources other than wind.

Each retailer in Texas is allocated a share of the mandate based on that retailer's pro rata share of statewide retail energy sales. The program administrator maintains a REC account for program participants to track the production, sale, transfer, purchase, and retirement of RECs. Credits can be banked for three years, and all renewable additions have a minimum of 10 years of credits to recover over-market costs. An administrative penalty of $50 per MWh has been established for providers that do not meet the RPS requirements.

In 2004, the PUCT amended the RPS regulations to change the formula for calculating final REC purchase requirements, add a mechanism to account for corrections to retail sales data, and allow the program administrator of the REC-trading program to petition for deadline changes under certain circumstances. The program website listed above contains the full list of PUCT rule proposals and adoptions since the inception of the program.

The PUCT has the authority to cap the price of RECs and may suspend the standard if necessary to protect the reliability and operation of the grid. According to the 2009 compliance report, Texas surpassed its 10,000 MW by 2025 in 2009.

In 2007 ERCOT clarified that RECs retired for other purposes (e. g., sold through a voluntary green power program) could not be counted toward the RPS requirements. The law also permits large utility customers served by transmission voltage to opt out of the RPS requirements. Finally, H. B. 1090 empowers the PUCT to establish alternative compliance payments (ACP) for the RPS and for the non-wind target. To date, the PUCT has declined to set an ACP for either portion, although as noted above, an administrative penalty exists for providers that do not meet the general renewable energy obligation. The non-wind portion remains effectively voluntary without a penalty or an ACP.

Regulations for the "opt-out" provision were adopted by the PUCT effective January 2, 2009. The 2009 RPS report issued by ERCOT indicates that a total of 90 transmission voltage customers (unique meter IDs) elected to opt-out during 2009. In 2010 there were 97 transmission voltage customers (unique meter IDs) elected to opt-out. Data such as the customer name and load (MWh) associated with these opt-outs remains confidential.

California Municipalities Impact

The RPS goals described for California above represent State initiatives with jurisdiction over independently owned utilities. For the most part, public utilities, municipalities, and co-ops follow the same guidelines as those required of the IOUs. However, some, like LADWP, have additional or even more aggressive renewable energy goals. Below is the list of goals for LADWP's program:

- Aggressively pursue the Renewable Portfolio Standard goals of having 20% of LADWP's customer's energy needs met by renewable sources of energy by 2010, with a longer term goal of 35% by 2020. The portfolio of renewable energy projects will be diversified by location and technology. LADWP will give preference to projects that are located within the Los Angeles region and are owned and operated by LADWP to further support LADWP's economic development and system reliability objectives. LADWP will ultimately own or have an option to own a minimum of 50% of all renewable energy generation acquisitions, either directly or indirectly through joint power authorities.
- Provide specific actions to be taken to successfully integrate renewable generation resources into the power system while maintaining power system reliability, including upgrading control systems and operating practices for power system operators located at LADWP's Energy Control Center.
- Establish programs to enhance and expand electric transmission resources, particularly in gaining access to renewable energy resources.
- Provide specific steps needed to achieve the reduction of GHG emissions to 35% below 1990 levels by 2030. Additionally, LADWP will adhere to the climate change legislation California signed into law in 2006, including SB 1368: The Greenhouse Gas Emissions Performance Standard, and Assembly Bill (AB) 32: The California Global Warming Solutions Act.
- Increase the level of commitment and funding to Customer Energy Efficiency, Demand Side Management, Solar Rooftop Programs and other Solar Initiatives, and identify opportunities to enhance and expand these programs. In addition, LADWP will cooperate with the Port of Los Angeles in establishing an Alternative Maritime Power (AMP) program and a Solar Rooftop Program.
- Support and advocate incremental requirements in Title 24 and other Green Building and appliance standards to reduce energy usage.
- Repower additional in-basin generation consistent with power system needs and environmental requirements, including addressing concerns related to the Environmental Protection Agency's (EPA) Clean Water Act Section 316(b).

LADWP seeks to have 280 MW of distributed PV by 2017 and 300 MW of Concentrating Solar Power (CSP) by 2010, 750MW of CSP by 2015. The Solar energy quantities may very well increase as the number of solar interconnection requests are rapidly rising,

Under the state legislation, only "small hydro" (30 megawatts or less) is an eligible renewable energy resource. However, to help mitigate the impact of the RPS on ratepayers, city officials may decide to include LADWP's four aqueduct hydro power plants, each of which has slightly more than 30 MW. If included in the RPS, these hydro facilities would add 1.8 percent renewables to LADWP's existing portfolio. In addition,

LADWP has 491 MW of capacity in the Hoover Power Plant, representing another 2.8 percent in potential renewable energy. If Hoover were also included in the RPS, that would bring LADWP's current renewable generation to about 8 percent of its energy sales to retail customers.

LADWP proposes to recover the costs for renewables by establishing a renewable energy surcharge to cover interconnection costs, transmission costs, renewable energy costs that exceed the cost of providing power from traditional sources, and renewable power procurement and administrative costs. Elements of the proposal include:

- A cap on what LADWP would pay for renewable energy at 7.0 cents per kWh
- Escalated annually at a fixed rate of 1.5% to cover inflation
- A cap on annual increases in the renewable surcharge to customers at $0.001 per kWh
- A cap on the cumulative lifetime surcharge at $0.0061 per kWh

California Greenhouse Gas Emission Performance Standard on Procurement

Growing concern over the environment has spurred policy initiatives to reduce greenhouse gas emissions. California's Low Carbon Fuel Standard, issued in January 2007, called for a reduction of at least 10% in the carbon intensity of California's transportation fuels by 2020. The standard requires substitutes for fossil fuels that demonstrate lower lifecycle greenhouse gas emissions than the fuels they replace. A reduction in the carbon intensity of transportation fuels was first required in 2011. A number of alternative pathways have been identified that reduce the levels of greenhouse gas emissions in the production of ethanol, biodiesel, and renewable diesel. California has several ethanol production plants in state, but most of its ethanol supply arrives by rail from the Midwest.

Senate Bill ("SB") 1368 directs the Commission to develop a Green House Gas (GHG) Emission Performance Standard ("EPS") for base load electricity generating resources. Assembly Bill 32 ("AB 32") mandates accounting of all GHG emissions associated with electricity used in California and a statewide aggregate GHG emissions limit on electric and non-electric sectors equivalent to 1990 levels by 2020. The Commission is implementing these statutes in Phases 1 and 2 of R. 06-04-009, with the California Air Resources Board ("CARB") having the primary implementing authority for AB 32. Among other characteristics, SB 1368 mandates that the EPS:

- Applies to all LSEs;
- Applies to contracts of five years or greater and to facilities with an annual capacity factor of 60% or greater.
- Deems compliant all combined cycle gas turbine units ("CCGT") permitted before June 30, 2007;

We believe that, under current and reasonably foreseeable market conditions, natural gas facilities with a forecast capacity factor of 60% or greater will have heat rates below 9,400

Btu/kWh (note the EPS of 1,100 lbs/MWh translates to a heat rate of approximately 9,400 Btu/kwh).

The attribution of an emissions rate to unspecified resources (e. g., system purchases) remains an open issue. As a result, it is unknown whether system purchases done on an aggregate or regional basis, will pass the EPS or not.

In addition to SB 1368, AB 32 may impact electricity procurement within the planning horizon of this LTPP. Because these regulations will be promulgated by CARB in the next several years and are not known at this time, the impacts on electricity procurement are also unknown. The significant and numerous implementation details that remain unknown include the specific form of GHG emissions regulation to be adopted; the overall level of emissions limits to be applied statewide; the sources and categories of sources to be covered by the overall limits; the use of market based mechanisms; the allocation of emissions allowances among different sources and categories of sources; and the relationship of AB 32 to any subsequently enacted regional or national GHG emissions legislation.

California has also established an emissions cap-and-trade program as part of the state's Global Warming Solutions Act of 2006. The goal of the program is to reduce the state's greenhouse gas emissions (GHG) to their 1990 levels by 2020. Major sources of GHG emissions in the state, including refineries, power plants, industrial facilities, and transportation fuels, must meet a GHG cap that declines over time. To minimize the costs of pollution controls, a system for trading allowable emissions permits was created. The California Air Resources Board held its first auction of the tradable GHG emissions permits for the cap-and-trade program in November 2012. California also has adopted policies to promote increased energy efficiency, including introducing stricter appliance efficiency standards and setting higher standards for public buildings. The state also requires net metering and power source disclosure from utilities.

The GHG emission inventory divides the electric power sector into two broad categories, emissions from in-state power generation and emissions from imported electricity.

Total GHG emissions from electric power increased in 2012 for the first time since 2008, driven by greater reliance on natural gas electricity generation sources. This increase in reliance on in-state natural gas generation resulted from the loss of generation due to the closure of the San Onofre Nuclear Generating Station (SONGS) as well as the drought in 2012, causing a drop in the in-state hydropower generation. As these two major electricity generation sources dropped (33 TWh from 2011 to 2012), in-state generation by natural gas needed to increase to meet the electricity demand.

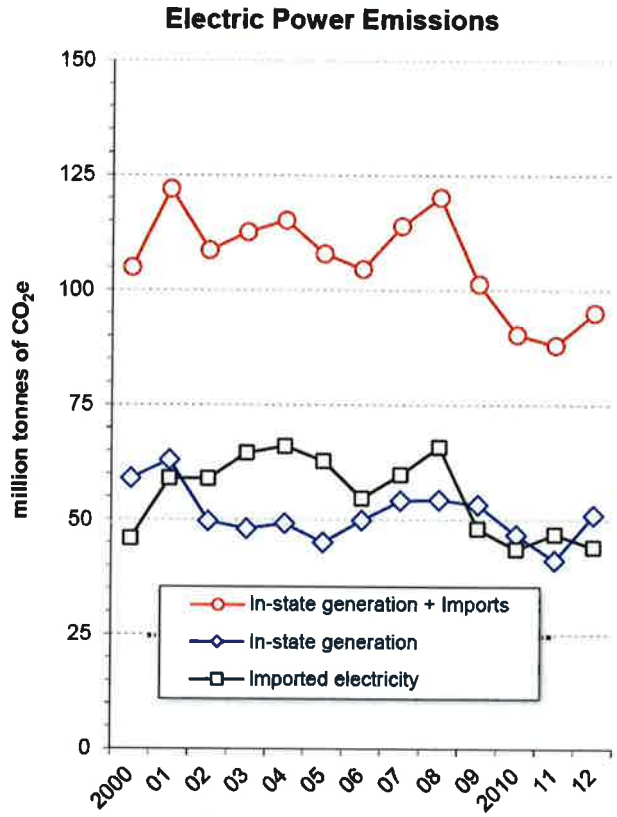


Figure 3: Electric Power Emissions used in California

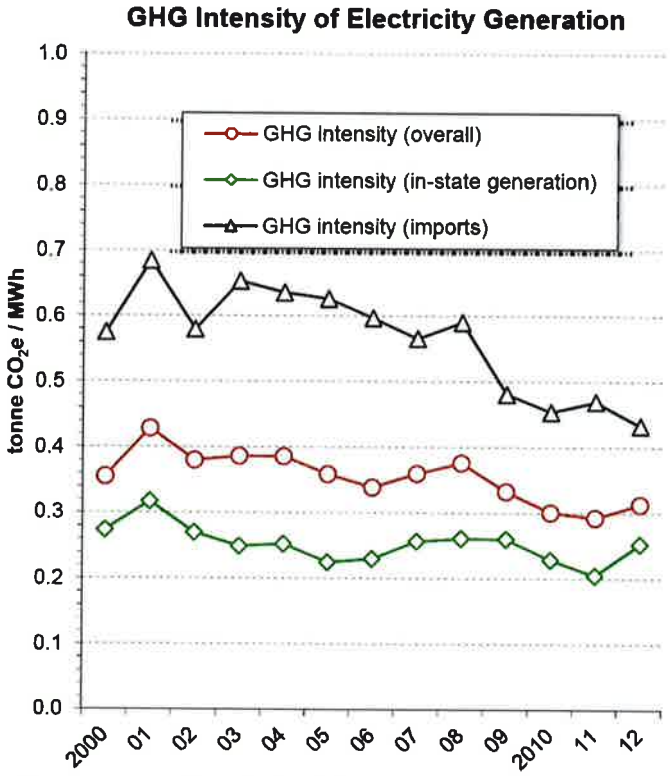


Figure 4: Greenhouse Gas Emissions of Electricity used in California

California Once through Cooling (OCT) Phase out

On May 4, 2010, the State Water Resources Control Board (SWRCB) approved a once-through-cooling (OTC) policy that included many grid reliability recommendations made by the California ISO, as well as a joint implementation proposal developed by the Energy Commission, CPUC, and California ISO. The Office of Administrative Law approved the policy on September 27, 2010, and it became an effective regulation on October 1, 2010.

The regulation affected 19 California power plants. Of those, 16 power plants totaling about 17,500 MW are in the California ISO balancing authority area, and three are in the Los Angeles Department of Water & Power (LADWP) balancing area. The original regulatory compliance dates range from 2010 to 2024. In July 2011, LADWP obtained the State Water Resources Control Board (SWRCB) consented to delay compliance for its three units until 2029. In return, LADWP agreed to exceed the ocean water best available control technology embodied in the OTC policy by completely eliminating use of ocean water for its repowered facilities.

In 2014, the United States Environmental Protection Agency issued its own OTC regulations, but these do not appear to have substantive requirements for California facilities that exceed those already enacted by the SWRCB. Several generating companies contested the SWRCB OTC policy in court, but a settlement was reached between the SWRCB and the current owners of the facilities in fall 2014. In this settlement, the Moss Landing compliance dates were pushed back to December 31, 2020, and the SWRCB agreed to several specific implementation constraints for Pittsburg, Mandalay, and Ormond Beach facilities.

OTC Phase-Out Status Tracks

The OTC policy determined that closed-cycle evaporative cooling was the best available technology and established this as a benchmark for two compliance tracks.

- Track 1: Reduction of intake flow rate at each power-generating unit to a level that can be attained with a closed-cycle evaporative cooling system. A minimum of 93 percent reduction is required compared to the design intake flow rate.
- Track 2: If compliance with Track 1 is not feasible, the impingement mortality and entrainment3 for the facility as a whole must be reduced to 90 percent of Track 1 reductions, using operational or structural controls, or both.
- Alternatively, a plant can comply by shutting down.

The current status of the 20,704 MW of NQC capacity impacted by the OCT Phase out.

- Retired 4,659 MW,
- Plans to Retire 989 MW,
- Repowered 1,320 MW, and
- Plans to repower or comply 13,736 MW.

Facility & Units	NQC	Owner Proposed Compliance Method/Date	SWRCB Compliance Date
Contra Costa 6, 7	674	Retired April 30, 2013	Dec. 31, 201
Humboldt Bay 1, 2	135	Retired Sept. 30, 2010	Dec. 31, 2010
Huntington Beach 3,4	452	Retired Nov. 1, 2012	Dec. 31, 2020
Morro Bay 3, 4	650	Retired Feb. 5, 2014	Dec. 31, 2015
Potrero 3	206	Retired Feb. 28, 2011	Oct. 1, 2011
San Onofre 2,3	2,246	Retired Jan. 31, 2011	Dec. 31, 2022
South Bay	296	Retired Dec. 31, 2010	Dec. 31, 2011
Total	4,659		
Redondo 6,8	989	Plans to retire by Dec. 31, 2018 to allow Huntington Beach to be repowered	Dec. 31, 2020
Haynes 5,6	535	Repowered as air cooled June 1, 2013	Dec. 31, 2013
El Segundo 3	335	Repowered as air cooled July 27, 2013	Dec. 31, 2015
Scattergood 3	450	Repowering as air cooled in progress	Dec. 31, 2015
Total	1,320		
Facility & Units	NQC	Owner Proposed Compliance Method/Date	SWRCB Compliance Date
Scattergood 1,2	367	Plans to repower by Dec. 31, 2020	Dec. 31, 202
Harbor 1, 2, 5	229	Plans to repower by Dec. 31, 2026	Dec. 31, 202
Haynes 1,2	444	Plans to repower by Dec. 31, 2026	Dec. 31, 2026
Haynes 8 through 10	575	Plans to repower by Dec. 31, 2029	Dec. 31, 2029
Moss Landing 1,2	1,020	Settlement defers to 12/31/2020	Dec. 31, 2017
Moss Landing 6,7	1,510	Settlement defers to 12/31/2020	Dec. 31, 2017
Alamitos 1,2	350	Request pending for delay to Dec. 31, 2027	Dec. 31, 2020
Alamitos 3,4	668	Request pending for delay to Dec. 31, 2023	Dec. 31, 2020
Huntington Beach 1,2	452	Request pending for delay to Dec. 31, 2022	Dec. 31, 2020
Alamitos 5,6	993	Plans to comply on Dec.31, 2019	Dec. 31, 2020
El Segundo 4	335	Plans to comply on Dec. 31, 2015	Dec. 31, 2015
Encina 1,2,3,4,5	946	Plans to comply on Dec. 31, 2017	Dec. 31, 2017
Diablo Canyon 1,2	2,240	Plans to comply on Dec. 31, 2024	Dec. 31, 2024
Mandalay 1,2	430	Plans to comply on Dec.31, 2020	Dec. 31, 2020
Ormond Beach 1,2	1,516	Plans to comply on Dec. 31, 2020	Dec. 31, 2020
Pittsburg 5,6,7	1,307	Plans to comply on Dec. 31, 2017	Dec. 31, 2017
Redondo 5,7	354	Plans to comply by Dec. 31, 2020	Dec. 31, 2020
Total	13,736		

Table 4: Status of power plants impacted by OTC

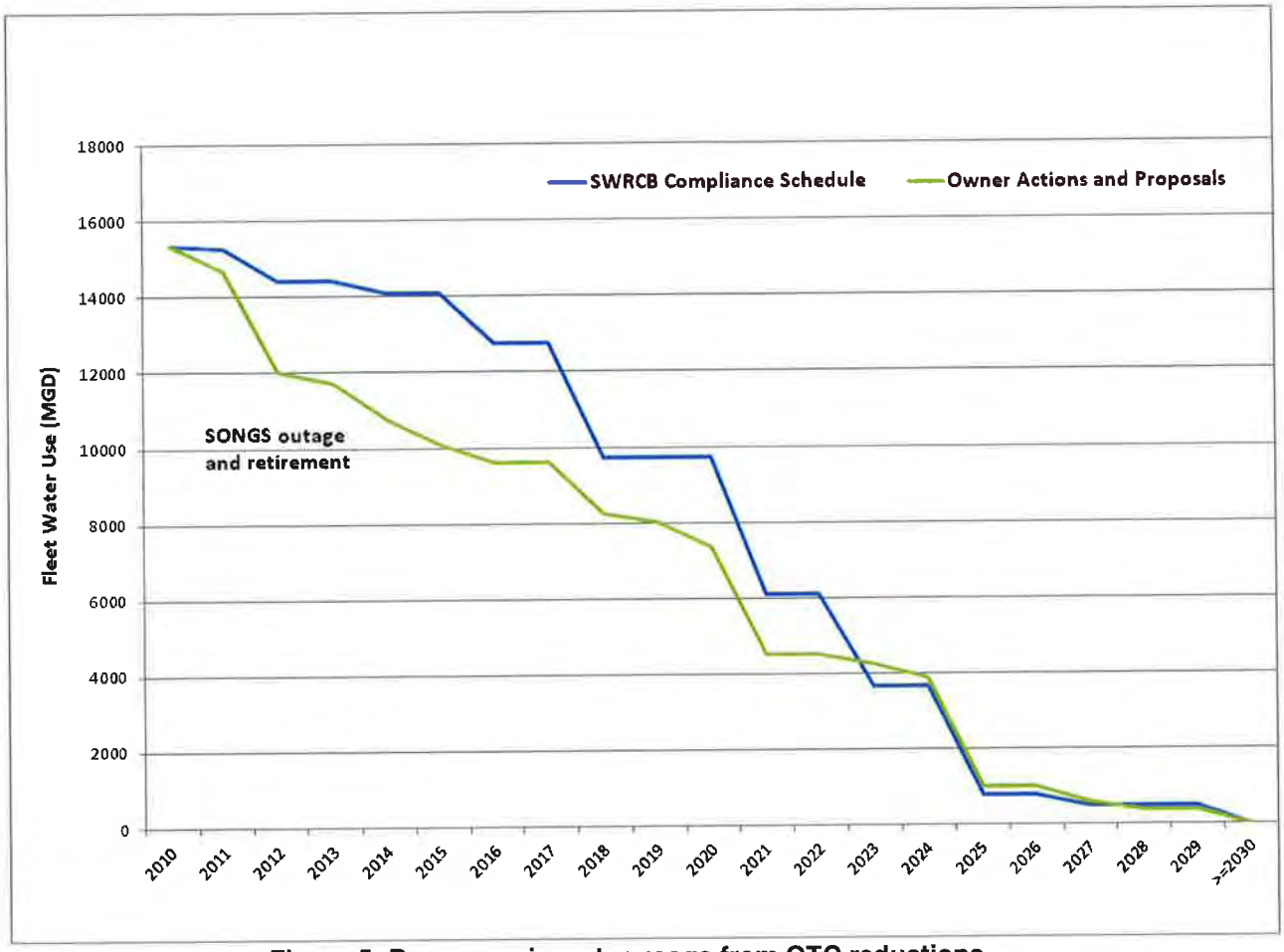


Figure 5: Decreases in water usage from OTC reductions

Demand/ Load

Declining Demand Growth and Projected Capacity Additions, according to the NERC 2014LTRA reference case. The NERC-wide annual peak demand growth rate is 1.05 % for the summer and 0.97 % for the winter. These are the lowest growth rates on record for both seasons.

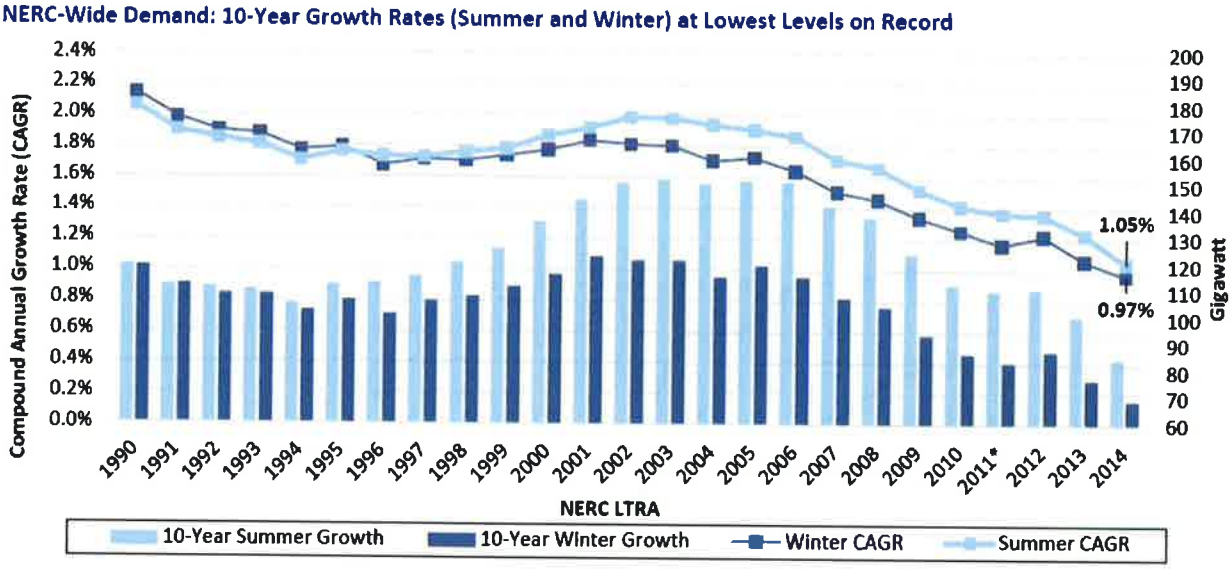


Figure 6: Historical Peak Demand Growth

Energy efficiency and conservation programs, as well as time-of-use rate programs in many areas continue to drive lower energy growth, and in some cases, the correlation between economic growth and load growth is no longer positive. Distributed generation (distributed energy resources) in NPCC-Ontario (-0.09 % load growth) and WECC-CA/MX (0.25 % load growth) has also reduced end-use or grid-supplied electricity demand. The following map includes peak season demand growth rates for each Assessment Area.

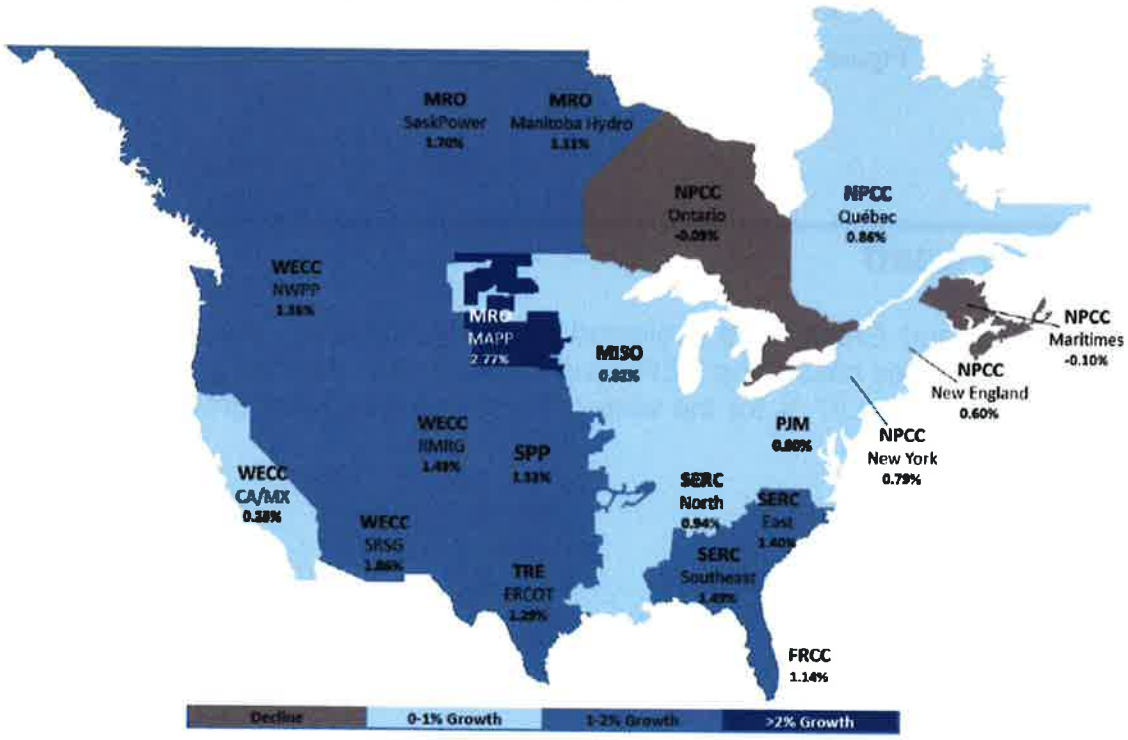


Figure 7: Peak Season 10 year annual growth rates

California Region

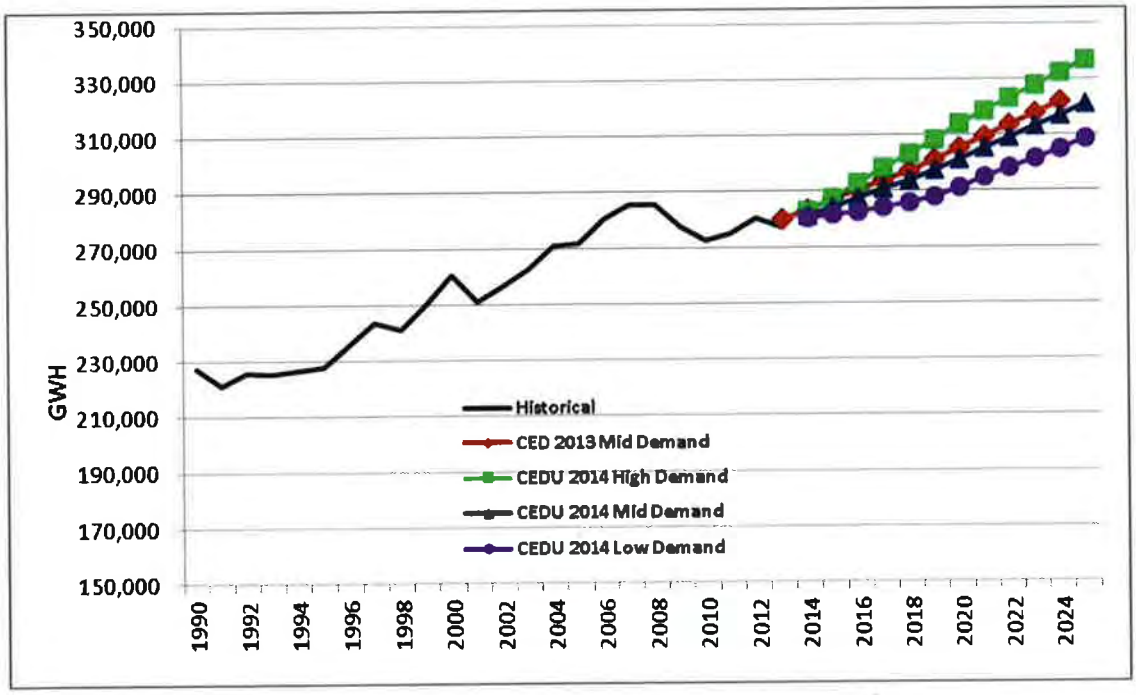
The California-Mexico power area encompasses most of California and the northern portion of Baja California, Mexico. Summer total internal demands are projected to grow at annual compound rates of 2 % in the U. S. and 5.1 % in the Mexican area, from 2015 through 2025.

WECC's 2014 PSA report indicates that summer peak demands may increase by about an additional 931 MW in 2024 from 55,610 in 2015 to about 56,541 in 2024. For the winter period, an increase of almost an additional 995 MW in 2024 (from 39,203 in 2015 to about 40,198 in 2024).

California Load Forecast

With the largest economy in the nation, California runs on energy. It is the most populous state and its total energy demand is second only to Texas. California state policy promotes energy efficiency. The state's extensive efforts to increase energy efficiency and the implementation of alternative technologies have restrained energy demand growth. Although it is a leader in the energy-intensive petroleum, chemical, forest product, and food product industries, California has one of the lowest per capita total energy consumption levels in the country.

Figure ES-1: Statewide Baseline Annual Electricity Consumption



Source: California Energy Commission, Demand Analysis Office, 2014.

Figure 8: Statewide historical and forecasted energy consumption

Annual energy usage for California only decreased by 0.5 % from 262,958 GWh in 2006 to seven year later of 261,524 GWh in 2013. Annual energy usage for the nine-year period from 2015 through 2025 is forecast to increase by 1.23 % annually for the Mid Energy Demand Case.

Peak demand and average demand are significantly different. Peak demand in California occurs during the summer months and is driven largely by air-conditioning loads. Thousands of megawatts of in-state generating capacity sit idle for much of the year except when called upon to meet peak electricity demand periods.

2013 (GWH)	Growth	2015	2020	2025	2030
261,525	1.28%	268,263	285,877	304,647	324,650
	RPS %	23%	33%	33%	33%
	RPS Requirement	61,700	94,339	100,534	107,135

Table 5: California RPS Obligation

Arizona, New Mexico, and Southern Nevada Region

The Arizona-New Mexico-Southern Nevada (AZ-NM-SNV) power area consists of Arizona, most of New Mexico, Southern Nevada, the westernmost part of Texas, and a portion of southeastern California. WECC's 2014 PSA report indicates that summer peak demands may increase by about an additional 4,109 MW in 2024 (from 22,217 MW in 2015 to about 26,326 MW in 2024). For the winter period, an increase of almost an additional 2,776 MW in 2024 (from 15,314 MW in 2015 to about 18,090 MW in 2024).

Nevada Load Forecast

Most of Nevada's energy comes from out of state. Nevada has few fossil fuel resources but substantial potential for geothermal, solar, and some wind power development. In part because of tourism, the transportation sector leads in energy consumption, using one-third of all energy consumed in the state. Overall, Nevada's economy is not energy-intensive, and per capita consumption is well below the national average despite heavy use of air conditioning.

Annual energy usage increased by 1.8% from 32,500 GWh in 2005 to 35,211 GWh in 2013. Annual energy usage from 2015 through 2025 is forecast to increase by 1.86 %.

2013 (GWH)	Growth	2015	2020	2025	2030
35,211	1.86%	36,533	40,060	43,926	48,166
	RPS %	20%	22%	25%	25%
	RPS Requirement	7,307	8,813	10,982	12,042

Table 6: Nevada RPS Obligation

Utah Load Forecast

Annual energy usage increased by 13.5% from 25,000 GWh in 2005 to 30,474 GWh in 2013. Annual energy usage from 2014 through 2025 is forecast to increase by 1.86 %.

2013 (GWH)	Growth	2015	2020	2025	2030
30,474	1.86%	31,618	34,670	38,016	41,686
	RPS %	PR	PR	20%	20%
	RPS Requirement	Update	Update	7,603	8,337

Table 7: Utah RPS Obligation

Arizona Load Forecast

Annual energy usage increased by 3.2% from 69,390 GWh in 2005 to 75,668 GWh in 2013. Annual energy usage from 2015 through 2025 is forecast to increase by 1.86 %.

2013 (GWH)	Growth	2015	2020	2025	2030
75,668	1.86%	78,509	86,087	94,397	103,508
	RPS %	5%	10%	15%	15%
	RPS Requirement	3,925	8,609	14,160	15,526

Table 8: Arizona RPS Obligation

Colorado Load Forecast

Annual energy usage increased by 13.5% from 25,000 GWh in 2005 to 30,474 GWh in 2013. Annual energy usage from 2014 through 2025 is forecast to increase by 1.86 %.

2013 (GWH)	Growth	2015	2020	2025	2030
53,442	1.43%	54,981	59,026	63,369	68,031
	RPS %	20%	30%	30%	30%
	RPS Requirement	10,996	17,708	19,011	20,409

Table 9: Colorado RPS Obligation

New Mexico Load Forecast

Annual energy usage increased by 7.1% from 20,638 GWh in 2005 to 23,065 GWh in 2013. Annual energy usage from 2014 through 2025 is forecast to increase by 1.86 %.

2013 (GWH)	Growth	2015	2020	2025	2030
23,065	1.86%	23,931	26,241	28,774	31,551
	RPS %	15%	20%	20%	20%
	RPS Requirement	3,590	5,248	5,755	6,310

Table 10: New Mexico RPS Obligation

Supply/ Resources

California Resources

Because California consumes much more electricity than it generates, about one-fourth of California's electricity comes from outside the state. Overall, the state receives more electricity from outside its borders than any other state in the nation. States in the Pacific Northwest deliver power to California markets that is generated at hydroelectric power plants, and states in the Southwest have, in the past, delivered power primarily generated at coal-fired power plants. Electricity supplied from coal-fired power plants has decreased since the enactment of a state law in late 2006. The law requires California utilities to limit new long-term financial investments in base-load generation to those power plants that meet strict California emissions performance standards.

In-state natural gas-fired power plants account for more than half of California's electricity generation. Until 2012, California's two nuclear power plants with their four reactors typically provided almost one-fifth of the state's total generation. However, the two reactors at the San Onofre nuclear plant were permanently shut down in mid-2013 cutting the amount of electricity generation from nuclear power in half. With adequate snowpack, hydroelectric power typically accounts for between one-tenth and one-fourth of California's total net generation. In the past decade alone, hydroelectric power has averaged one-sixth of the state's net generation. By contrast, only a small amount of the electricity generated within the state comes from coal-fired sources.

Renewables
California is the top producer of electricity from geothermal energy in the nation.
California is among the top states in the nation, typically second after Washington, in net electricity generation from renewable resources. A top producer of electricity from conventional hydroelectric power, California is also a leader in net electricity generation from several other renewable energy sources, including geothermal, solar, wind, and biomass. Substantial geothermal resources exist in the coastal mountain ranges and in the volcanic areas of northern California, as well as along the state's borders with Nevada and Mexico. Wind resources are found along the state's many eastern and southern mountain ranges. High solar energy potential is found in southeastern California's deserts. The California Renewable Portfolio Standard sets a goal of 33% of electricity generation from eligible renewable resources by 2020. Eligible resources include wind, solar, geothermal, biomass, biogas, and small hydroelectric generation facilities (less than 30 megawatts).

With over 2,700 MW of installed capacity, California is the top producer of electricity from geothermal energy in the nation. The facility known as The Geysers, located in the Mayacamas Mountains north of San Francisco, is the largest complex of geothermal power plants in the world, with more than 700 MW of installed capacity. Although wind power potential is widespread, almost three-fourths of the state's land is excluded from development of this resource because the land consists of wilderness area, parks, urban areas, or bodies of water. Even so, the state is a top generator of electricity from wind energy, producing almost 8% of the nation's total, ranking third behind Texas and Iowa. California also leads the nation in the generation of electricity from biomass and solar

energy. The world's largest solar thermal plant, located in California's Mojave Desert, began delivering electricity to the grid in early 2014. On a smaller scale, the California Solar Initiative offers cash back for installing solar power systems on rooftops of homes and businesses.

California's resource mix is diverse and expanding: California has a diverse mix of electricity generation technologies totaling approximately 79,000 MW of in-state nameplate capacity. Approximately 9,000 MW in new nameplate capacity has been added to the system since 2010. California utilities own and control 6,200 MW of dedicated capacity that is located out of state, but is classified as residing within California control areas. Imports provide a large portion of California's electricity.

Resources
For 2007, the amount of designated resource adequacy capacity from hydroelectric resources was roughly 4,500 MW throughout the peak summer months. The amount of hydro capacity that can be counted as Resource Adequacy (RA) capacity is based in part on a 1-in-5 dry hydro scenario (i. e. , the hydro conditions we expect to see only once in five years).

Installed In-State Electric Generation Capacity by Fuel Type (MW)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Coal	595	595	595	571	576	581	444	275	275	167
Biomass	1,068	1,083	1,091	1,091	1,091	1,113	1,142	1,183	1,187	1,219
Geothermal	2,623	2,641	2,586	2,598	2,648	2,648	2,648	2,703	2,703	2,703
Nuclear	4,456	4,456	4,456	4,456	4,456	4,577	4,577	4,577	2,323	2,323
Natural Gas	38,568	40,221	40,867	41,164	43,392	43,965	43,948	44,613	47,126	46,195
Large Hydro	12,069	12,160	11,911	12,192	12,192	12,224	12,264	12,264	12,274	12,362
Small Hydro	1,620	1,618	1,624	1,612	1,619	1,616	1,615	1,614	1,614	1,613
Solar	380	403	403	406	419	516	622	1,148	4,041	5,664
Wind	2,064	2,064	2,064	2,064	2,184	3,019	3,992	4,967	6,205	6,382
Other	583	517	591	591	568	520	364	366	366	367
Grand Total	64,026	65,758	66,188	66,744	69,145	70,779	71,615	73,710	78,113	78,995

Table 11: California Installed Capacity by Fuel Type

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	California Power Mix (GWh)	Percen. California Power Mix
Coal	1,018	0.51%	812	21,363	23,193	7.82%
Large Hydro	20,754	10.39%	96	2,159	23,009	7.76%
Natural Gas	120,863	60.50%	1,241	9,319	131,423	44.31%
Nuclear	17,860	8.94%	0	8,357	26,217	8.84%
Oil	38	0.02%	0	0	38	0.01%
Other	14	0.01%	0	0	14	0.00%
Renewables	39,236	19.64%	13,187	3,256	55,679	18.77%
Biomass	6,423	3.21%	1,485	21	7,929	2.67%
Geothermal	12,485	6.25%	212	495	13,192	4.45%
Small Hydro	3,343	1.67%	470	0	3,813	1.29%
Solar	4,291	2.15%	58	1,040	5,389	1.82%
Wind	12,694	6.35%	10,962	1,700	25,356	8.55%
Unspecified Sources	N/A	N/A	19,750	17,305	37,055	12.49%
Total	199,783	100.00%	35,086	61,759	296,628	100.00%

Table 12: 2013 Total System Power in Gigawatt Hours

California continues to need more external sources of electricity

California	2005	2006	2007	2008	2009	2010	2011	2012	2013
Consumption	254,250	262,959	264,235	268,155	259,584	258,531	261,942	259,538	261,525
Production	200,293	216,799	210,848	207,984	204,776	204,126	200,805	199,519	200,077
Difference	(53,957)	(46,160)	(53,387)	(60,171)	(54,808)	(54,405)	(61,137)	(60,019)	(61,448)
Percentage	79%	82%	80%	78%	79%	79%	77%	77%	77%

Table 13: California Historical In-State Load and Generation

Nevada Resources

Natural gas-fired power plants typically supply two-thirds of Nevada's net electricity generation. Coal-fired plants supply about one-seventh of the state's net generation, and renewable energy sources, mainly geothermal and hydroelectric power plants, supply the rest. Minimizing the use of scarce water in conventional generation is a priority for Nevada. One of the state's largest generating plants, NV Energy's Chuck Lenzie station, uses high-efficiency natural gas combined-cycle technology, recycles three-fourths of used water, and, to reduce water use, employs one of North America's largest air-cooled condenser systems.

About 3 in 10 Nevada households use electricity as their primary home heating source. Electricity consumption is led by the industrial sector, which uses more than one-third of the electric power consumed, with residential usage close behind. Electricity consumption

per capita is near the national average. However, Nevada's electricity consumption exceeds in-state generation, and the state obtains needed electricity over high-voltage transmission lines from Arizona and the Pacific Northwest.

Nevada has two separate power grids. One power grid supplies the Las Vegas area with grid ties to Arizona, southern Utah, and California. The other power grid supplies communities in the northern part of the state, including Elko and Reno. The northern grid is tied into Idaho, northern Utah, and northern California. Three transmission projects running the length of the state, through the eastern desert from Idaho to Las Vegas, now connect the two grids. New transmission is also planned elsewhere in the state to facilitate development of electricity generation projects that will be fueled by either natural gas or renewable sources. Several large-scale transmission projects for the delivery of renewable power to the West Coast are routed through Nevada. Those projects include the TransWest Express, agreed to in 2005 by four western state governors, as well as upgrades of existing transmission lines. The lines will also enhance Nevada's power supplies.

Renewable energy

Nevada gets more than two-fifths of its renewable energy from geothermal resources. Nevada is one of the few states that generates electricity from geothermal resources, and those resources account for more than two-fifths of the state's renewable power generation. Nevada is second in the nation, after California, in the amount of geothermal power produced and has the country's largest untapped geothermal resources. Most of Nevada's remaining renewable energy comes from hydroelectric power plants, primarily the Hoover Dam.

A small but increasing share of Nevada's renewable energy comes from solar resources, particularly several large-scale solar thermal and solar photovoltaic (PV) projects. Nevada leads the nation in solar power potential. By 2012, Nevada ranked among the top 10 states nationally in installed solar PV capacity and installed capacity per capita. The state has the world's first hybrid geothermal-solar PV plant, combining base-load geothermal and peaking solar generation. Nevada has potential wind resources along ridgelines across the state. Nevada's first commercial wind farm opened in 2012, and more projects are being considered. Because the federal government controls more than four-fifths of all land in the state, most large-scale projects need some federal rights-of-way. Transmission projects linking the northern and southern Nevada electric grids are aimed in part at enabling the connection of electricity generated from renewable energy projects in remote areas to the state's population centers.

Nevada is neutral in their energy needs

Nevada	2005	2006	2007	2008	2009	2010	2011	2012	2013
Consumption	32,501	34,586	35,643	35,192	34,284	33,773	33,916	35,180	35,211
Production	40,214	31,860	32,670	35,090	37,705	35,146	31,936	35,173	36,444
Difference	7,713	(2,726)	(2,974)	(103)	3,421	1,374	(1,981)	(7)	1,233
Percentage	124%	92%	92%	100%	110%	104%	94%	100%	104%

Table 14: Nevada Historical In-State Load and Generation

Utah Resources

More than four-fifths of Utah's net electric generation comes from coal. Most of the remaining generation is fueled by natural gas, with lesser amounts from hydroelectric, geothermal, and wind energy. Utah uses less electricity per capita than two-thirds of the states. Electricity is the primary fuel for home heating in only 1 in 10 Utah households. The commercial sector consumes the most electricity, but consumption is fairly evenly divided among residential, commercial and industrial sectors. Utah's retail electricity rates are among the nation's lowest.

Utah generates more electricity than it consumes and the state is a net power supplier to neighboring states. The state's largest generating station, which was constructed to deliver the majority of its output to California, is operated by the Los Angeles Department of Water and Power. Utah's net electricity generation decreased as demand from other states slowed in the recession, although in-state demand continued to grow. Net generation has recently increased. Some generating plant operators are considering switching from coal to natural gas to comply with California's increasingly stringent emission laws for power brought into California. High-capacity transmission lines are being built to bring conventional and renewable power from Wyoming and Utah to Colorado, Idaho, Oregon, Nevada, and California, as well as to enhance the reliability of delivery in Utah.

Utah has no nuclear power plants, but it does have the only operating uranium ore mill in the United States. The mill processes ore from underground mines in the Four Corners area where Utah, Colorado, New Mexico and Arizona meet. Utah experienced a boom in uranium mining during the Cold War, but mines were closed when U.S. demand dropped. The state is believed to have significant uranium resources remaining, and several mining permit requests are pending.

Renewable energy

Utah requires renewable energy sources to be cost-effective for state ratepayers.
In 2013, about 4% of Utah's net electric generation came from renewable sources. Hydroelectric power supplies about two-fifths of Utah's renewable energy from several dozen small facilities. Most of the facilities are older, with one built in 1896. All post-1994 hydroelectric power facilities in the state can count toward the renewables portfolio goal, but there are limits on what can be counted from out-of-state facilities.

Wind energy is supplying a small, yet growing share of Utah's net electricity generation, but the state's largest wind farm sends its power to California. There is commercial wind power potential in the Wasatch and Uinta mountain ranges and on the mesas in the western portion of the state. However, most wind investment approved for Utah utilities to date has involved Wyoming projects that Utah regulators deemed more cost-effective than in-state proposals.

In 2012, Utah was one of eight states with installed geothermal power capacity, and one of six states with utility-scale geothermal generation. Two small geothermal facilities produce power in southwestern Utah. More geothermal projects are in development. Utah has very little net generation from solar energy, but a federal environmental study has cleared 17 areas of the West for large-scale solar development, and three of those areas

are in Utah. Compressed-air energy storage, which would store air when electricity demand is low and operate turbines with the air when demand rises, is being explored for a salt formation in west-central Utah. The project could operate in conjunction with wind generators to balance out wind variability by producing electricity from both the wind turbines and the compressed air.

Utah exports electricity primarily from coal

Utah	2005	2006	2007	2008	2009	2010	2011	2012	2013
Consumption	25,000	26,366	27,785	28,192	27,587	28,044	28,859	29,723	30,474
Production	38,165	41,263	45,373	46,579	43,543	42,249	40,836	39,403	42,517
Difference	13,165	14,898	17,587	18,387	15,956	14,205	11,977	9,680	12,043
Percentage	153%	157%	163%	165%	158%	151%	142%	133%	140%

Table 15: Utah Historical In-State Load and Generation

Arizona-New Mexico-Southern Nevada Resources

The data for this sub-area present the summer 2007 capacity margins of 19. 6% without uncommitted resources and 19. 8% with uncommitted resources. By the summer of 2011, those margins become 8. 4% and 13. 7 % respectively. A significant portion of the uncommitted resources has received state utility commission approval and is under active development.

The future adequacy of the generation supply over the next ten years in this area will depend on how much new capacity is actually constructed. Generally, the proposed plants have relatively short construction times once the decision is made to proceed.

Arizona Resources

Arizona typically gets about two-thirds of its net electricity generation from coal and nuclear power plants, with natural gas supplying another one-fourth. Renewable sources, mostly hydroelectric generation, provide the balance. Palo Verde is the nation's largest nuclear power plant and is second only to the Grand Coulee Dam hydroelectric power plant in total generating capacity. In Arizona, 6 in 10 households rely on electricity as their primary energy source for home heating, and 9 in 10 homes have air conditioning. Electricity is crucial for pumping water from the Colorado River to the drier south for drinking and irrigation.

Arizona is below the U.S. median in per capita electricity consumption. The state generates more electricity than it consumes, and Arizona generating stations supply electricity to customers from El Paso, Texas, to Los Angeles, California. Transmission lines have become congested in peak demand periods, and Arizona is working with other states and stakeholders on multiple projects to improve transmission capacity. Among them are projects to bring electricity from Wyoming, Colorado, and New Mexico to Las Vegas in Nevada, Phoenix and Tucson in Arizona, and to Southern California. Only natural gas and renewable energy sources are contemplated for generating additions in

the medium term. The need for new generating capacity was delayed when electricity demand growth slackened during the recession.

Renewable energy

The Glen Canyon and Hoover dams, both located on the Colorado River in northern Arizona, provide the bulk of net hydroelectric generation. Hydroelectric power has long dominated Arizona's renewable electricity generation. But more solar and wind generating capacity is coming online, and interest in their potential is increasing. Arizona has among the largest solar energy resources of any state. The state's first commercial solar photovoltaic (PV) array opened in 1997, and the world's largest solar PV facility, located in Yuma County, Arizona, was completed in 2014. The state also has facilities using concentrating solar power technology, both operating and in development. Arizona is among the leading states in the installation of new solar facilities and ranked second in the nation after California in installed solar electric capacity in 2013.

Arizona has some wind potential, mainly along the escarpment that transects the state. The state's first commercial-scale wind farm became operational in 2009, and plans are underway to develop more. Key to developing both solar and wind potential on a large scale is transmission capacity which carries the electricity from the remote sites where it is generated to urban markets. State, regional, and federal efforts are under way to expand transmission. Arizona also has geothermal energy development potential, particularly in the central and southern parts of the state, where there are many hot springs. The state is a leader in a federal effort to map geothermal potential across the nation. One project is testing the use of carbon dioxide (CO2) instead of water as a medium to transmit geothermal energy in water-scarce regions, possibly using CO2 from coal-fired generating plants.

Arizona exports electricity from coal and renewables

Arizona	2005	2006	2007	2008	2009	2010	2011	2012	2013
Consumption	69,391	73,253	77,193	76,268	73,433	72,833	74,944	75,063	75,668
Production	101,479	104,393	113,341	119,459	111,971	111,751	108,125	110,905	113,326
Difference	32,088	31,140	36,148	43,191	38,538	38,918	33,182	35,842	37,658
Percentage	148%	143%	147%	157%	152%	153%	144%	148%	150%

Table 16: Arizona Historical In-State Load and Generation

Colorado Resources

Coal and natural gas are the primary fuels used to generate electricity in Colorado. Coal-fired plants provide about two-thirds of net generation, and natural gas provides about one-fifth. Wind turbines are producing increasing amounts of power in Colorado. The commercial and residential sectors are the largest consumers of electricity, followed by the industrial sector. Colorado uses less electricity per capita than three-fourths of the states. Only one in five Colorado households uses electricity as its main home heating source. Typically, total electricity consumption slightly exceeds in-state generation, and the state is connected by high-voltage transmission lines to Wyoming, Nebraska, New Mexico, and Utah.

Colorado's largest utility has committed to replace some older coal-fired capacity with natural gas-fired and renewable energy fueled generation. The utility and state regulators are encouraging deployment of energy efficiency and distributed generation. The recent recession reduced both power demand and the arrival of new residents from other states, leading to lowered estimates of the need for new generation and transmission this decade. Much of the new capacity may come from small-scale solar installations on homes and businesses around the state, rather than utility-scale solar projects that have been proposed in desert regions. Colorado does not have any nuclear power plants, but it does have some uranium deposits. Projects for both mining and processing ore are in development in the state. A proposed uranium mill in western Colorado has recently been permitted and licensed.

Renewable energy

Clean energy is considered a key industry in Colorado. In 2004, Colorado was the first state with a voter-approved renewable portfolio standard. Colorado has significant areas of wind resources on the eastern plains and mountain crests and solar resources in the south near the New Mexico border. Wind turbines account for the largest share of the state's renewable net electricity generation, followed by hydroelectric facilities. Colorado's largest utility has led the nation for nearly a decade in wind capacity and had about 2,200 MW of wind capacity in 2014. Overall, the state had more than 2,300 MW of capacity in 2014. The federal government has identified four Colorado areas that are potentially suitable for utility-scale solar development. The state offers rebates to encourage homeowners and businesses to install solar panels, including solar gardens collections of panels shared by several homes. Planning is under-way for transmission expansions to bring renewable electricity both to Colorado population centers and to cities in other western states. Small-scale applications of renewable technologies such as wind power, solar energy, and methane recovery are used in several industries including breweries.

There are nearly 60 small hydroelectric facilities in Colorado's mountainous western region. The state is encouraging development of small-scale hydropower projects that have minimal environmental impact, including turbines on irrigation lines. Colorado negotiated a pioneering agreement with the U.S. Federal Energy Regulatory Commission to speed the permitting process for low-impact hydropower facilities. Colorado's first commercial-scale woody biomass plant, which burns waste gathered from surrounding forests, is being built at Gypsum, Colorado. The waste consumed includes trees culled as part of efforts to fight pine beetle infestations. Colorado has a number of hot springs, and studies indicate that the state has significant geothermal potential. Some leasing of federal lands for geothermal projects in Colorado has begun.

Colorado is neutral in their electricity needs

Colorado	2005	2006	2007	2008	2009	2010	2011	2012	2013
Consumption	48,353	49,734	51,299	52,142	51,036	52,918	53,458	53,685	53,442
Production	49,617	50,698	53,907	53,442	50,566	50,721	51,433	52,557	52,937
Difference	1,263	965	2,608	1,299	(470)	(2,197)	(2,026)	(1,129)	(504)
Percentage	103%	102%	105%	102%	99%	96%	96%	98%	99%

Table 17: Colorado Historical In-State Load and Generation

Potential for renewables expansion

New Mexico Resources

Coal-fired power plants supply more than two-thirds of New Mexico's net electricity generation. Natural gas supplies most of the remaining generation. New Mexico uses less electricity per capita than two-thirds of the states and the state is a net supplier of electricity to neighboring states. The commercial sector consumes about two-fifths of the electricity sold in the state, with the residential and industrial sectors each consuming half of the remaining electricity. Less than one in six New Mexico households use electricity as the primary source for home heating.

Almost all planned new generating capacity will use natural gas-fired or renewable energy. New Mexico has recognized a state economic interest in selling more electricity out of state, particularly from the state's renewable resources. Proposals under-way include new transmission that will take advantage of the state's location at the edge of the three U.S. electrical grids—the Eastern, Western, and Texas Interties—and of the Four Corners power trading hub, located at the Four Corners coal complex in Fruitland.

Renewable energy

New Mexico possesses substantial resource potential for solar, wind, and geothermal energy. Wind energy is contributing more than 6% of New Mexico's electricity generation. The state has about a dozen commercial wind farms operating and more facilities are in the planning stages. Most wind potential is in the eastern part of the state, on the high plains and rugged ridges. Much of New Mexico gets 300 or more days of sunshine annually, giving the state some of the nation's best solar energy potential. The number of utility-scale solar photovoltaic (PV) facilities in New Mexico is increasing, and so is the use of distributed solar PV resources such as rooftop installations. The state offers a variety of incentives for distributed solar technologies. On a per capita basis, New Mexico is among the top states nationally in distributed grid-connected solar PV capacity. Concentrating solar power plants have also been proposed, but none are yet operating.

Western New Mexico's geologically active regions hold significant geothermal resource potential, and electricity generation from geothermal has been explored in the southwestern part of the state.

With a relatively small state population and low electricity demand, New Mexico's solar and wind projects need more transmission capacity to take the electricity those projects generate to markets in Arizona and California. The state has created a Renewable Energy Transmission Authority (RETA) to facilitate connecting renewable energy generating projects to both the electric grid and energy storage. RETA's goal is to enable New Mexico to send up to 5,200 MW of renewable energy to other states. The state is also home to a major portion of the SunZia Corridor, a 515-mile transmission corridor being developed by federal and state agencies that will enable renewables development on and across federally held lands.

New Mexico exports electricity primarily from coal

New Mexico	2005	2006	2007	2008	2009	2010	2011	2012	2013
Consumption	20,639	21,435	22,267	22,038	21,647	22,428	23,042	23,179	23,065
Production	35,136	37,266	35,985	37,010	39,674	36,252	38,181	36,636	35,871
Difference	14,497	15,831	13,718	14,972	18,027	13,823	15,139	13,457	12,806
Percentage	170%	174%	162%	168%	183%	162%	166%	158%	156%

Table 18: New Mexico Historical In-State Load and Generation

Expansion of Renewable Generation

There are rich untapped renewable potential in the southwest from three major forms of renewable energy production; Solar, Geothermal, and Wind. New Mexico has access to rich supplies of all three making transmission capacity out of New Mexico more valuable as these renewable resources are being use to generate electricity.

Solar

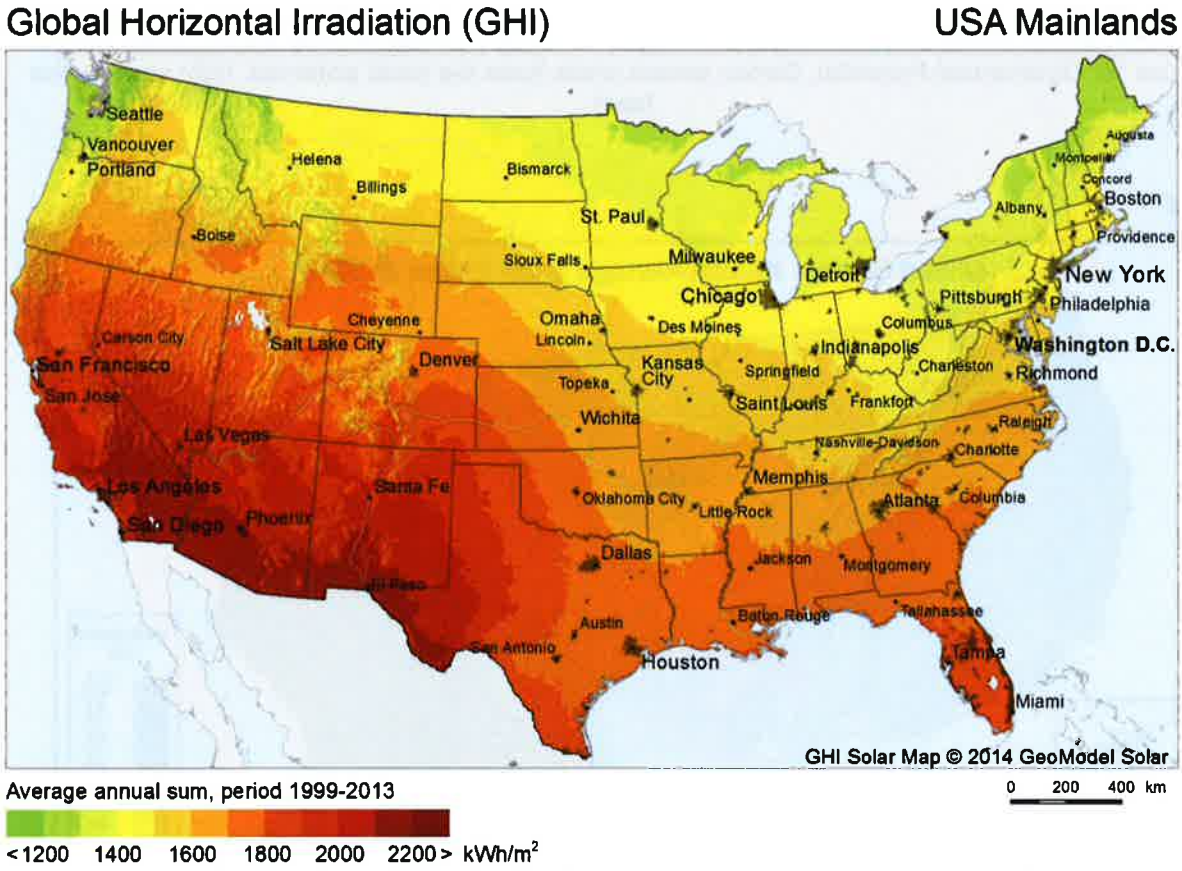


Figure 9: Solar Intensity, Darker red areas have the most potential

Geothermal

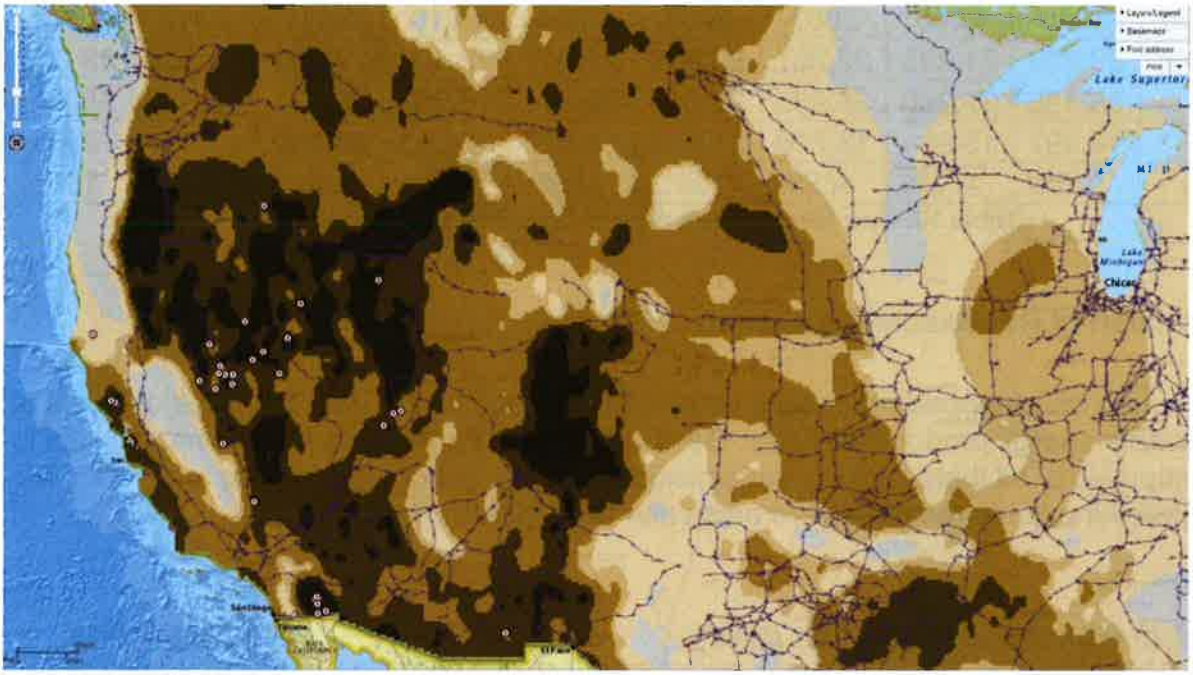


Figure 10: Geothermal Potential, Darker brown areas have the most potential, light tan has the least

Wind

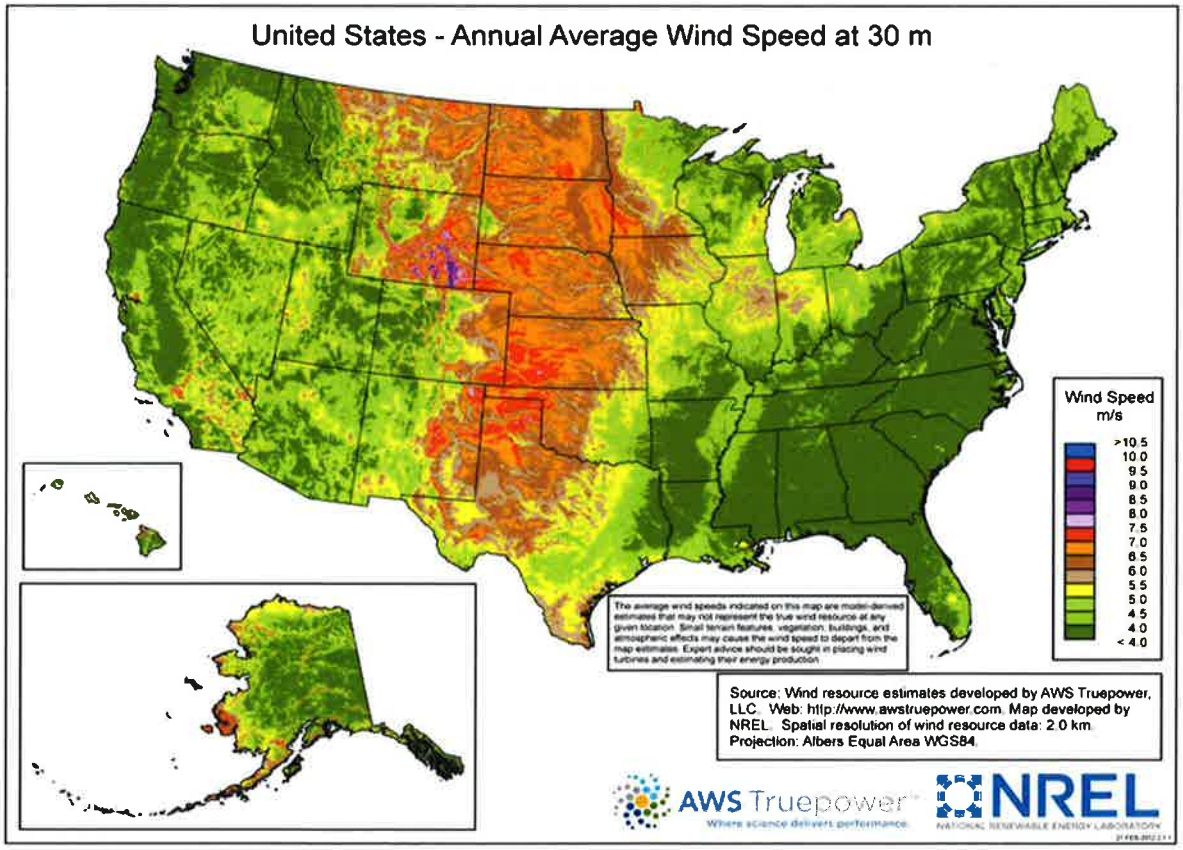


Figure 11: On-shore Wind Potential

Coal Reductions

EPA Coal Reductions

The EPA released a report titled Regulatory Impacts Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants. According to this analysis, the state implementation of Option 1 would result in the largest reduction in coal to 193 GW by 2025, while the regional implementation of Option 2 would result in the smallest reduction in coal to 214 GW by 2025.50 These two options are shown in the table and chart below, along with the 2014LTRA reference case (total on-peak contribution for all coal-fired units in the United States).

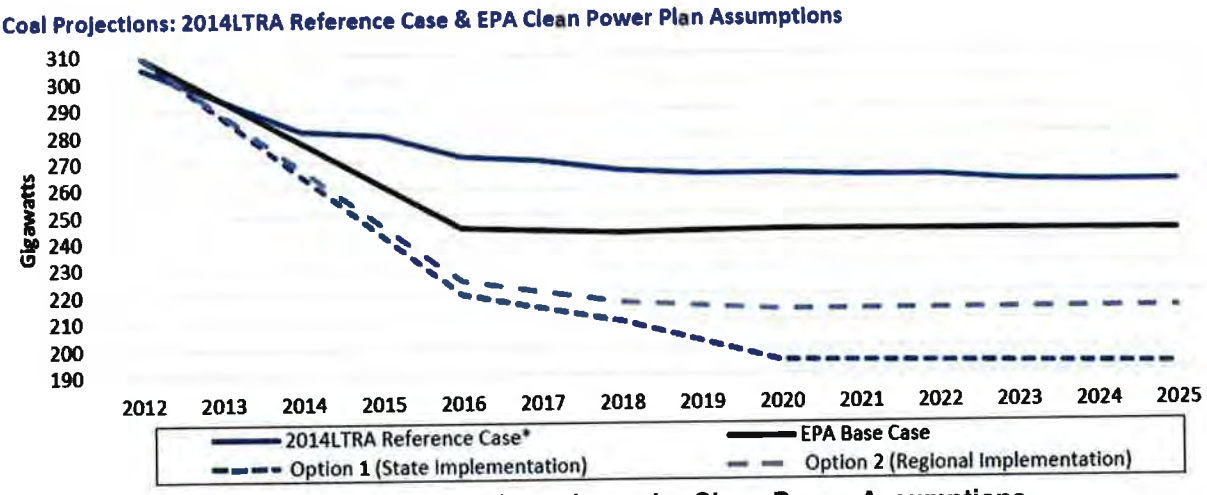


Figure 12: Future Coal Capacity under Clean Power Assumptions

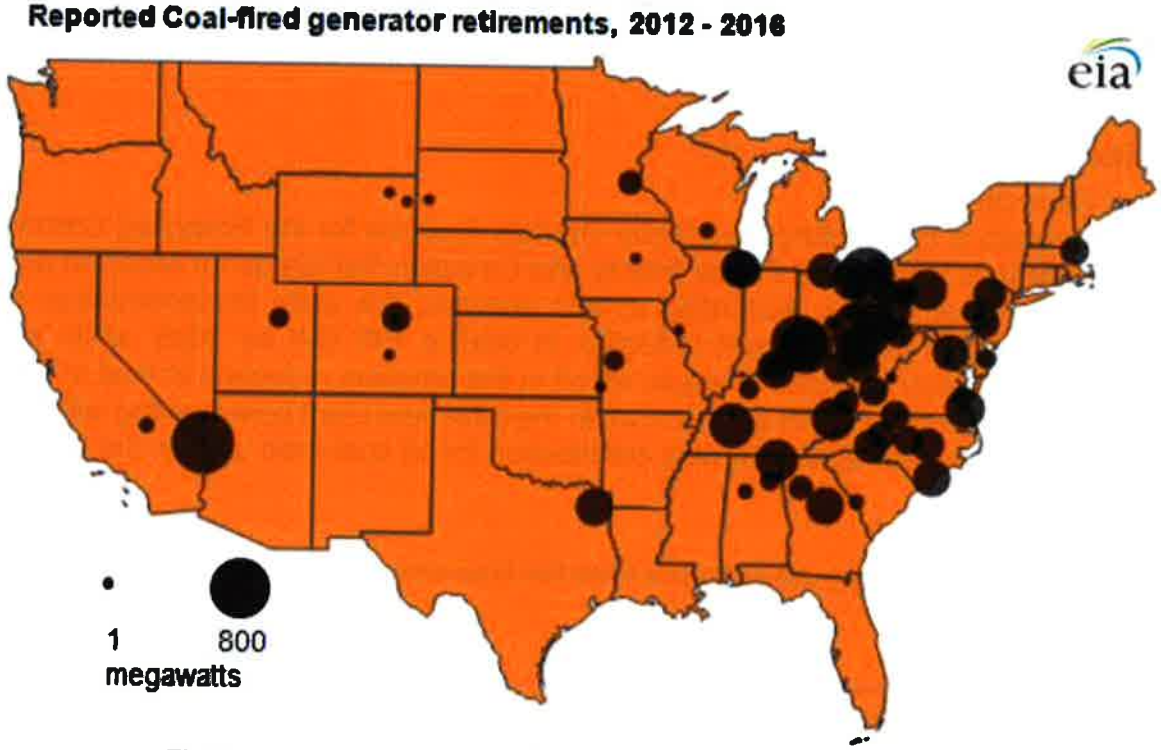


Figure 13: Forecasted Coal Plant Retirements from 2012 through 2016

Coal Plants in the West

Coal generation plays an important role in future import capacity into California. As of 2012 there is approximately 3,178.5 MW of coal generation imported into California from Four Corners, Intermountain Power Plant, Navajo, Reid Gardner, San Juan, and Boardman and delivered to the load centers.

Generator	Plant Capacity (MW)	California Share of Capacity (MW)
Four Corners	2,040	740
Intermountain Power Plant	1,800	1,350
Navajo	2250	477
Reid Gardner	557	183
San Juan	1,800	281
Boardman	585	147.5
TOTAL	9,032	3,178.5

Table 19: Capacity from Coal used in California

Oregon Coal

There are no active commercial coal mines operating in the Oregon. Instead, limited amounts of coal are shipped by rail from the Powder River Basin in Wyoming to meet the state's needs. Minor amounts of coal are shipped from Utah to industrial plants in the state as well. Coal is not a significant energy source in Oregon, and the Boardman coal-fired power plant in the north central part of the state is scheduled to stop burning coal by the end of 2020.

Boardman

Figure 14: Boardman Power Plant

Boardman is a 585 MW Coal Power Plant in Boardman, Oregon.

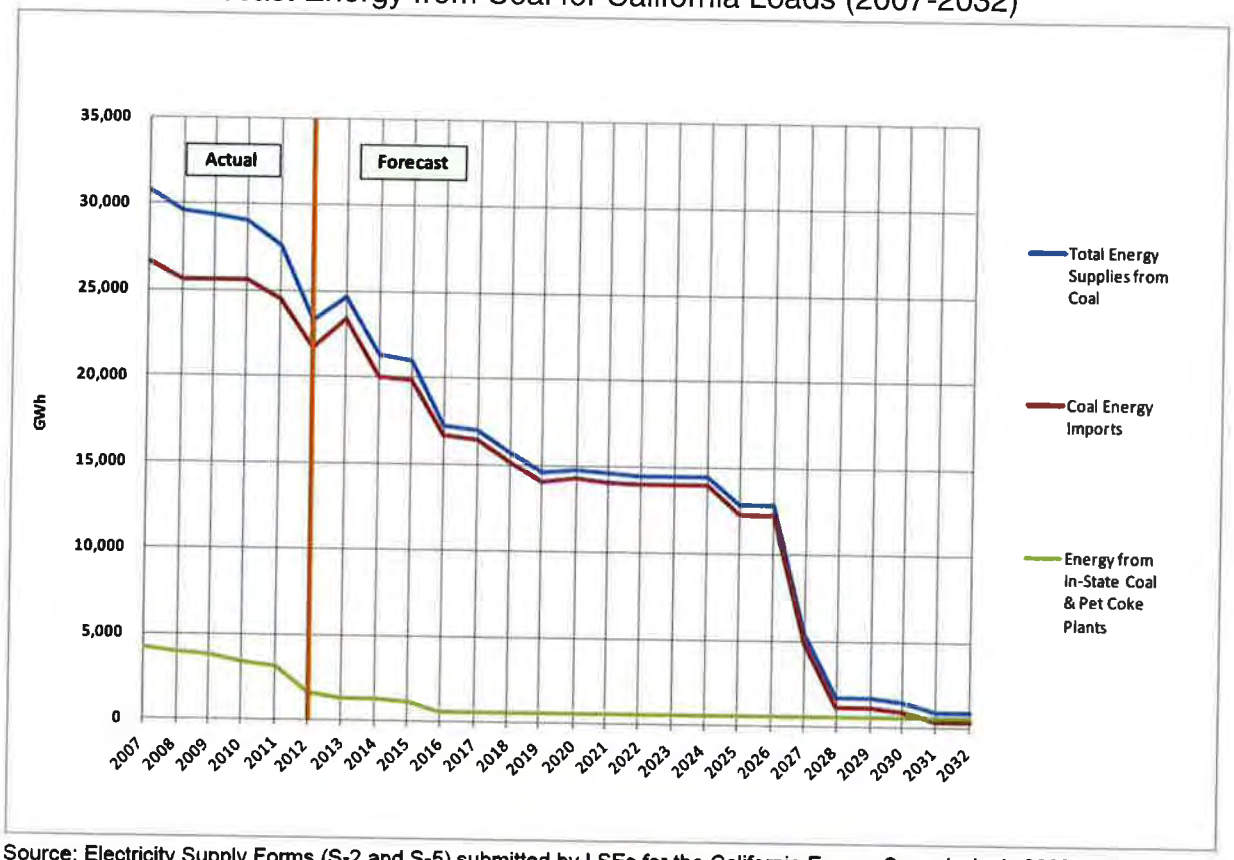
- Turlock Irrigation District (TID) has a power purchase agreement with Portland General Electric Company (PGE) for a pro rata 58.5 MW unit-contingent share of energy production. This purchase agreement began in January 1994 and terminates at the end of 2018.
- From 1989 through 2013, San Diego Gas & Electric Co. (SDG&E) had a power purchase agreement for a share of Boardman's energy production equal to 89 MW.
- PGE will terminate burning coal by 2020.

California Coal

California has no coal production and has been phasing out its use of electricity generated by coal-fired power plants. In addition to minor amounts of coal currently consumed at

plants in the electric power sector, some coal is also consumed at industrial facilities. Almost all of the coal consumed in California is from mines in Utah and Colorado. Some coal also arrives by rail from western coal mines and is exported to overseas markets from port facilities located primarily in the Los Angeles and San Francisco areas.

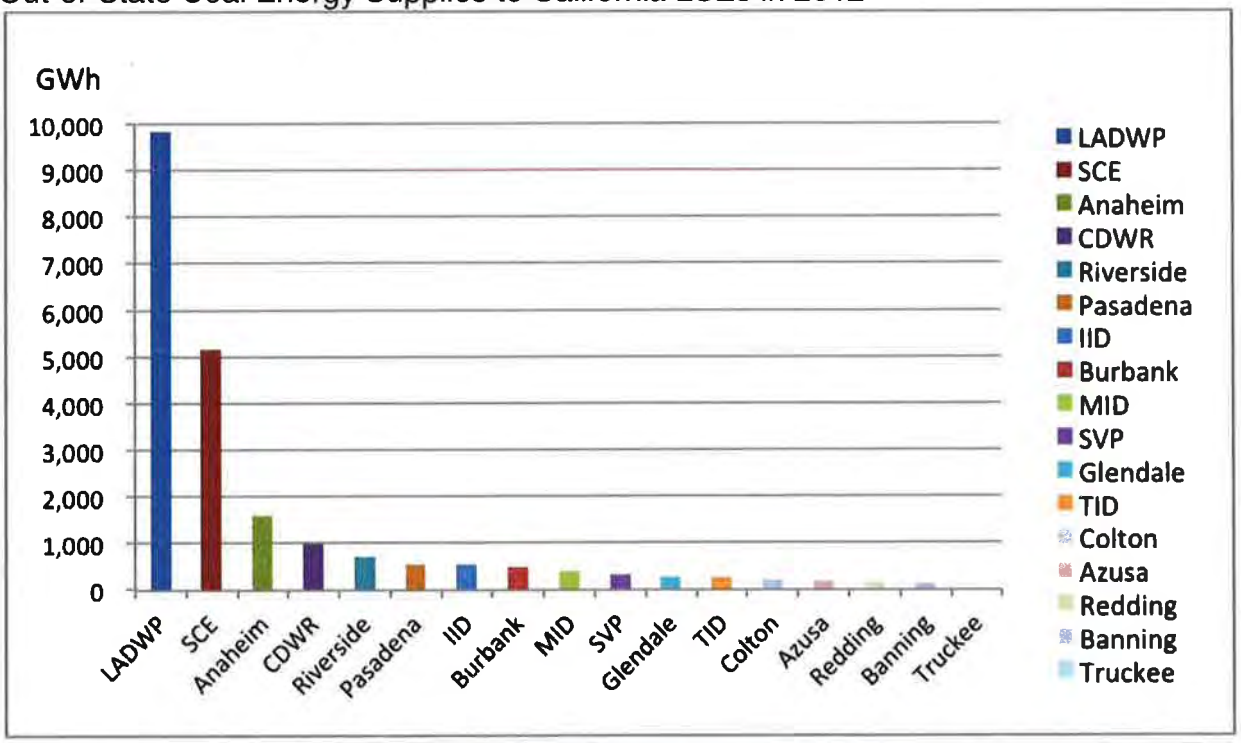
Actual and Forecast Energy from Coal for California Loads (2007-2032)



Source: Electricity Supply Forms (S-2 and S-5) submitted by LSEs for the California Energy Commission's 2009, 2011, and 2013 *Integrated Energy Policy Reports (IEPR)* available at http://energyalmanac.ca.gov/electricity/.

Figure 15: Actual and Forecast Energy from Coal for California Loads (2007-2032)

Out-of-State Coal Energy Supplies to California LSEs in 2012



Source: Electricity Supply Forms (S-2 and S-5) submitted by LSEs for the California Energy Commission's 2009, 2011, and 2013 *Integrated Energy Policy Reports (IEPR)* available at http://energyalmanac.ca.gov/electricity/.

Figure 16: Out-of-State Coal Energy Supplies to California LSEs in 2012

LADWP Coal

Los Angeles Department of Water and Power (LADWP) has been aggressively eliminating coal from its power supply. LADWP has re-negotiated their 21% interest in the 2,250 MW Navajo Generating Station with Salt River Project (SRP). According to the terms LADWP would stop receiving their 477 MW share of coal power from Navajo when the sale closes on July 1, 2016 ending power deliveries from the plant by mid-2016, about three and a half (3.5) years ahead of the date mandated by State climate change legislation. Early elimination of coal power will ensure compliance with SB 1368 and the Global Warming Solutions Act of 2006 (AB 32), which created the state's Cap and Trade Program to reduce greenhouse gas emissions. Under California law, SB 1368, electric utilities will not be allowed to import power into the state that exceeds a fossil fuel emissions cap after their current contracts expire. The emissions cap is set at the level of an efficient, combined cycle natural gas power plant. In addition, SRP has agreed to permanently shut down one unit at Navajo, which will significantly reduce emissions in that region.

> *"The era of coal is over. Today we affirm our commitment to make Los Angeles a cleaner, greener, more sustainable city," said Mayor Villaraigosa.*

LADWP's Board of Water and Power Commissioners approved a contract that will enable LADWP to completely transition out of coal power from the Intermountain Power Plant (IPP) in Delta, Utah by 2025 at the latest, with efforts to begin that transition no later than

2020. LADWP is one of six Southern California municipal utilities that purchase coal power from the 1,800 MW Intermountain Power Project located in Delta Utah under a long-term power purchase agreement that expires in 2027. Eliminating coal power from Intermountain Power Plant (IPP) was more complex than negotiating the terms of sale of Navajo because LADWP does not own any part of IPP. IPP is owned by 23 municipal utilities in Utah and supplies power to 30 utilities in Utah and six utilities in Southern California, including LADWP.

The amendment to LADWP's long-term power sales agreement will stop taking coal power from IPP earlier than 2027 and build a smaller natural gas plant that complies with California emission standards. LADWP and other Southern California municipal utilities will continue to receive renewable energy from Southern Utah from the Milford Wind project; with power delivered over the same transmission line that presently also delivers power from the Intermountain Power Project. The contract provides for beginning LADWP's transition out of coal power from IPP with the commencement of engineering, design and construction of the smaller natural gas-fired generating plant by 2020 and completely eliminating coal power from IPP no later than 2025. The smaller natural gas plant capacity is estimated between 600 and 1,200 MW. The capacity not delivered by IPP will allow LADWP and the other local municipal customers to develop more renewables and bring it to Southern California along existing transmission lines.

Nevada Coal

Nevada's newest coal-fired plant powers gold mining in the desert and also supplies electricity to the transmission grid. There is no coal mining in Nevada. Its three coal-fired electricity generating stations are supplied by railroad and by truck from mines in Wyoming and Utah. One power plant generates electricity for the Las Vegas region, a second plant supplies northern Nevada towns, and the third and newest facility powers gold mining operations in the desert near Elko. It also sends electricity to the transmission grid.

Coal-fired electricity generation in Nevada has been declining. Until 2006, Nevada's largest coal-fired plant was the Mohave Generating Station, the only plant in the world with coal delivered by a slurry pipeline, which ran 273 miles from the Black Mesa mine in Arizona. Plant operations were suspended in 2005 because of slurry water supply and plant air-quality issues, and the plant has since been dismantled. Recent proposals for new coal-fired generating plants in Nevada have been canceled. In compliance with a 2013 state law, Nevada's largest utility is planning to eliminate most of its coal-fired electricity generation by the end of 2019.

Reid Gardner Generating Station

Figure 17: Reid Gardner Power Plant

Reid Gardner Generating Station is a 557 MW coal fired plant on 480 acres located near Moapa, Nevada. The plant is located adjacent to the Moapa Band of Paiutes Indian Reservation. It is co-owned by Nevada Power (69%) and California Department of Water Resources (31%). The plant consists of four units. The first three are 100 MW units and were placed into service in 1965, 1968 and 1976. The fourth unit placed into service in 1983 produces 257 MW

- The Reid Gardner Power Plant has closed three of its four coal-generated units retiring three 100 MW generators on Dec. 20, 2014
- The decision to close Reid Gardner stems from the 2013 passage of Senate Bill 123, which aimed at reducing 800 MW of coal-generated electricity in the state by 2019.
- The capacity of the three retired units has been replaced by two natural gas fired plants: the 274 MW Las Vegas Cogeneration Associates and the 222 MW Sun Peak Generating Facility.
- Closure of Reid-Gardner's fourth and final is scheduled for 2017

Utah Coal

Utah typically accounts for less than 2% of U.S. coal production. Most active mines in Utah are underground operations in the central Uinta Basin, but recently surface mining has begun in the southern region. Nearly three-fourths of all coal mined in Utah is consumed in the state, primarily for electric power generation. About two-fifths of the coal burned in-state is delivered by truck to both power plants and industrial users. Much of

the remainder of the coal is delivered to power plants by rail but some coal is sent by conveyor systems to nearby generating plants. Coal is brought to one plant by a dedicated electric rail line from a mine just across the Colorado border. The largest share of Utah's coal is consumed within the state. Utah has joined seven other states in the Southwest Partnership on Carbon Sequestration, which will test methods of storing carbon dioxide from coal generating plant emissions.

Intermountain Power Agency

Figure 18: Intermountain Power Agency Power Plant

The Intermountain Power Agency (IPA) operates a coal fired power plant capable of generating 1,800 MW located near Delta, Utah.

- The IPA also runs transmission lines to Mona, Utah, to Adelanto, California and
- IPP supplies energy to six Southern California utilities under long-term power sales contracts that began in August 1990 and are scheduled to expire in June 2027.
- About 75 percent of the generated power is purchased by cities in southern California and the remainder is purchased by cities, cooperatives and PacifiCorp in Utah and a cooperative in Nevada.
- LADWP announced changing its contract to retire coal-firing two years earlier than planned, from 2027 to 2025.
- The third unit of the Intermountain Power Project, a 900 MW unit is currently scheduled to go online around 2012
- Recently, the IPA and the Utah Associated Municipal Power Systems have filed a lawsuit against the Los Angeles Department of Water and Power for trying to

prevent a third coal fired unit at the IPP generation site due to carbon dioxide emissions concerns.

Arizona Coal

Arizona is part of a multi-state effort to find Rocky Mountain formations suitable for carbon sequestration. Arizona has a single operating coal mine — a surface operation at Kayenta in the Black Mesa coal field — that is among the 30 largest U.S. coal mines. That mine's output is sent 78 miles by a private railroad directly to a single generating station. Coal is also brought by rail, typically from New Mexico, Wyoming, Colorado, and Montana, to supply Arizona's other coal-fired electric generating stations. Arizona gets about two-fifths of its electricity from coal.

Navajo Generating Station

Figure 19: Navajo Power Plant

Navajo Generating Station is a 2,250 MW coal-fired power plant located on the Navajo Indian Reservation, near Page, Arizona. Operator is SRP. Construction began in 1969. The first unit began producing electricity in 1974. Commercial operation of the other units began in 1975 and 1976.

- 2,250 MW from three 750 MW units.
- Peabody Western Coal Company's Kayenta Mine (50 miles to the east).
- Navajo Generating Station (NGS) serves electric customers in Arizona, Nevada and California. The station also supplies energy to pump water through the Central Arizona Project.
- Participant summary:
    - U. S. Bureau of Reclamation 24. 3%
    - SRP 21. 7%
    - LADWP 21.2% = 477 MW, that terminates at the end of 2019.

- LADWP is negotiating the terms to sell its contract share to the Salt River Project (SRP, plant operator) and expects to terminate deliveries by the end of 2015.
- Nevada Power 14. 0%
- Tucson Electric Power 7. 5%

- The SRP plans to shut down Unit 1 and is awaiting a U.S. EPA decision on new emission control requirements ($500 million to $1.1 billion costs) that may force plant closure.

Cholla Power Plant

Figure 20: Cholla Power Plant

The 995 MW Cholla Power Plant is located in northeastern Arizona near Holbrook.

- Cholla is fueled by coal from the McKinley Mine in New Mexico
- APS operates the plant and owns Units 1, 2 and 3, which are capable of producing 615 MW of electricity.
- PacifiCorp (PAC) owns the 380 MW Unit 4 - the largest unit at the plant.
- The two utilities participate in a seasonal power exchange in which PAC customers in the Pacific Northwest receive electricity from the APS system in the winter when their electricity demands are high and APS receives PAC power in the summer, during APS' peak demand.

Coronado Generation Station

Figure 21: Coronado Power Plant

- Owner/Operator: SRP (100% owner)
- Description: Coal-fired, steam electric generating station
- Location: Near St. Johns, in eastern Arizona.
- Capacity: 773 MW, from one 389 MW-unit and one 384 MW-unit
- Fuel source: The McKinley Mine, located east of Window Rock near the New Mexico-Arizona border, and Powder River Basin in Wyoming.
- Plant construction: Construction began 1975.
    - Unit 1 completed Dec. 31, 1979.
    - Unit 2 completed Oct. 1, 1980.
- Construction costs: $700 million, including $220 million in environmental control equipment.
- Environmental control equipment:
    - Electrostatic precipitators to control fly ash.
    - Scrubbers to remove sulfur dioxide (SO2).
    - Water reservoir is lined to help recover and contain process waste.

Colorado Coal

Colorado has substantial estimated recoverable coal reserves, including bituminous, subbituminous, and lignite coals, and the state produces coal from both underground and surface mines. Nearly one-half of coal mined for domestic consumption is typically used for power generation in Colorado. Colorado coal is burned for electric power generation in about a dozen states. Electricity generators in the state also consume coal shipped by

rail from Wyoming. Colorado consumes all of the electricity produced by their coal plant and does not export electricity produced by coal into California.

New Mexico Coal

Coal has been mined in New Mexico since the 1850s, and the state continues to produce some coal. New Mexico has coal deposits around the state, but the San Juan Basin in the state's northwest is the largest region and the only area currently being mined. There are four active coal mines in the San Juan Basin, one underground and three surface operations. Two of those mines are operated as dedicated suppliers to neighboring coal-burning electricity generating plants. One plant and its associated mine are on the Navajo Reservation. Coal mined in New Mexico is either burned in the state or shipped by rail to Arizona for power generation. Coal-fired generation in New Mexico is projected to decline, with tightening federal air quality rules and with California utilities forced by renewables requirements to shed coal generation. Several older coal units are slated for shutdown in the next few years. New Mexico has almost 3% of estimated U.S. recoverable coal reserves, with most known reserves located in the San Juan Basin.

Four Corners Power Plant

Figure 22: Four Corners Power Plant

The Four Corners Generating Station is a coal-fired power plant located near Fruitland, New Mexico, United States, on property located within the Navajo Indian Reservation that is leased from the Navajo Nation. Four Corners Power Plant is one of the largest coal-fired generating stations in the United States. The five-unit, 2,040 MW complex is located on Navajo land in Fruitland, NM, about 25 miles west of Farmington. It was the first mine-mouth generation station to take advantage of the large deposits of sub-bituminous coal in the Four Corners region. The plant's five units generate 2,040 MW. The first unit went

online in 1963. The plant, operated by Arizona Public Service Co., provides power to about 300,000 households in New Mexico, Arizona, California and Texas.

- Units 1, 2 and 3 (170 MW Each)
  - Arizona Public Service: 100 percent
- Units 4 and 5 (750 MW Each)
  - Southern California Edison: 48 percent = 720 MW
    - In March 2012, the CPUC approved SCE's request to sell its 740 MW ownership in Units 4 and 5 by 2016.
    - On December 30, 2013, Arizona Public Services Company (APS) purchased SCE's interest in Units 4 and 5.
  - Arizona Public Service: 15 percent
  - El Paso Electric: 7 percent
  - PNM: 13 percent
  - Salt River Project: 10 percent
  - Tucson Electric Power: 7 percent
- By agreement with the U.S. EPA, APS will add selective catalytic reduction equipment on Units 4 and 5 by July 2018 and shut down Units 1-3.

San Juan Generating Station

Figure 23: San Juan Power Plant

- Located 15 miles northwest of Farmington, New Mexico.

- PNM operates the plant on behalf of the other owners.
- Units 1 and 2 (360 MW Each)
    - PNM: 50 percent
    - Tucson Electric Power: 50 percent
- Unit 3 (544 MW)
    - PNM: 50 percent
    - Southern California Public Power Authority (SCPPA): 41.8 percent that will expire in 2030;
        - This capacity is contractually allocated to five of its member utilities: Azusa, Banning, Colton, Glendale, and the Imperial Irrigation District (IID).
        - IID expects the term of this contract to go through at least 2022
        - other SCPPA members expects this supply to terminate after 2017
    - Tri-State Generation and Transmission Association: 8.2 percent
- Unit 4 (544 MW)
    - PNM: 38.5 percent
    - MSR Public Power Agency: 28.8 percent
        - These three are the Modesto Irrigation District (MID), Silicon Valley Power (SVP), and Redding Electric Utility
        - MID and Redding expected their energy supply would terminate after 2017
        - SVP expects this supply contract to continue.
    - City of Anaheim, has 10 percent of this unit through 2022.
    - City of Farmington: 8.5 percent
    - Los Alamos County: 7.2 percent
    - Utah Associated Municipal Power Systems: 7 percent
- New Mexico Environmental Department settlement to shut down Units 2 and 3 by December 31, 2017.
- EPA rules ($77 million-$750 million for different emission reduction technologies) for later divestiture, conversion to natural gas, or shutdown of remaining units.

Transmission Services

The western grid is interconnected through multiple Balancing Authorities or BA's. Each BA is responsible to balance the demand using internal resources and imports/exports from neighboring BA's throughout the Western interconnection. Each BA is also responsible to allocate transmission, interconnect new generators and maintain reliability at all time. Figure 3 below shows maps of all BA's in the west.

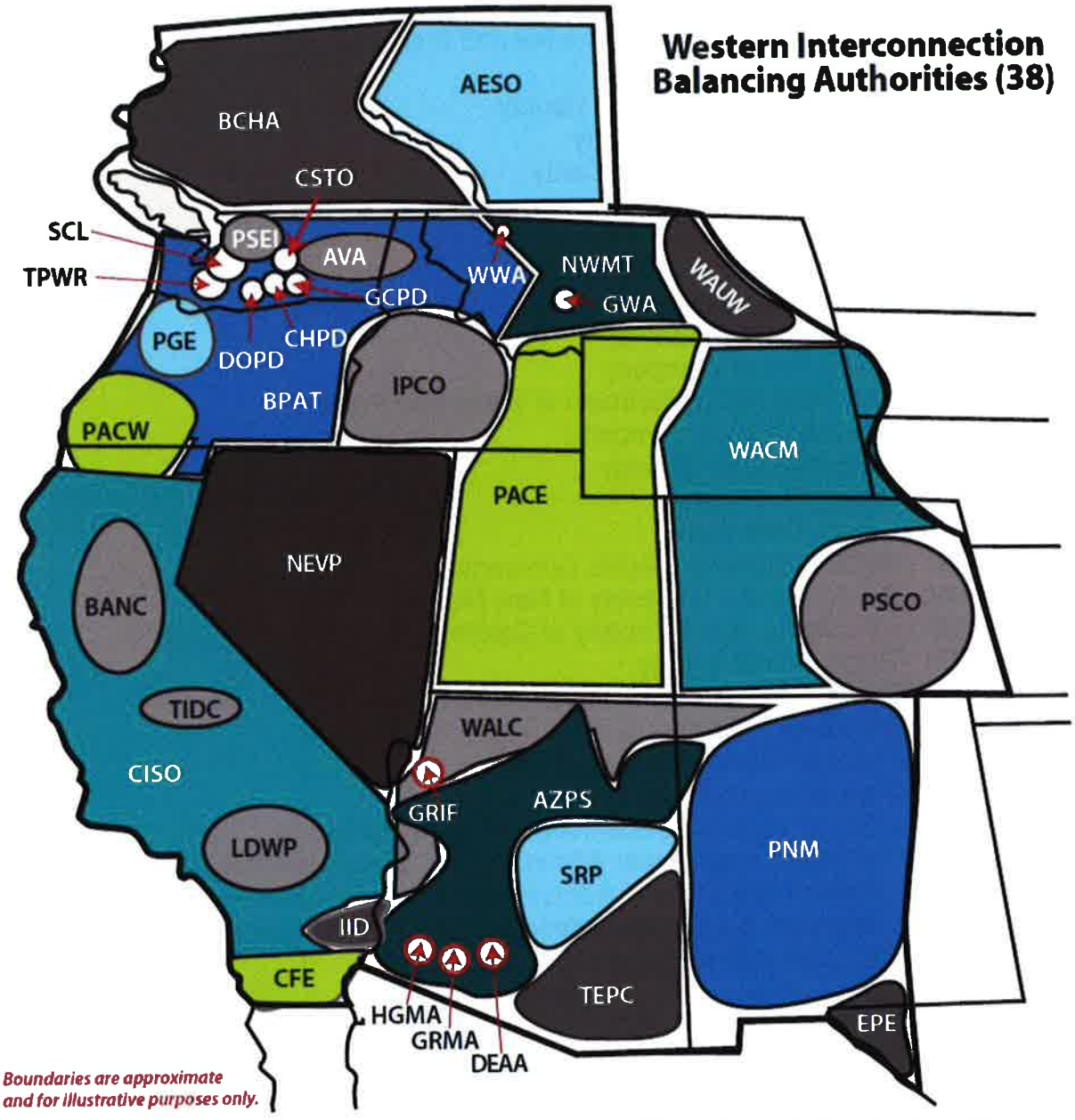


Figure 24: Various Control Areas or Balancing Authorities throughout the Western US

The following BA's are located in the west:

1. AESO - Alberta Electric System Operator
2. AVA - Avista Corporation
3. AZPS - Arizona Public Service Company
4. BANC - Balancing Authority of Northern California
5. BCHA - British Columbia Hydro Authority
6. BPAT - Bonneville Power Administration – Transmission
7. CFE - Comision Federal de Electricidad
8. CHPD - PUD No. 1 of Chelan County
9. CISO - California Independent System Operator
10. CSTO - Constellation Energy Control and Dispatch
11. DEAA - Arlington Valley, LLC
12. DOPD - PUD No. 1 of Douglas County
13. EPE - El Paso Electric Company
14. GCPD - PUD No. 2 of Grant County
15. GRIF - Griffith Energy, LLC
16. GRMA - Gila River Power, LP
17. GWA - NaturEner Power Watch, LLC
18. HGMA - New Harquahala Generating Company, LLC
19. IID - Imperial Irrigation District
20. IPCO - Idaho Power Company
21. LDWP - Los Angeles Department of Water and Power
22. NEVP - Nevada Power Company
23. NWMT - NorthWestern Energy
24. PACE - Paci_Corp East
25. PACW - Paci_Corp West
26. PGE - Portland General Electric Company
27. PNM - Public Service Company of New Mexico
28. PSCO - Public Service Company of Colorado
29. PSEI - Puget Sound Energy
30. SCL - Seattle City Light
31. SRP - Salt River Project
32. TEPC - Tucson Electric Power Company
33. TIDC - Turlock Irrigation District
34. TPWR - City of Tacoma, Department of Public Utilities
35. WACM - Western Area Power Administration, Colorado-Missouri Region
36. WALC - Western Area Power Administration, Lower Colorado Region
37. WAUW - Western Area Power Administration, Upper Great Plains West
38. WWA - NaturEnur Wind Watch, LLC

There are eleven control areas within the Arizona-New Mexico- Southern Nevada WECC Power area are:

- Arizona Public Service Company
- DECA, LLC – Arlington Valley
- El Paso Electric Company
- Gila River Maricopa Arizona
- Harquahala L. L. C.
- Imperial Irrigation District
- Nevada Power Company
- Public Service Company of New Mexico
- Salt River Project
- Tucson Electric Power Company
- Western Area Power Administration – Lower Colorado

Valley Electric Joins the CAISO Market

January 3, 2013 Valley Electric Transmission Association, LLC based in Pahrump, Nevada, became an ISO participating transmission owner. VEA is an electric cooperative that serves more than 17,000 members across a 6,849 square-mile service territory predominantly in southwestern Nevada along the California-Nevada border as well as parts of Mono and Inyo counties in California. The small network expansion strengthens reliability in the corner of the ISO grid that overlaps with Nevada. It will also create seamless access to Nevada renewable resources seeking entry to the California market, adding competition and liquidity. While the ISO transmission access charge may increase slightly, the ISO grid management charge will decrease slightly.

Figure 25: VEA Added to the CAISO Market

Energy Imbalance Market

The California ISO received approval from Federal Energy Regulatory Commission (FERC) to expand its real-time energy imbalance market (EIM) beyond state borders, with PacifiCorp and NV Energy slated to become the first to join. The expanded market was set to begin Oct. 1. 2014. NV Energy, which sits between PacifiCorp's two main service regions, plans to join the market by October 2015 under an implementation agreement approved by FERC.

PacifiCorp and NV Energy expect economic efficiencies, improved renewable integration and increased reliability from their collaboration with CAISO. With the expansion, the EIM

would serve most of Nevada, Utah and Wyoming, along with California and portions of Washington, Oregon and Idaho.

California's EIM will allow participants to buy and sell energy in five-minute increments. Supporters say the market will improve congestion management and situational awareness as well as reduce the costs of balancing the increasing volume of variable resources in the West. The Western Electricity Coordinating Council estimates renewable energy will more than double from 2010 levels by 2022.

PacifiCorp serves about 1.8 million customers in two BAs: PacifiCorp East (Idaho, Utah and Wyoming) and PacifiCorp West (Washington, Oregon and California). NV Energy, the product of the 1999 merger of Nevada Power Co. and Sierra Pacific Power Co., provides electricity and natural gas to 1.3 million customers in Nevada. NV Energy was acquired by PacifiCorp's parent, Berkshire Hathaway Energy, last year.

The commission also ordered CAISO to make informational filings on the presence of structural market power in PacifiCorp BAs due to intertie transmission limits. The order also requires the ISO to create a mechanism for EIM resources to avoid being dispatched into California, where they would be liable for the state's greenhouse gas regulation costs. PacifiCorp's transmission customers will have the option of bidding into the EIM or continuing to serve their loads through self-supply or bilateral trades. Transmission and generator interconnection customers who do not participate in the EIM will be billed based on the locational marginal prices resulting from the EIM to settle imbalances. PacifiCorp will use firm transmission rights voluntarily offered by transmission customers to enable EIM transfers between its BAs and CAISO.

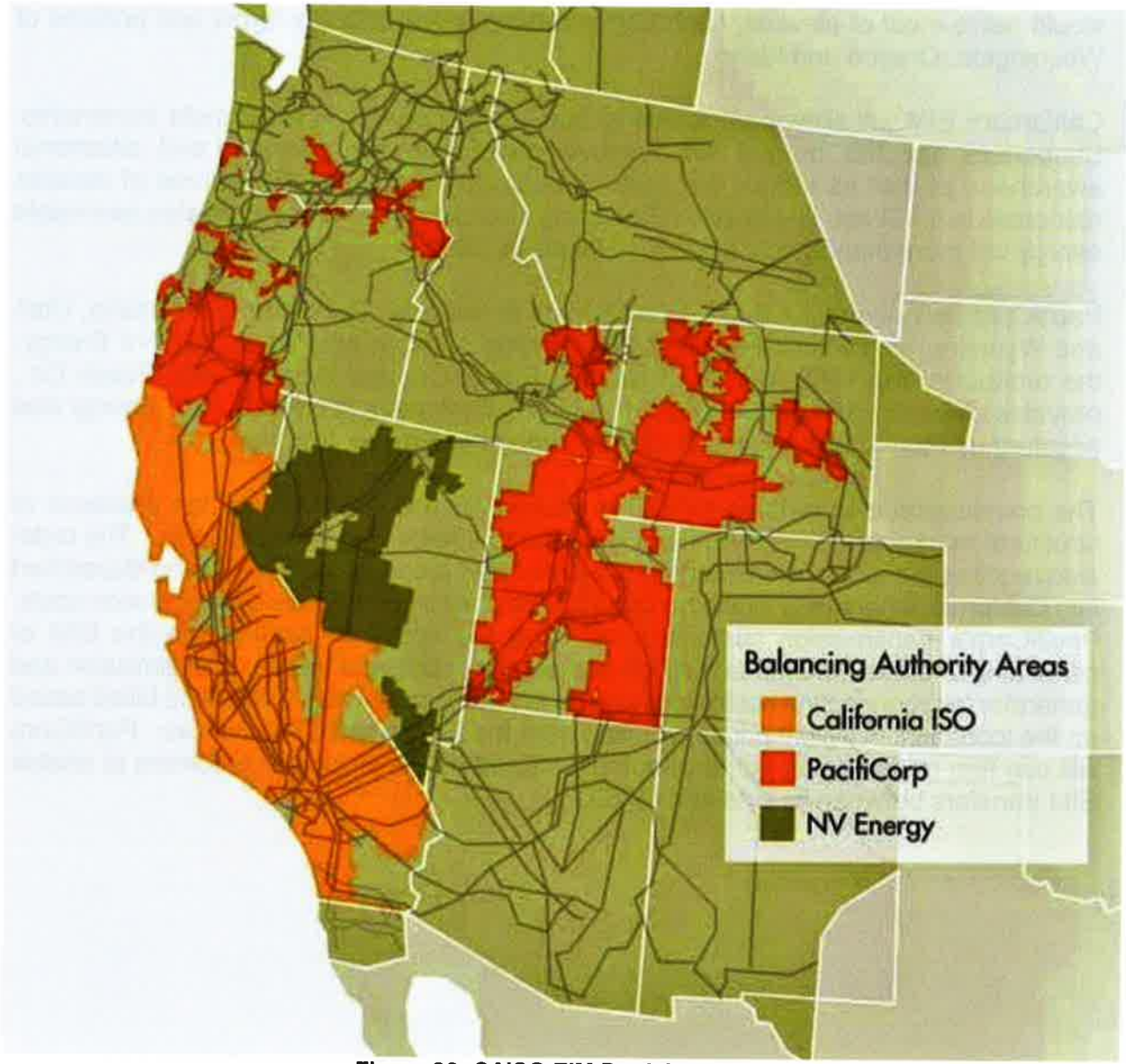


Figure 26: CAISO EIM Participants

Transmission Service into California

The Four Corners substation is located within the Public New Mexico (PNM) balancing authority. There are many paths that can be utilized to transfer energy into California. Each path has a specific cost of transmission. Transmission service costs increase when energy passes through multiple balancing authorities. For example, a transmission path originating in PNM that transfers into California through Arizona Public Service (APS) territory will be assessed wheeling fees by PNM and APS for such transactions.

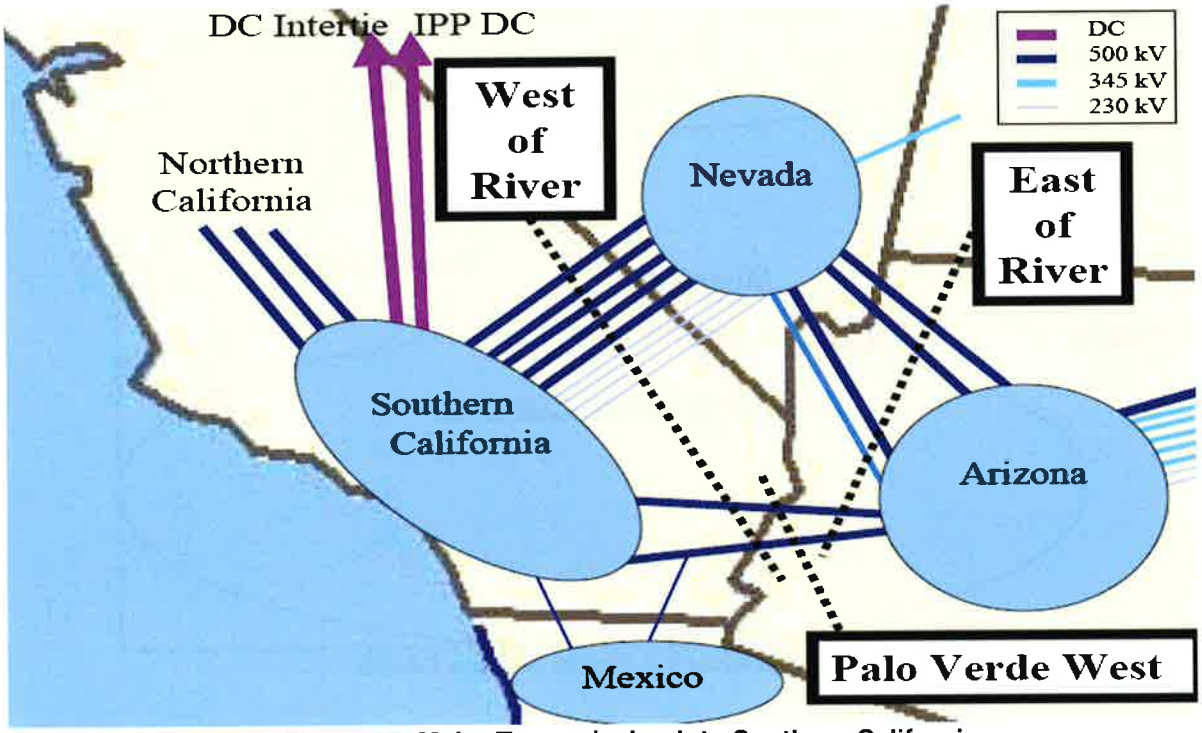


Figure 27: Major Transmission into Southern California

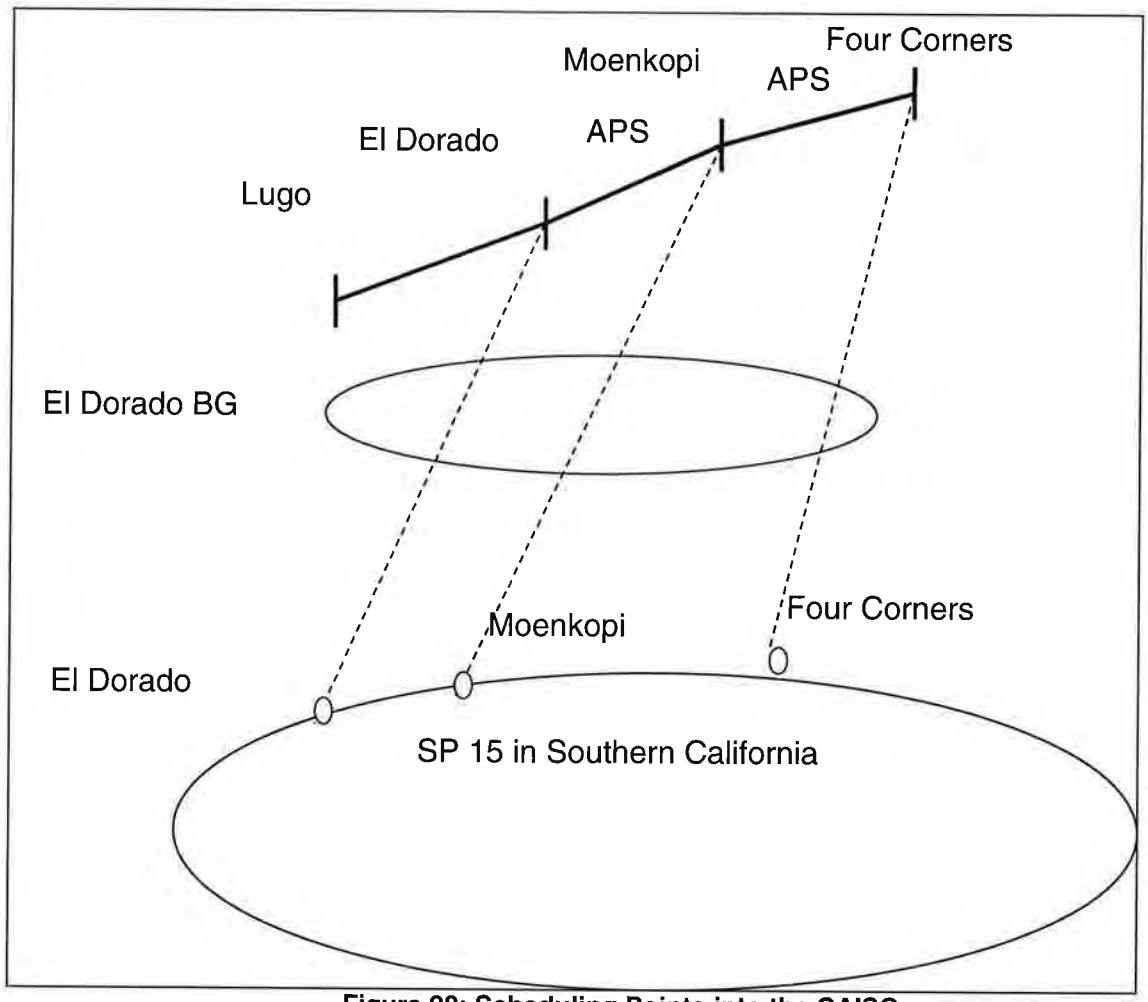


Figure 28: Scheduling Points into the CAISO

Transmission congestion contributes to potential resource constraints. Congestion on the electricity grid may affect the ability to deliver electricity where it's needed in summer. This congestion results largely from lack of transmission upgrades. During peak demand periods on a very hot summer day, California may face resource constraints.

The following is a list of the most effective and least cost paths:

- California Independent Systems Operation (CAISO) has transmission rights all the way from Four Corners to California. However, transmission rights can only be obtained through yearly transmission auctions conducted by the CAISO.
- APS has transmission services through their Open Access Same Time Information System (OASIS) site that could be purchased for multi-years and wheel energy from Four Corners to Palo Verde.
- Transmission services can be obtained from Four Corners through Western Area Power Association Lower Colorado (WAPA LC) and into Nevada Power and then delivered to California at Mead. This could be obtained from a single OASIS under a multiple year reservation. These transactions require wheeling energy through WAPA LC and Nevada power systems.
- Transmission services can be obtained from Four Corners through WAPA LC and into Nevada Power and then delivered to California Los Angeles Department of

Water and Power (LADWP) at Victorville and then from LADWP into CAISO. This could be obtained from a single OASIS under a multiple year reservation. This transaction requires wheeling energy through WAPA LC, LADWP and Nevada power systems and could be a pricy option.

Available Transfer Capability (ATC) – OASIS Review

Transmission paths are defined by scheduling Point of Receipt (POR) to Point of Delivery (POD) for each Transmission Provider (TP). In the case of Lucky Corridor, the assumed PNM Point of Delivery (POD) is on the Four Corners 345 kV bus as the initial, scheduling POR for the transmission path to California.

Ultimately, the power is delivered to the off-taker at an agreed upon POD, the "custody transfer point", specified in the PPA. The objective is to minimize the number of "wheels" and intervening TSPs and as a result, their respective transmission service related costs.

The transmission customer secures the rights to use any intervening transmission by submitting a Transmission Service Request (TSR) to each Transmission Service Provider (TSP), along the Transmission Path, POR to the POD. The TSP may have Available Transfer Capability (ATC) along this path, and if so may offer this capacity for sale on its OASIS site. If ATC is available, the TSP may immediately enter into a Transmission Service Agreement (TSA) with the customer, a contract for the reserved right to use this capacity. However, dependent upon operational circumstances, the TSP may also determine the need to perform a System Impact Study (SIS) to validate that it does indeed have this capacity to offer. The SIS process and fees are separate and distinct from the TSR application related process and fees.

There are 3 voltage levels at the Arizona Public Service (APS) Four Corners substation, 500 kV, 345 kV and 230 kV. The Point of Delivery (POD) proposed for the Lucky Corridor project is FOURCORNE345 (Four Corners Substation on the 345 kV bus).

Four Corners to California Transmission Paths:

Most direct "Posted" Transmission Path

- FOUR CORNERS 500 (FC500) directly into CAISO

Arizona Public Service (APS) owns and sells capacity across its 345 kV to 500 kV Transformer at FC. This transformation may constitute an intervening APS Transmission Path, and wheeling charge, from the 2345 kV system at FC to the 500 kV system side

Alternative Transmission Paths

- Four Corners 345 to Mead 230 to either the CAISO or LADWP, with APS as the intervening Transmission Provider
- Four Corners 345 to Mead 500 to either the CAISO or LADWP, with APS as the intervening Transmission Provider
- Four Corners 345 to Westwing to the CAISO, with APS as the intervening Transmission Provider
- Four Corners 345 to Marketplace to LADWP, with APS as the intervening Transmission Provider
- Four Corners 345 to Palo Verde to the CAISO with APS as the intervening Transmission Provider
- Four Corners 345 to Palo Verde to CAISO with TEPC as the intervening Transmission Provider

In reviewing the Available Transfer Capability (ATC) offered by all transmission providers with transmission service emanating from Four Corners 345 kV Points of Receipt (POR) for this update, it was discovered that only two (2) transmission service providers had any current ATC offerings posted on their respective OASIS sites. These were Arizona Public Service (APS) and Tucson Electric Power Company (TEPC).

Figure 29: Major Transmission Lines (Four Corners/Arizona to California)

Transmission Paths and ATC – Current OASIS Offerings

Current ATC MW offerings from OATI OASIS as of May 28, 2015 by Transmission Provider.

The following ATC MWs reflect these *present,* yearly (long term) Firm Point to Point (PTP) service offerings by the respective TSPs.

Path Options - Four Corners 345 to:	Sink California BA	Transmission Service Provider	ATC (MW)	Notes
Four Corners 500* (*CAISO Market Scheduling Point)	CAISO	APS (across 345 Transformer to FOUR CORNERS 500) to CAISO	630 MW 2015 - 2024	*Market Transmission Service @ Four Corners 500 into California via CAISO Day-Ahead Market (DAM)
Mead 230	CAISO and LADWP	APS	64 – 120 MW commencing 2023	Three APS Transmission Path Options
Mead 500	LADWP	APS	64 – 120 MWs commencing 2023	Three APS Transmission Path Options
Westwing	CAISO	APS	64 – 120 MWs commencing 2023	Three APS Transmission Path Options
	CAISO	TEPC	13 MWs 2105 - 2016	
Marketplace	LADWP	APS	64 – 120 MWs commencing 2023	Three APS Transmission Path Options
Palo Verde 500	CAISO	APS	64 – 120 MWs commencing 2023	Three APS Transmission Path Options
		TEPC	13 MWs 2105 - 2016	

Table 20: ATC MWs reflect these present, yearly (long term) Firm Point to Point (PTP) service offerings by the respective TSPs

Note: A review of each Transmission Provider's OASIS site at any given time may lend some perspective as to the potential availability of any residual transmission capacity along the transmission path sought, POI to POD. However, the actual determination of any Available Transmission Capacity is subject to the Transmission Provider's System Impact Study results. ATC can ONLY be definitively determined, after a formal TSR is submitted and any associated SIS studies are performed.

Transmission Service related Charges by Transmission Provider (TP)

The two primary transmission service related costs are the Transmission Service or "Wheeling" cost and the Transmission Loss charge. The applicable OATT schedule for Point to Point Firm transmission service is Schedule 7. A Transmission Provider's losses may be shown in OATT Tariff section 15.7, or more typically in a Business Practice Standard or rate schedule. Transmission Losses may be paid back either physically by "scheduling back" the MW loss obligation to the service provider or by settling losses financially, at the transmission service provider's rate, typically an indexed price, documented in their OATT.

Table 1 provides a recap of the three Transmission Service Provider's service related Wheeling and Loss rates as of June 1, 2015.

Transmission Service Provider	Service Type	Rate	Units	Loss %
APS	Annual PTP Firm	$ 36,130	$/MW-year	2.50 %
PNM	Annual PTP Firm	$29,990	$/MW-year	3.27%
TEPC	Annual PTP Firm	$27,111	$/MW-year	3.30%

Table 21: Transmission Wheeling Rates for Intervening TSPs

PNM Transmission Scheduling Map

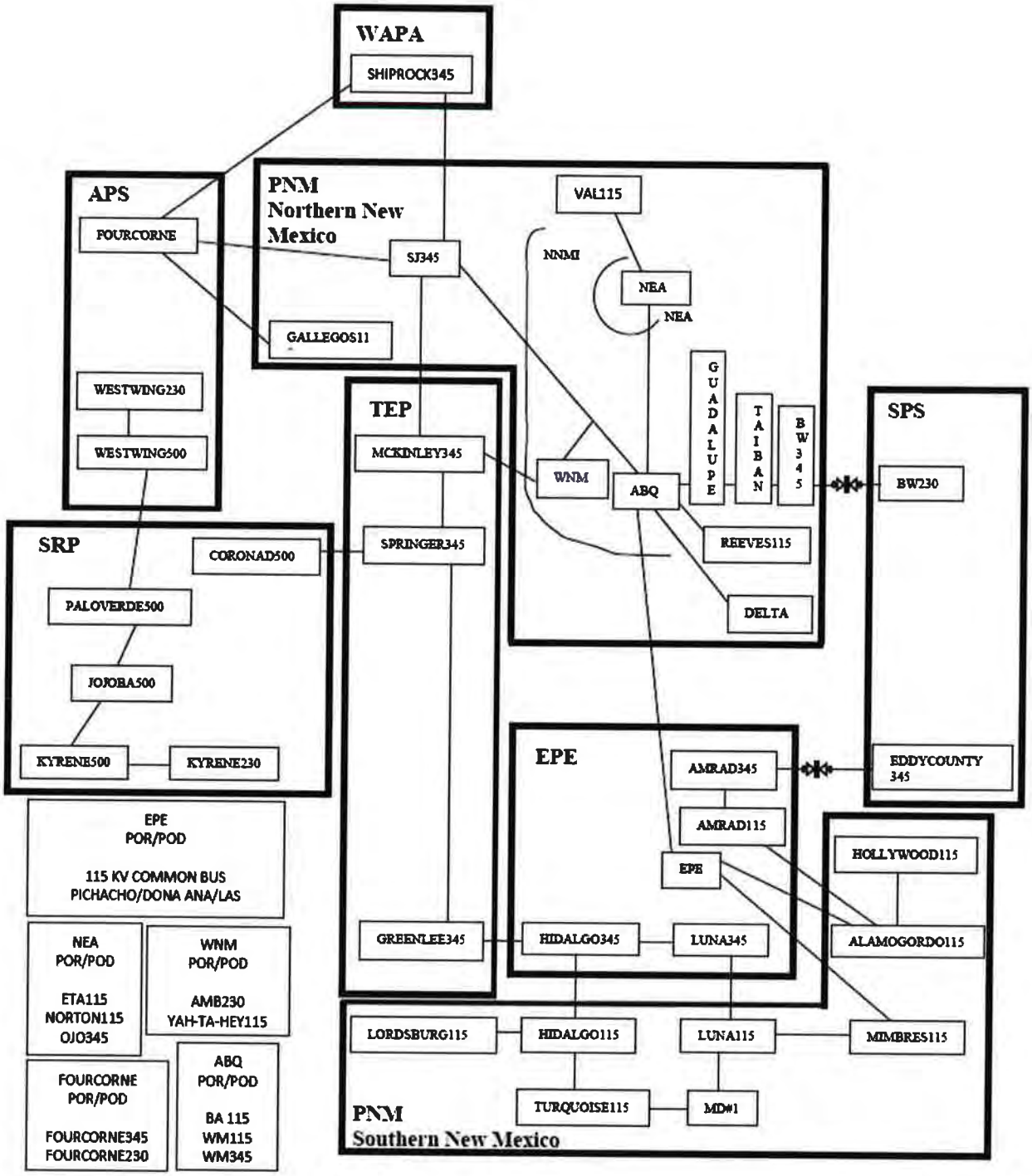


Figure 30: PNM Transmission Scheduling Map California

[1] PUBLIC SERVICE COMPANY OF NEW MEXICO (PNM) "Determination and Posting of Total Transfer Capability (TTC) & Available Transfer Capability (ATC) Prepared By: Transmission and Operations Department" January 6, 2014.
http://www.oatioasis.com/PNM/PNMdocs/2014_atcdoc-pnm1-posted.pdf

Transmission Upgrades

Investment in new transmission infrastructure in the United States by investor-owned utilities has increased substantially over the past 15 years, but varies significantly across regions. Investor-owned utilities have added new transmission for several reasons, including:

- Ensuring grid reliability,
- Relieving transmission congestion,
- Replacing aging equipment, and
- Delivering electricity from new renewable generators, often located far from population centers.

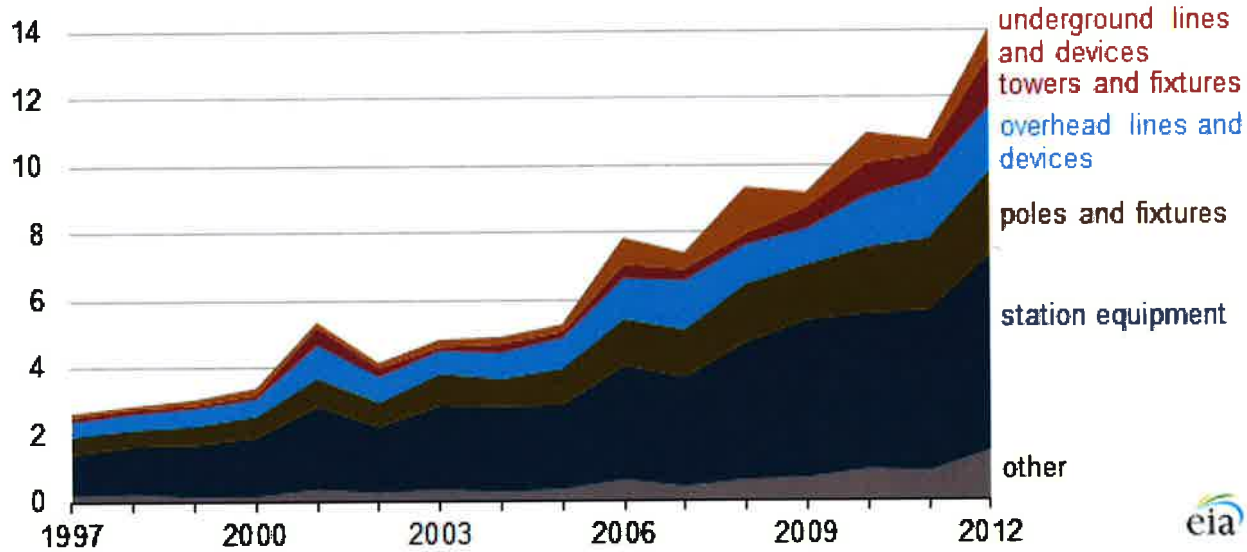


Figure 31: Dollars spent by Investor Owned Utilities on Transmission Infrastructure (1997-2012) (Billions of 2012 dollars)

Transmission infrastructure is critical for the shift in supply mix as the regional renewable energy sources need access to the markets.

Since 2009, there has been an increase in transmission expansion in WECC, mostly in Southern California. Between 2003 and 2012, investor-owned utilities spent almost $13 billion to expand transfer capability into Southern California, to ease transmission constraints within the state, and to connect to renewable resources that help meet California's RPS target of 33% of its electricity provided by renewable sources by 2020.

The largest of these upgrades to California's transmission infrastructure is the Tehachapi Renewable Transmission Project, which consists of 250 miles of 500 kV and 220 kV transmission lines to support interconnection of up to 4,500 MW of mostly renewable generation. The $2.9 billion project began construction in 2012 and is expected to be completed by 2016.

California consumes more electricity than it produces, and has the most aggressive RPS requirements. This creates an even greater need for expansion of Transmission infrastructure

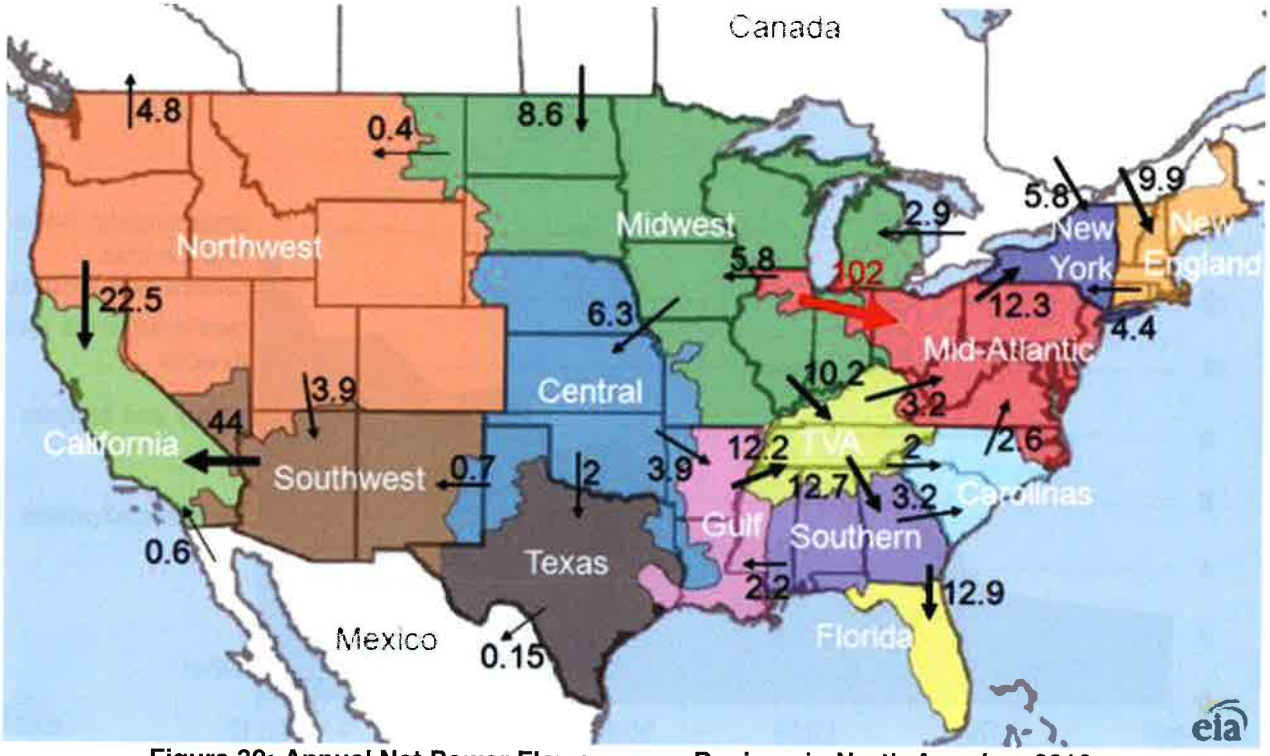


Figure 32: Annual Net Power Flows among Regions in North America, 2010

Updates to the original list of Proposed Transmission Additions

Updates to the original list of Proposed Transmission Additions in the Southwest and Southern California. Of most of the original 500 kV transmission projects in the original study, most have either come online; the remaining projects listed will be online in the next few years. Only three of the original projects have slowed down in their development: Stirling Mt. Northwest-Vista, NV, Centennial II (Harry Allen - Eldorado), and Four Corners to Marketplace.

	Proposed AZ/ NM/ SNV Projects >50 Miles	Voltage	Original Status	Original Estimate
A	Harry Allen, NV to Mead	500 kV	Underway	2007
B	Stirling Mt. Northwest-Vista, NV	230 kV	Planning	2007
C	Palo Verde-TS5 (Sun Valley)	500 kV	Permitted	2009
D	Palo Verde to Southeast Valley (Phoenix Area)		3 Parts	2011
E	Hassayampa to Pinal West	500 kV	Underway	2008
F	Pinal West to Santa Rosa	500 kV	Underway	2008
G	Santa Rosa to Browning	500 kV	Permitted	2011
H	Centennial II (Las Vegas, NV area)	500 kV	Planning	2011
I	TS5 (Sun Valley) -Raceway, AZ	500 kV	Planning	2012
J	Pinal West - Tortolita, AZ	500 kV	Planning	2012
K	Palo Verde-North Gila	500 kV	Planning	2012
L	Shiprock, NM to Marketplace, NV	500 kV	Permitted	2010/ 13

Table 22: Original Proposed Transmission Project Greater that 500kV

	Proposed AZ/ NM/ SNV Projects >50 Miles	Updated Status	In Service	Notes
A	Harry Allen, NV to Mead	Completed	Prior to 2011	48 mi
B	Stirling Mt. Northwest to Vista, NV	last update 2012	N/A	
D	Palo Verde to Southeast Valley (Phoenix Area)	Path	Jun-14	150 mi, $450M
E	Hassayampa (Palo Verde) to Pinal West	Completed	Oct-08	100 mi
F, J	Pinal West to Santa Rosa (Duke)	Completed	Jun-14	Remaining
G, J	Santa Rosa (Duke) to Pinal Central	Completed	Jun-14	50
G	Pinal Central to Browning	Completed	Jun-14	Miles
	Palo Verde to Delaney to Sun Valley-Morgan-Pinnacle Peak	Path		
C	Palo Verde to Delaney	In Construction	Est 2016	
C	Delaney to Sun Valley	In Construction	Est 2016	
I	Sun Valley to Morgan (Raceway/ Delaney)	In Construction	Est 2018	
	Morgan (Raceway/ Delaney) to Pinnacle Peak	Completed	Prior to 2011	26 mi
J	Pinal Central to Tortolita	In Construction	Est 2016	40 mi
K	Palo Verde to North Gila (HANG2)	Completed	2015	110 mi, $200M
H	Centennial II (Harry Allen - Eldorado)	Planning	Est 2020	60 mi
	Four Corners to Marketplace	Planning	No update	

Table 23: Original Proposed Transmission Project Updated Status

One observation from the previous table is that transmission projects, even small, take longer than estimated to construct. Most of these projects took about five years longer to compete than originally estimated.

In addition, to the specific transmission projects listed in the tables above, there are many large transmission projects under consideration which increase the ability to wheel energy in California. As with the transmission projects previously discussed some of these projects have slowed down and lost traction, others have been progressing.

Proposed Transmission Projects Orignal Data

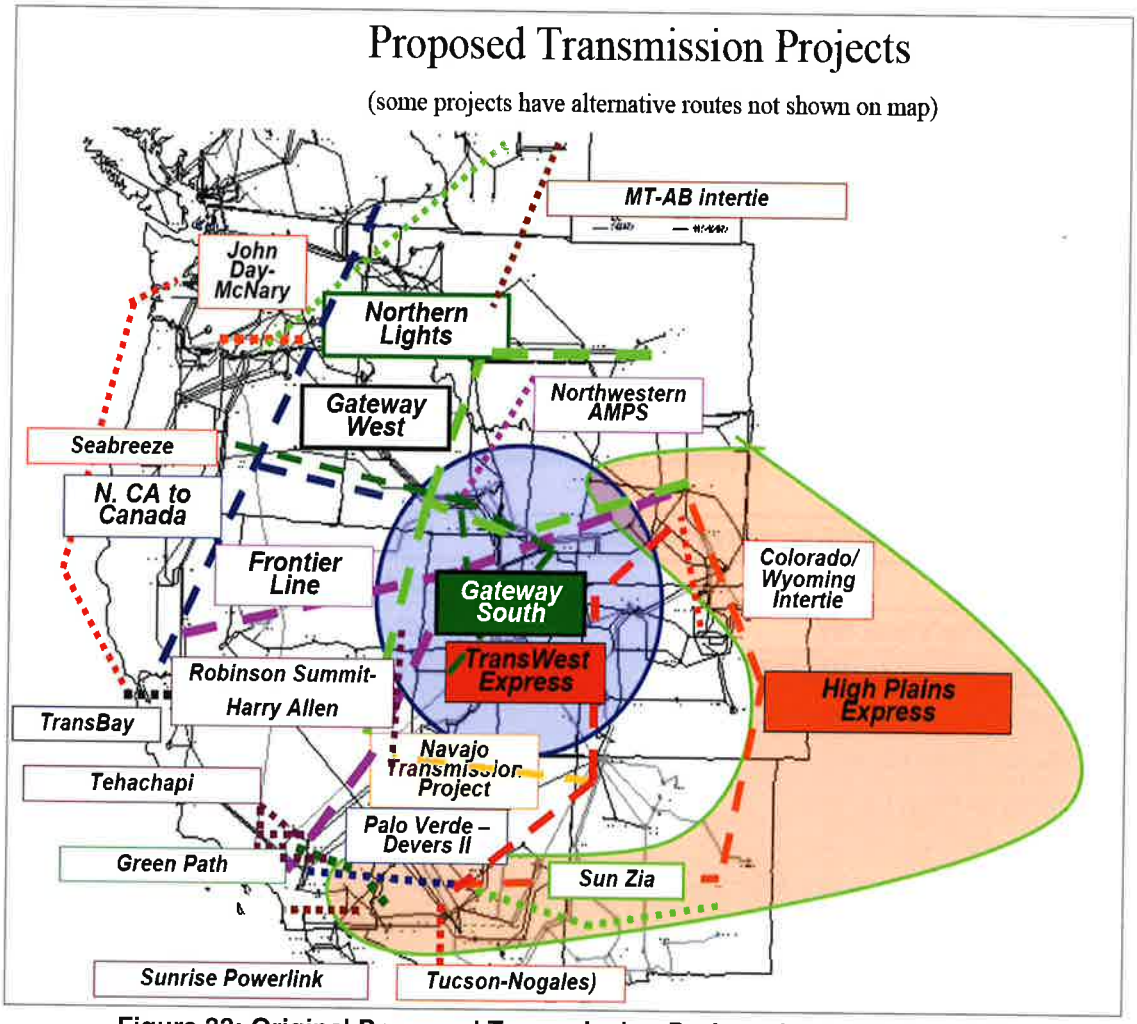


Figure 33: Original Proposed Transmission Projects in the Western US

WECC's Current Proposed Transmission Projects

Figure 34: WECC's Current Proposed Transmission Projects

One major difference between the two figures in comparing the proposed transmission projects is the numbers of projects have been reduced; either the project was competed and is in service, the project is on hold, or the project is cancelled. The table below has the status of each of the original projects. It is important to note that some of the projects that are included in WECC's diagram above have not been active for a number of years.

Name	Voltage (kV)	Capacity (MW)	Miles	Cost (Billion)	Start	End	Inservice	Status
One Nevada, Robinson Summit - Harry Allen	500 AC	800	231	0.51	Ely, NV	Las Vegas, NV	Jan-14	Operational
Palo Verde - Devers II	500/220 AC	3,200	150	0.9	Colorado River Sub, CA	Valley Sub, CA	Sep-13	Operational
Sunrise Powerlink	500/230 AC	1,000	117	1.9	Imperial Valley Sub, CA	Sycamore Canyon Sub, CA	Jun-12	Operational
John Day - McNary	500 AC	495	79	0.2	McNary Sub, OR	John Day Sub, WA	Feb-12	Operational
Transbay	200 DC	400	53	0.505	Pittsburg, CA	San Francisco, CA	Nov-10	Operational
Gateway South	500	1,500	400	2.8	Aeolus Sub, WY	Clover Sub, UT	2024	In progress
Gateway West	500/230 AC		1,100	A	Windstar Sub Glenrock, WY	Hemingway Sub Melba, ID	2024	In progress
Zephyr Transmission Project	500 DC	3,000	950	3.5	Chugwater, WY	Las Vegas, NV	2023	In progress
Centennial West Clean Line	600 DC	3,500	900	2.5	northeastern, NM	southern, CA	2020	In progress
SunZia	500 AC	4,500	515	2	(near) Corona, NM	Pinal Central Sub, AZ	2020	In progress
Western Spirit Clean Line	345 AC	1,500	200	0.4	Guadalupe, NM	Rio Puerco, NM	2018	In progress
North Gila - Imperial Valley # 2 Transmission Line	500 AC	2,400	85		North Gila Sub, AZ	Imperial Valley Sub, CA	2017	In progress
The Southline Transmission Project	345 AC	1,000	240	0.7	Afton, NM	Apache, AZ	2017	In progress
Transwest Express	600 DC	3,000	725	3	So. Central WY	Marketplace Sub, NV	2017	In progress
Tehachapi	500/220 AC	4,500	250	2.9	Windhub Sub, CA	Mira Loma Sub, CA	2016	In progress
High Plains Express	500 AC	3,500	1,300	B	Windstar, WY	Palo Verde, AZ	TBD	Last Update 2011
Colorado Wyoming Intertie	345 AC	850	180	0.3	Laramie River, WY	Pawnee, CO	TBD	Last Update 2011
Tucson-Nogales	345 AC	500	65	0.07	Tucson, AZ	Nogales Mexico	Unknown	Last update 2008
Navajo Transmission Project	500 AC	3,000	478	0.35	Four Corners Sub, NM	Marketplace Sub, NV	Unknown	Last Update 2008
Seabreeze West Coast Cable Project	500 DC	1,600	650		Alston WA	San Francisco, CA	Unknown	Last Update 2007
Triton HVDC Sea Cable Project	500 DC	1,600	1,000		Ketchikan, AL	San Francisco, CA	Unknown	Last Update 2007
Frontier Line							Unknown	Last Update 2001
Northern California to Canada	500/230 AC						Unknown	Indefinite hold
Northern Lights	500 DC	3,000		2	Ft. McMurray, AB	Celilo, OR	Unknown	Indefinite hold
GreenPath			85	0.8			Cancelled	Cancelled

A = Part of 6.1 for all Gateway Projects East, West, and Central

B = 3.5 single circuit line, 5.5 one double circuit line

Table 24: Status of the Major Transmission Projects in WECC

Interstate and Merchant Transmission Projects in the WestConnect 2015 Plan

Name of Project	Line Miles	Voltage	From	To
Centennial West Clean Line	900	500 kV DC	New Mexico	California
Chinook Project	1000	500 kV DC	Montana	Nevada
Harcuvar Transmission Project	90	230 kV	Arizona	Arizona
High Plains Express Initiative	2500	500 kV	Wyoming	Arizona
Long View Energy Exchange	90	500 kV	Arizona	Arizona
Lucky Corridor Project	130	345 kV	New Mexico	New Mexico
North Gila – Imperial Valley #2 Project	85	500 kV	Arizona	California
Southline Transmission Project	240/120	345 kV/230 kV	New Mexico	Arizona
Southwest Intertie Project	339	500 kV	Idaho	Nevada
SunZia Southwest Transmission Project	515	500 kV	New Mexico	Arizona
TransWest Express	725	600 kV DC	Wyoming	Nevada
Tres Amigas Project	22	345 kV	New Mexico	New Mexico
Western Spirit Clean Line	125	345 kV	New Mexico	New Mexico
Wyoming-Colorado Intertie	180	345 kV	Wyoming	Colorado
Zephyr Project	850	500 kV DC	Wyoming	Nevada

Figure 35: WestConnect 2015 Transmission Plan

Conclusion

This report provided a high level description of the transmission system from New Mexico to California, it outlined the various elements that drive the transmission availability, and it described the various paths that could be utilized to wheel energy to California along with the potential wheeling fees to cross multiple balancing authorities.

Although, it may appear that there are unnecessary complexities in transacting through the Southwest to California, ZGlobal has the history, the institutional knowledge to minimize transaction or wheeling charges, and can provide technical assistance to obtain the optimum and most reliable transmission paths into California.

ZGlobal believes that this report verifies the demand, both today and in the coming years, at Four Corners and other Western hubs for electricity produced from renewable resources and gas. Because of statutory clean energy requirements, there is a need for

new transmission from renewable resource and gas-producing areas to load centers. The Lucky Corridor project accesses these clean energy resources, improves system reliability by replacing an obsolete 115 kV line in that resource zone. In addition, the Lucky Corridor Project transports energy toward an area that will have increasingly available transmission capacity into the LA Basin load center, due to renegotiation of power supply contracts and scheduled expiration of contracts with old coal plants.

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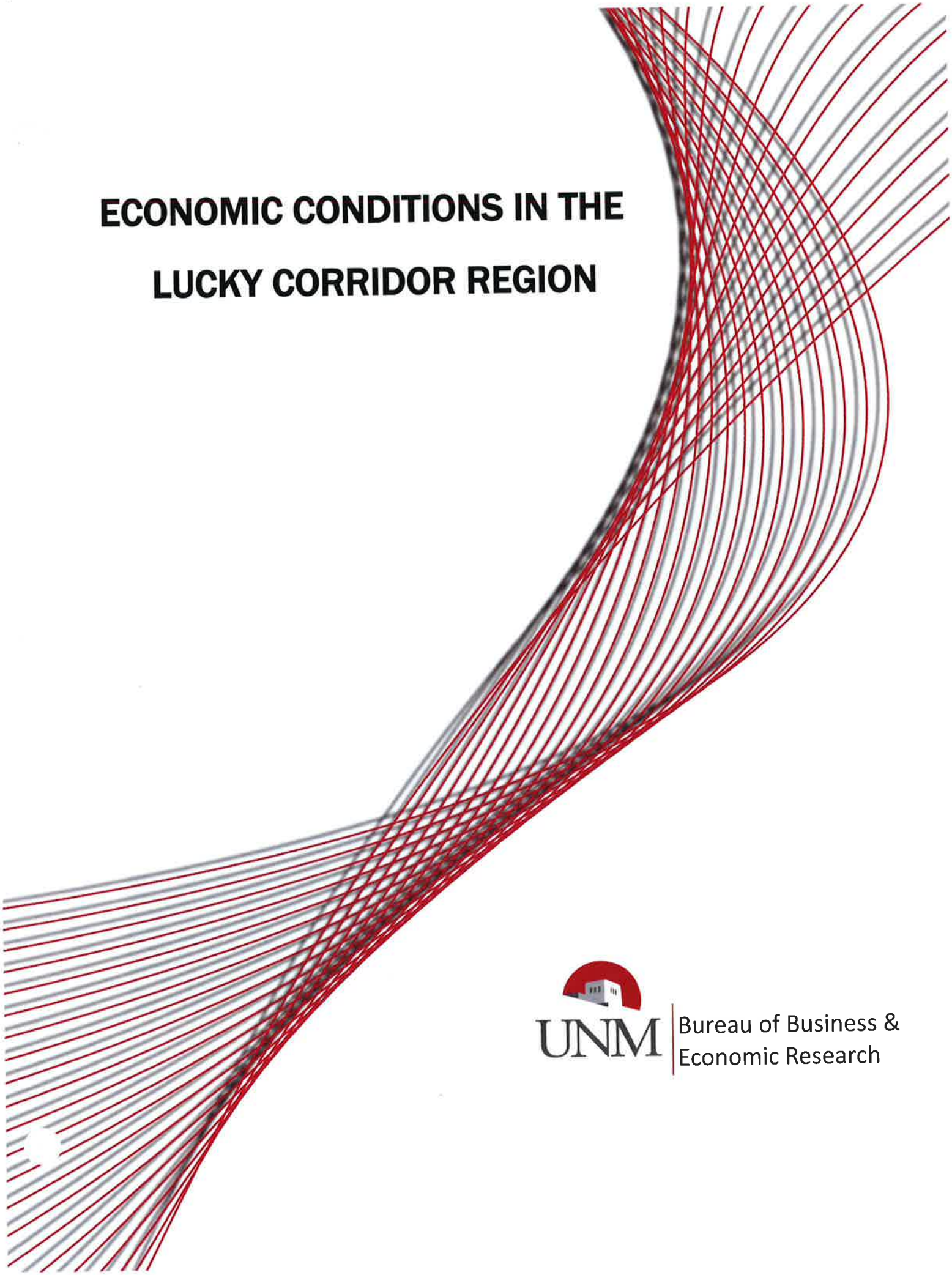
ECONOMIC CONDITIONS IN THE LUCKY CORRIDOR REGION



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ECONOMIC CONDITIONS IN THE LUCKY CORRIDOR REGION

Doleswar Bhandari, Ph.D.

February 22, 2016

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Introduction

Although the US economy continues to experience moderate post-recession expansion, the New Mexico economy continues to sputter. While the state benefited for several years from rapid employment growth in mining due to high oil prices, recently falling prices have taken a toll. Somewhat filling the void has been the healthcare sector, which benefited from the Affordable Care Act (ACA), and the low wage leisure and hospitability sector. However, few other employment sectors have shared the load. This is unlike the US economy, which has experienced consistent expansion in most sectors of the economy (other than mining), including key sectors such as professional and business services; New Mexico has seen no such acceleration.[1] Meanwhile, overall personal income growth has been kept afloat largely by federal transfers into the state with much of the gain due to dollars flowing in to finance portions of the ACA.[2] However, because of slow employment growth, wage and salary growth has been weak, which has worked to keep the rate of personal income growth slow.

Households in New Mexico receive a relatively low median income. According to the US Census 2014 Small Area Income and Poverty Estimates (SAIPE), out of all of the states and the District of Columbia, 42 states had a higher household median income than New Mexico.[3] Given that a relatively large portion of the New Mexico population receives government income supplements,[4] that ranking would likely fare worse if income supplements were not included. In addition, the state of New Mexico is one of the poorest as it has the 2nd highest rate of poverty of all of the states and the District of Columbia.[5]

As bad as the situation is in New Mexico, the situation in the Lucky Corridor region is far worse.[6] Year-over-year employment growth in the region has lagged behind both New Mexico and the US in almost every month (except June and July 2015) since January 2014 while year-over-year unemployment growth has been higher than the US in almost every month and has generally tracked New Mexico during the same period. Median income in the region is significantly lower than New Mexico and the US, while poverty rates (for all age cohorts) are higher.[7] Likely due in part to the lack of good-paying jobs, individuals in age cohorts that are most likely to receive relatively high salaries have migrated out of the area. Specifically, the 30 to 39 and 40 to 49 year old age cohorts each experienced negative growth in the neighborhood of -7.1% and -18.0% respectively in the Lucky Corridor region from 2010 to 2014, shrinking significantly faster than the New Mexico or

[1] Bureau of Labor Statistics, Current Employment Statistics & Quarterly Census of Employment and Wages.
[2] Bureau of Labor Statistics, Current Employment Statistics & Quarterly Census of Employment and Wages; Bureau of Economic Analysis.
[3] 2009 Small Area Income and Poverty Estimates.
[4] Bureau of Economic Analysis, Regional Economic Accounts, State Quarterly Personal Income, New Mexico
[5] The only state that is consistently poorer is Mississippi.
[6] The Lucky Corridor region includes Colfax, Mora, San Miguel, and Union Counties in New Mexico.
[7] US Census Bureau, 2014 Small Area Income and Poverty Estimates

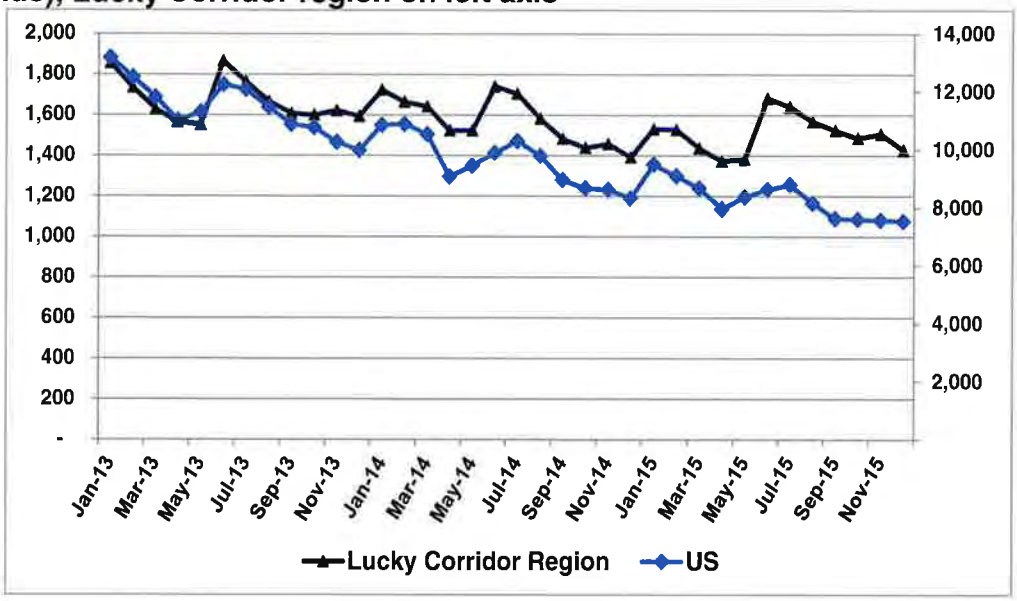
US rates, according to US Census Bureau, Population Division, Annual Estimates of the Resident Population estimates. This shows that these population cohorts are shrinking faster than the 2000 to 2010 period. This trend of out-migration is likely to continue until employment becomes available that retains local workers or attracts new ones.

This report is organized into three parts which compare the Lucky Corridor region with the US and the state of New Mexico: Employment and unemployment conditions, population distribution and poverty, and income and housing.

Employment & Unemployment

Figure 1 presents the number of unemployed in Lucky Corridor region and the US. Unemployment in the Lucky Corridor region steadily decreased from 1,856 in January 2013 to 1,724 in January 2014 (7.1% decline) to 1,531 in January 2015 (11.2% decline). By the end of December 2015, the unemployment in the region reached to 1,425 which was 2.3% higher than the previous year. However, the rate of decline in unemployment is significantly slower than the national rate. US unemployment decreased from 13.1 million in January 2013 to 10.9 million in January 2014 (24.3% decline) to 9.5 million in January 2015 (2.3% decline). By the end of December 2015, the unemployment in the US reached to 7.5 million (20% decline from January 2015).

Figure 1 Number Unemployed January 2013 to December 2016 – US on right axis (in thousands), Lucky Corridor region on left axis



Source: Bureau of Labor Statistics, Local Area Unemployment Statistics

The number of unemployed fell in Lucky Corridor region to 1,424 by December 2015; however, this fall is slightly precipitated by a 250 person drop in the civilian labor force (down 1.1% over the period). During the same period, the number of US unemployed fell to 7.5 million (2.1% decline) as US civilian labor force added 1.7 million jobs (up 1.1% over the period).

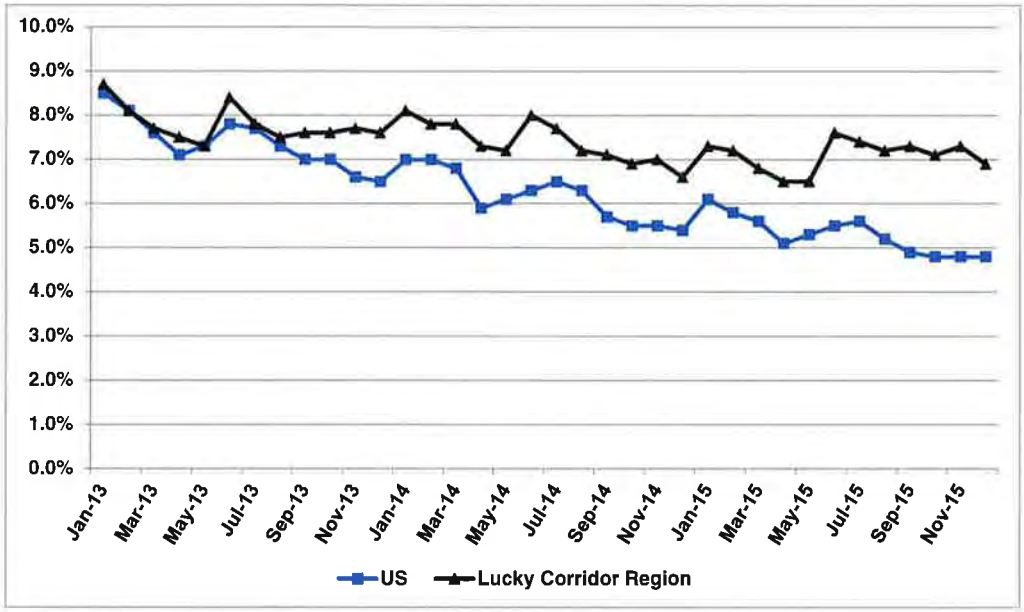
Year-over-year the Lucky Corridor region civilian labor force has grown more slowly, or contracted more quickly, than the New Mexico civilian labor force since January 2014. As Figure 2 shows, growth in the Lucky Corridor region lagged well behind New Mexico growth in every month from January 2014 to December 2015 except for beginning quarter of 2014 and July 2015. Beginning October 2015, both Lucky Corridor region and New Mexico growth began a downward descent into negative territory, with the Lucky Corridor region generally leading the way.

Figure 2 Lucky Corridor region and New Mexico year-over-year civilian labor force growth rates from January 2014 to December 2015

Source: Bureau of Labor Statistics, Local Area Unemployment Statistics

The unemployment rate in the Lucky Corridor region is higher than the US throughout the period between January 2013 to December 2015 (Figure 3). Both the US and the Lucky Corridor region experienced decline in unemployment; however, the Lucky Corridor region is lagging behind the US. The Lucky Corridor region unemployment rate generally stayed between 6.5% to 8.7% from January 2013 to December 2015, whereas US rate stayed between 4.8% to 8.5%. From December 2014 to December 2015, US unemployment rate declined from 5.4% to 4.8%; during the same period the Lucky Corridor region unemployment rate generally stayed flat in the neighborhood of 7.1%. However, because the US civilian labor force grew while the Lucky Corridor region civilian labor force contracted, the job market in the Lucky Corridor region was much tighter. This contraction is likely the result of both out-migration of workers and expiration of unemployment benefits, leaving some discouraged with job prospects and therefore leaving the labor force.

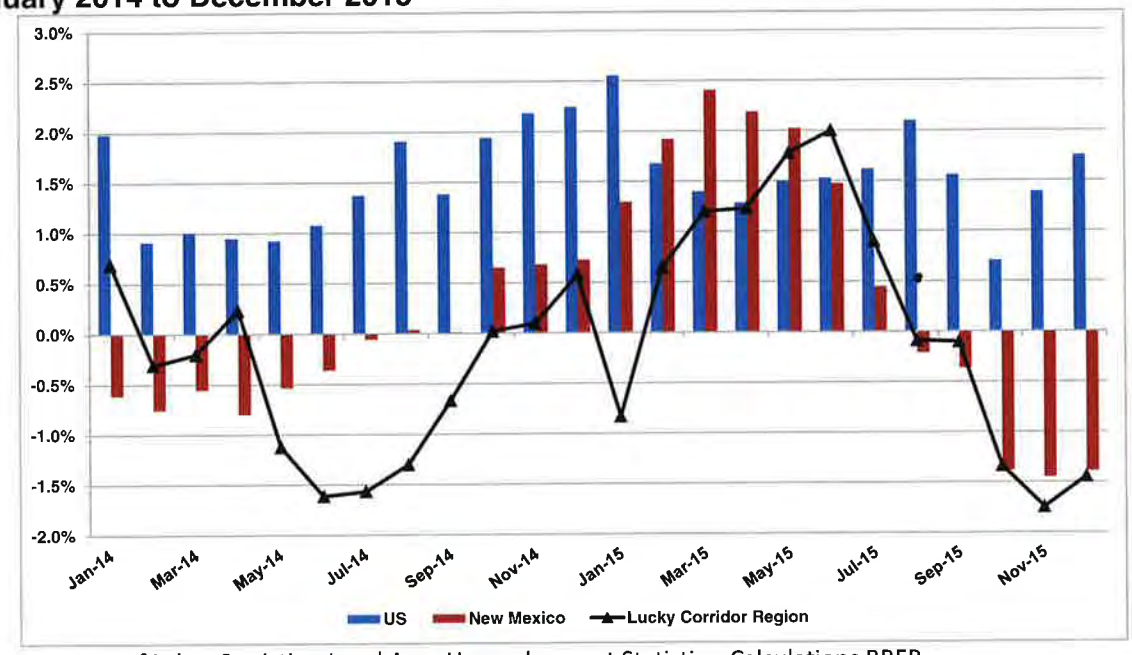
Figure 3. US and Lucky Corridor region unemployment rate January 2013 to December 2015



Source: Bureau of Labor Statistics, Local Area Unemployment Statistics

Year-over-year employment growth in the Lucky Corridor region has generally been negative and slower than the US and New Mexico (except a few months here and there) since January 2014 (Figure 4). In 2014, employment growth in the Lucky Corridor region ranged from 0.7% to -1.6%, nearly twice the rate of New Mexico contraction for any given month. However, the employment growth picked up in February 2015 and reached its peak at 2% before it started to decline again. Employment growth outperforms US and New Mexico growth in June 2015 before generally falling behind and generally turning negative in August 2015 for the remainder of the series.

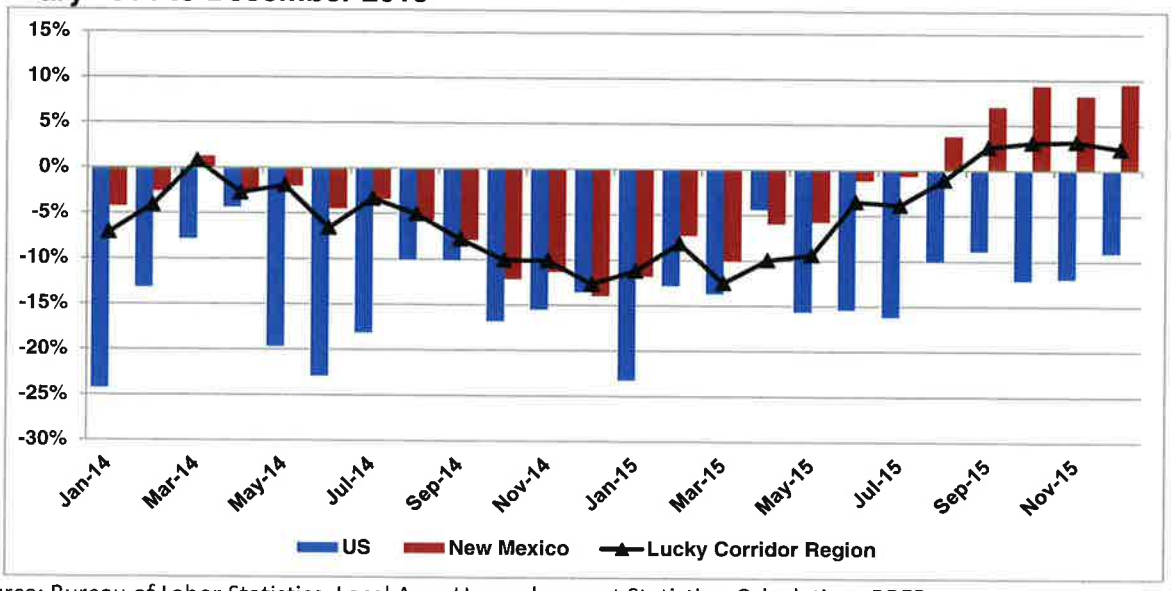
Figure 4. US, NM and Lucky Corridor region employment growth year-over-year January 2014 to December 2015



Source: Bureau of Labor Statistics, Local Area Unemployment Statistics; Calculations BBER

During January 2014 to December 2015, the US, NM and the Lucky Corridor region unemployment declined every month except September 2015 to December 2015 for Lucky Corridor region and New Mexico. Figure 5 presents the US, New Mexico and Lucky Corridor Region year over year unemployment growth from January 2014 to December 2015. Year-over-year unemployment decline in the Lucky Corridor region was generally slower than the US and faster than New Mexico. During March 2015 to December 2015, the year over year unemployment growth in the Lucky Corridor region increased slower than the US and faster than New Mexico. During the same period, New Mexico unemployment grew between -10.1% and 9.5%, while US unemployment grew between -16.2% and -4.4%. From February 2015 until December 2015, Lucky Corridor region unemployment growth generally mirrored New Mexico growth. While the US experienced negative growth in every month after Jan 2014, the Lucky Corridor region and New Mexico experienced positive unemployment growth in September 2015 and August 2015 respectively, until December 2015. Again, the reason for this result is that individuals who were formerly in the Lucky Corridor region's civilian labor force were no longer in the labor force.

Figure 5. US, NM & Lucky Corridor region unemployment growth year-over-year January 2014 to December 2015



Source: Bureau of Labor Statistics, Local Area Unemployment Statistics; Calculations BBER

Population and Poverty

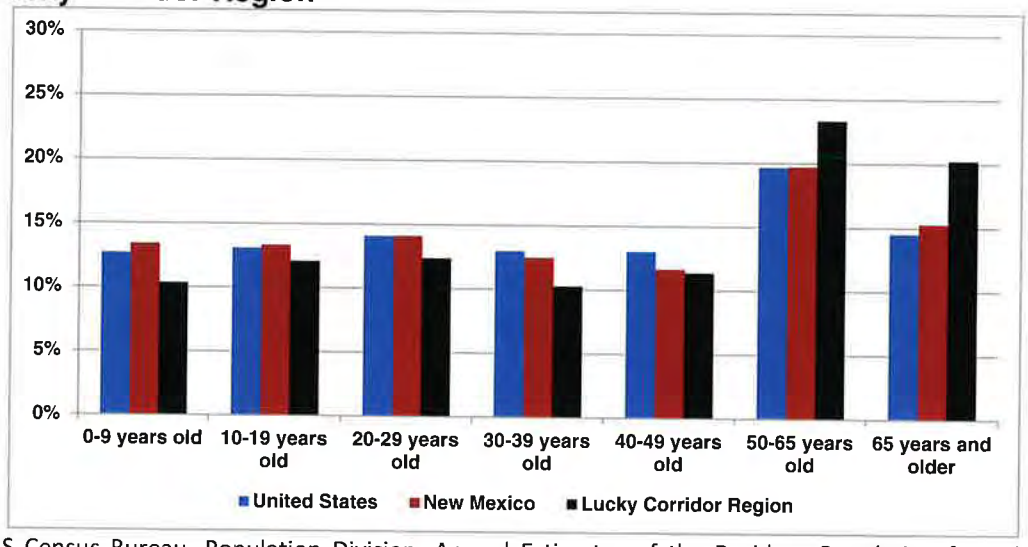
The population of the Lucky Corridor region is relatively old compared to the US and New Mexico as 43.5% of the population is aged 50 or older. According to the U.S. Census Bureau estimates, the proportion of the US and New Mexico population aged 50 and older was 34.1% and 35%, respectively. Compared to the US, the Lucky Corridor region had a smaller proportion of individuals in each younger age cohort. Table 1 shows the proportion of individuals in each age cohort in the US, New Mexico, each county comprising the Lucky Corridor region and the aggregate Lucky Corridor region. Figure 6 shows the same data graphically except that it only includes the US, New Mexico and Lucky Corridor regions.

Table 1. Proportion of population in 2014 by age range and geography

	United States	New Mexico	Colfax	Mora	San Miguel	Union	Lucky Corridor Region
Total Population	318,857,056	2,085,572	12,680	4,592	28,239	4,297	49,808
Age Cohort	Proportion of Population in Each Age Cohort						
0-9 years old	12.7%	13.4%	10.1%	9.4%	10.7%	10.1%	10.3%
10-19 years old	13.1%	13.3%	11.1%	12.1%	12.8%	10.4%	12.1%
20-29 years old	14.1%	14.1%	10.5%	9.7%	13.4%	14.0%	12.4%
30-39 years old	13.0%	12.5%	9.9%	9.2%	10.2%	13.2%	10.3%
40-49 years old	13.0%	11.6%	10.3%	11.7%	11.7%	12.2%	11.4%
50-65 years old	19.6%	19.7%	24.4%	25.3%	23.0%	20.3%	23.3%
65 years and older	14.5%	15.3%	23.7%	22.7%	18.4%	19.7%	20.2%
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: U.S. Census Bureau, Population Division;
Annual Estimates of the Resident Population for Selected Age Groups by Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipios: April 1, 2010 to July 1, 2014

Figure 6 Proportion of population by age range in April 1, 2010 to July 1, 2014; US, NM & Lucky Corridor Region

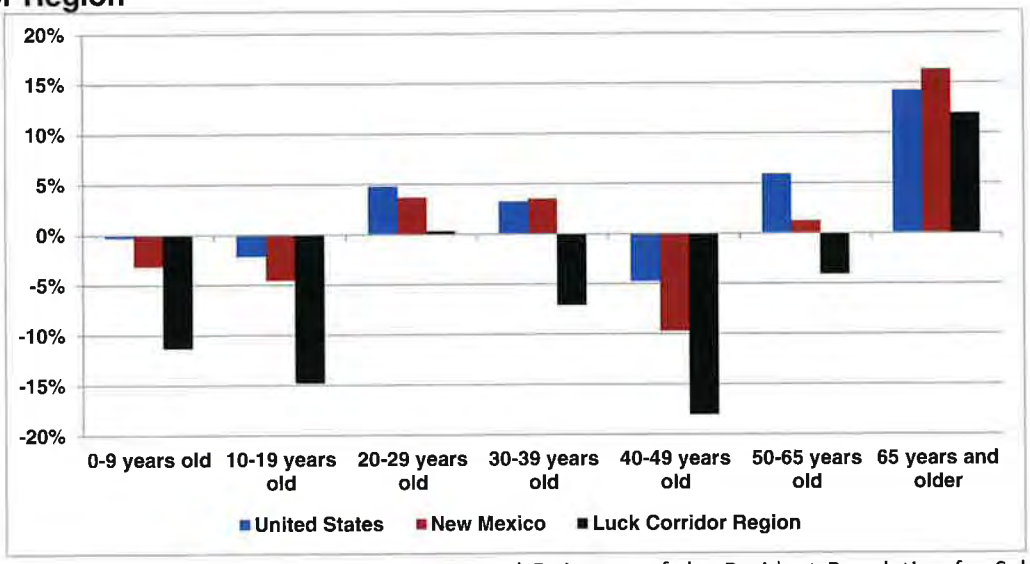


Source: US Census Bureau, Population Division; Annual Estimates of the Resident Population for Selected Age Groups by Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipalities; April 1, 2010 to July 1, 2014.

According to Census Bureau estimates, during 2010 to 2014, there has been negative population growth in Lucky Corridor region in all age cohorts except 65 years and older. The number of individuals in the 30 to 39 and 40 to 49 year old age cohorts each fell in 2014 by 7.1% and 18%, respectively, compared to 2010 (Figure 7). The number of individuals in the 0 to 9 and 10 to 19 year old age cohort also fell, likely out-migrating with their parents in the 30 to 39 and 40 to 49 cohorts. The 20 to 29 age cohort growth also remained flat which suggests that young people are out-migrating from the region mostly for education and job opportunities. The out-migration of these cohorts is troubling for the future as the region may be poised to suffer a gap in labor. Growth in the 65 and older age cohorts is likely the result of their choosing to stay in the region into retirement.

None of this paints a particularly rosy picture of the current job market in the region. The out-migration of the 30 to 49 year old population provides some evidence of the fact that those individuals do not view the region as career-enhancing and have therefore chosen to leave. The 20 to 29 age cohort may be able to fill some of the gaps created by the exit of the older cohorts but only if relatively better jobs become available. If that does not happen, the cohort is likely to also leave the area.

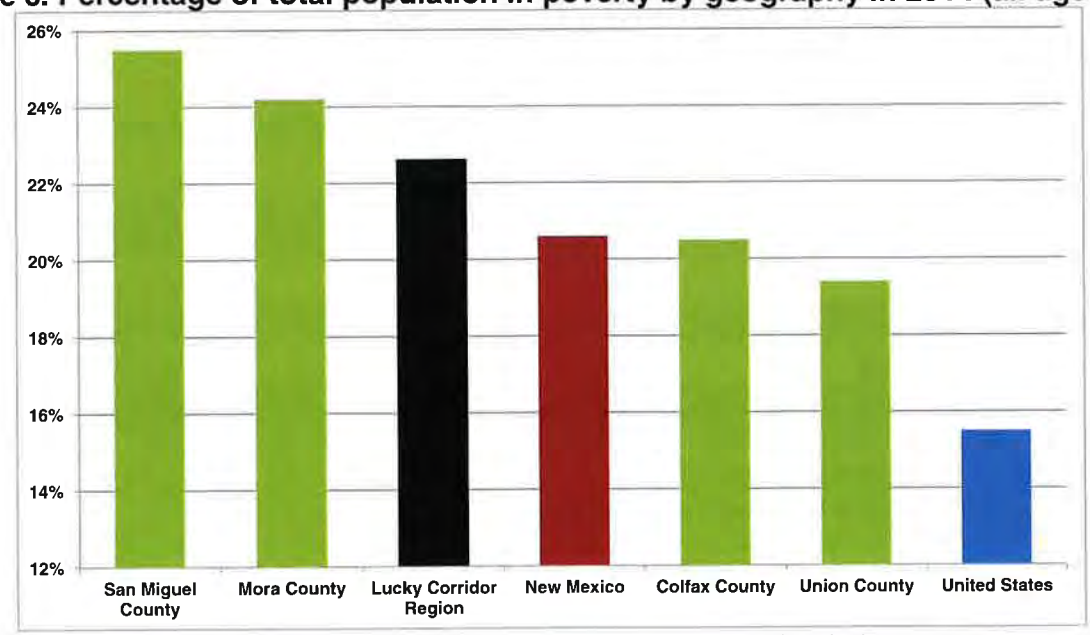
Figure 7. Population growth by age range from 2010 to 2014; US, NM & Lucky Corridor Region



Source: US Census Bureau, Population Division; Annual Estimates of the Resident Population for Selected Age Groups by Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipalities; April 1, 2010 to July 1, 2014

In 2014, the proportion of individuals living in poverty in the Lucky Corridor region (22.6%) was higher than in New Mexico (20.6%) and significantly higher than the US (15.5%). San Miguel County had the highest rates of poverty at 25.5% followed by Mora (24.2%), Colfax (20.5%) and Union (19.4%) Counties.

Figure 8. Percentage of total population in poverty by geography in 2014 (all ages)



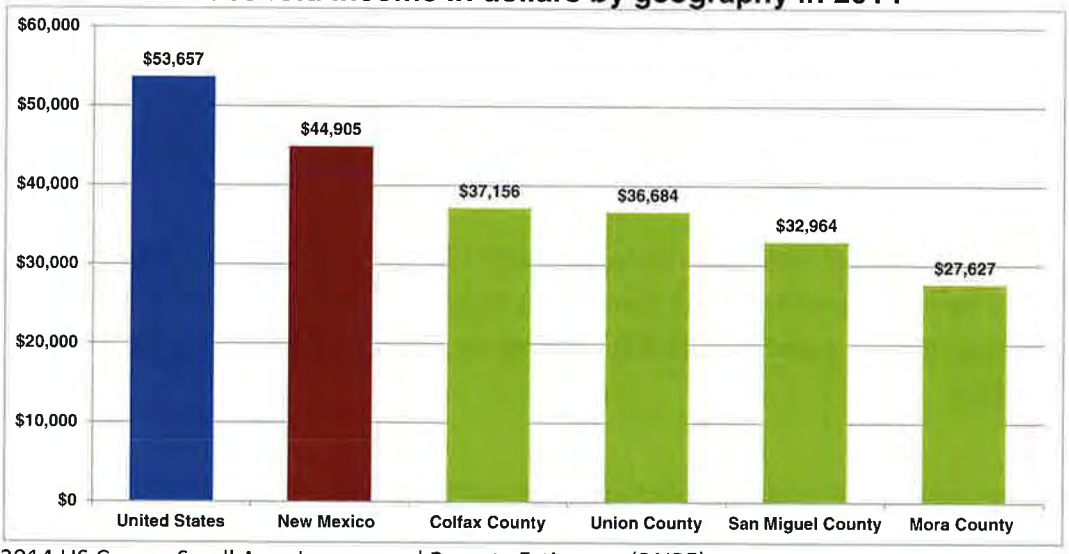
Source: Census Bureau, 2014 Small Area Income and Poverty Estimates (SAIPE); Calculations BBER

Income and Housing

In 2014, median household income in all counties within the Lucky Corridor region was lower than both the US median ($53,657) and New Mexico median ($44,905) and ranged from $27,627 in Mora County to $37,156 in Colfax County. The relatively low income figures coincide with the high poverty rates seen in the Lucky Corridor region and the notion that there is a lack of good-paying jobs in the area.

Table 2, below, summarizes the median household income and poverty data of the US, New Mexico and Lucky Corridor region and shows New Mexico's rankings compared to the rest of the states.

Figure 9. Median household income in dollars by geography in 2014



Source: 2014 US Census Small Area Income and Poverty Estimates (SAIPE)

Table 2. Median income statistics, proportion of population living in poverty by age and NM income and poverty rankings[8]

	United States	New Mexico	Lucky Corridor Region*	NM Rank**
Median Household Income	$53,657	$44,905	$33,991	43
Poverty Rate - All Ages	15.5%	20.6%	22.6%	2
Poverty Rate - Under 18	21.7%	28.0%	31.7%	3
Poverty Rate - 5-17 years old	20.4%	26.2%	29.5%	4
Poverty Rate 0-4 years old	23.9%	31.5%	44.5%	3

* Lucky Corridor Region median income estimated

** Rank based on all 50 states and District of Columbia

Source: 2014 US Census Small Area Income and Poverty Estimates (SAIPE)

According to the Census Bureau's 2010-2014 American Community Survey, a disproportionate number of vacant housing units are within the Lucky Corridor region as 8% of all vacancies in the

[8] Lucky Corridor median household income is estimated by taking a weighted average of household median income of all its constituent counties. The weights are based upon the number of households in each county.

state were attributable to the four counties within the region, while the region only constituted 3.4% of all housing units within the state. Troubling is that all of the counties had more than a 27% vacancy rate. Mora County had the highest vacancy rate (52.4%) followed by Colfax County (46.6%), Union County (30.6%) and San Miguel County (27.4%).

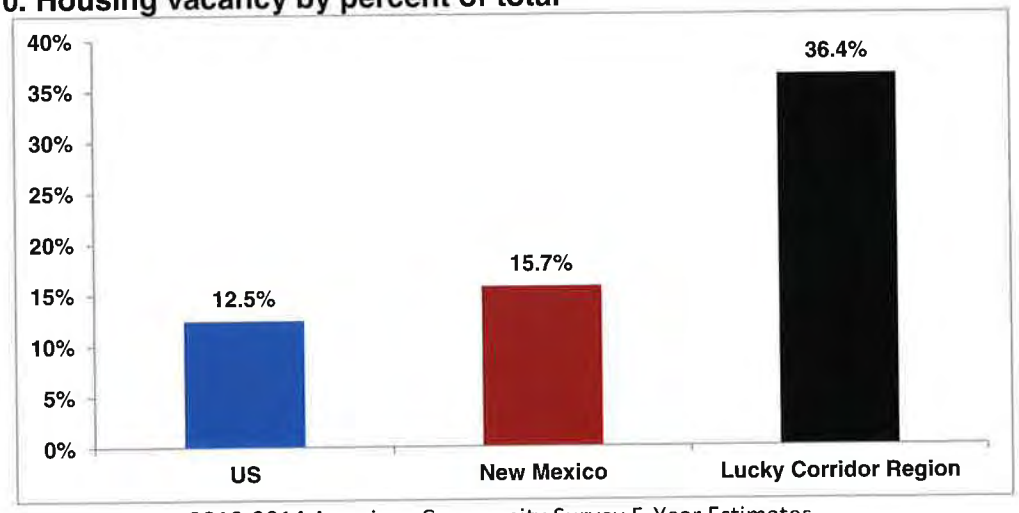
Table 3. Housing vacancy by geography

	Total Units	Vacant Units	Vacancy %
New Mexico	**907,233**	**142,549**	**15.7%**
Colfax	10,046	4,677	46.6%
Mora	3,202	1,677	52.4%
San Miguel	15,581	4,275	27.4%
Union	2,309	707	30.6%
Lucky Corridor Region	**31,138**	**11,336**	**36.4%**

Source: US Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

Overall, the Lucky Corridor region has high housing vacancy rates (36.4%) compared to the US (12.5%) and the rest of New Mexico (15.7%). To put the numbers in perspective, Figure 10 graphically shows that the Lucky Corridor vacancy rates compared to the US and the New Mexico rates. The Lucky Corridor vacancy rate is nearly 3 times the US rate and more than 2.5 times higher than New Mexico rate.

Figure 10. Housing vacancy by percent of total



Source: US Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

A Report of the Economic Impact of the Lucky Corridor Project on Communities in Northern New Mexico

April 4, 2016

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Table of Contents

Executive Summary

Purpose of this Report

This report presents the economic impact during the construction and operations of the Lucky Corridor project and additional revenues for the State of New Mexico and local taxing districts, including cities, counties, school districts and special taxing districts in which the project will be located.

The project -- an electrical transmission line -- will be located in four Northern New Mexico counties including Colfax, Union, Taos, and San Miguel.

The economic impact was calculated for the project over ten years -- (1) during construction, largely three years, 2nd quarter 2019 to 2nd quarter 2021 during which the transmission line will be constructed and (2) during the first seven years of operations beginning in 2021.

Some secondary impacts -- the economic impact of users of the line, proposed 880 megawatt wind farms -- were also calculated.

The Project

The Lucky Corridor project is the construction and operations of a 130 mile, 345kV extra high voltage electrical transmission line in Northern New Mexico -- replacing an old 115 kV line, currently between Farley, New Mexico, and a point near Chili, New Mexico.

The project will cost an estimated $195 million and create an estimated 145 direct construction jobs during its construction.

When fully operating, the transmission line will have five employees and estimated annual revenues of $31.3 million in its first year of full operations.

Economic Impact of the Transmission Line over the First Ten Years

The construction and operations of the transmission line will have the following economic impacts

Economic Impacts During Ten Years of Construction and Operations of the Transmission Line			
	Jobs	Workers' Earnings *(In Millions of Dollars)*	Economic Output *(In Millions of Dollars)*
Economic Impacts during construction -- about three years:			
Direct	145	$39	$196
Indirect	86	$20	$127
Induced	29	$7	$42
Total	260	$65	$365
Economic impacts over the first six years of operations:			
Direct	5	$2.67	$253.23
Indirect	7	$1.59	$125.88
Induced	2	$0.53	$41.96
Total	14	$4.79	$421.08

Additional Revenues for the State of New Mexico and Local Taxing Districts Over the First Ten Years

The State of New Mexico and the cities, counties, school districts and special taxing districts in which the transmission line runs, will receive the following additional revenues over the first ten years of construction and operations:

Public Revenues Over the First 10 Years of Construction and Operations of the Transmission Line						
	State of New Mexico	Cities	Counties	School Districts	Special Taxing Districts	Total
Gross receipts taxes	$29,699,636	$1,901,501	$5,432,860			$37,033,997
Property taxes	$546,882	$92,648	$4,916,312	$4,535,907	$2,232,165	$12,323,915
State personal income taxes	$1,858,987					$1,858,987
State corporate income taxes	$6,810,586					$6,810,586
Total	$38,916,091	$1,994,149	$10,349,172	$4,535,907	$2,232,165	$58,027,485

In addition, landowners along the transmission line will receive annual lease payments from the company of about $250,000.

Secondary Impacts

According to Lucky Corridor officials, by replacing the old 115 kV line, currently between Farley, New Mexico, and a point near Chili, New Mexico, with a new 345 kV, high voltage, AC line, this project will correct a weak link in the grid of the eleven western states, creating a reliability loop with the new transmission line installed to Farley in 2008 by Tri-State Generation and Transmission Association Inc.

By making New Mexico's grid more reliable and robust, up to 880 megawatts of new wind power generation projects can be built in northern New Mexico, further enhancing the area's tax base and jobs.

The secondary impact generated by the transmission line could include the construction and operations of 880 megawatts of wind farms costing an estimated $1.6 billion.

A summary of the local economic impacts of the wind farms is shown below:

Summary Local Economic Impacts of the Wind Farms			
	Jobs	Workers' Earnings *(Shown in Millions of Dollars)*	Economic Output *(Shown in Millions of Dollars)*
During construction period:			
Direct Impacts	383	$20.96	$29.70
Onsite Construction Labor Only	59	$4.54	
Onsite Construction Related Services	442	$25.50	
Indirect Impacts	2008	$103.57	$313.30
Induced Impacts	790	$33.55	$103.80
Total Impacts (Direct, Indirect, Induced)	3239	$162.62	$446.80
During operating years (annual):			
Direct Impacts			
Onsite Plant Labor Only	40	$2.32	$2.32
Indirect Impacts	55	$2.49	$18.33
Induced Impacts	42	$1.89	$5.84
Total Impacts (Direct, Indirect, Induced)	137	$6.69	$26.49

The full report showing details of this economic impact study are on the following pages, beginning with an introduction.

The Full Report

Introduction

This report presents the economic impact during the construction and operations of the Lucky Corridor project and additional revenues for the State of New Mexico and local taxing districts, including cities, counties, school districts and special taxing districts in which the project will be located.

The project -- an electrical transmission line -- will be located in four Northern New Mexico counties including Colfax, Union, Taos, and San Miguel.

The economic impact was calculated for the project over ten years -- (1) during construction, largely three years, 2nd quarter 2019 to 2nd quarter 2021 during which the transmission line will be constructed and (2) during the first seven years of operations beginning in 2021.

Later in the report, the secondary impacts -- the economic impact of a large user of the line, 880 megawatt wind farms-- were also presented.

Description of the Construction and Operations of the Transmission Line

The Lucky Corridor project is the construction and operations of a 130 mile, 500 kV extra high voltage electrical transmission line in Northern New Mexico -- replacing an old 115 kV line, currently between Farley, New Mexico, and a point near Chili, New Mexico.

Some characteristics of the project are shown on the following page:

Some Characteristics of the Transmission Line Project		
Total project cost		$195,750,000
Beginning and ending dates most construction activities		Q2 2019 to Q2 2021
Length of primary construction period, in months		24
Estimated construction labor costs		$39,150,000
Estimated average number of construction workers on the project each year during the construction period:		
	Calendar Year	Construction Workers Each Year
Year 1	2019	174
Year 2	2020	218
Year 3	2021	44
Average number of worker on site		145
Estimated annual revenues of the transmission line during first full year of operations		$31,300,000
Estimated number of permanent workers who will be operating and maintaining the transmission line		5
Average annual salaries of permanent workers		$60,000

A discussion of the economic impacts to be generated in Northern New Mexico during the transmission line's construction is next.

Economic Impacts During Construction of the Transmission Line

Types of Economic Impacts Generated During Construction

The economic impacts of the project's construction may be characterized as direct, indirect and induced.

The direct economic impact during construction will come from the project's spending on construction and from construction workers and their salaries. From the direct construction spending and the spending of construction workers, indirect and induced benefits or spin-off benefits will be created and supported in the region.

Indirect sales, jobs and salaries will be supported in businesses and organizations in the region, such as equipment suppliers, concrete companies, subcontractors, etc. that supply goods and services to the firms constructing the project. In addition, induced sales, jobs and salaries will be supported in businesses or organizations in the region, such as restaurants, gas stations, banks, book stores, grocery stores, apartment complexes, convenience stores, computer stores, service companies, etc. that supply goods and services to construction workers and their families and, in turn, to workers in indirect jobs and their families.

To estimate the indirect and induced economic impact of the construction activities on the Northern New Mexico region, regional economic multipliers were used. Regional economic multipliers for New Mexico and areas of the state are included in the US Department of Commerce's Regional Input-Output Modeling System (RIMS II).

Three types of regional economic multipliers were used in this analysis:

- An output multiplier,
- An employment multiplier and
- An earnings multiplier.

The multipliers show (1) the estimated sales or output in businesses or organizations in the region for each dollar of spent on construction of the project, (2) the number of indirect and induced jobs created for every one direct construction job, and (3) the amount of salaries paid to these workers for every dollar to be paid to a construction worker.

The following indirect multipliers for construction activities were used in this analysis:

Indirect and Induced Multipliers Used in this Analysis For Construction Activities	
Output multiplier	0.8668
Employment multiplier	0.7933
Earnings multiplier	0.6726

Economic Impacts During Construction

The project's construction activities will provide substantial economic impacts for Northern New Mexico, as shown below.

Economic Impacts During Construction			
	Jobs	Workers' Earnings *(In Millions of Dollars)*	Economic Output *(In Millions of Dollars)*
Direct	145	$39	$196
Indirect	86	$20	$127
Induced	29	$7	$42
Total	260	$65	$365

As shown above, the project's construction activities will generate $365 million in economic output or revenues for businesses in the region, create and support an average of 260 jobs during the construction period and create and support $65 million in salaries for workers in the region.

In addition to the economic impact from the construction activities, the economic activities created by the operations of the transmission line once completed, permanent jobs created and salaries to be generated for local workers, will also generate substantial economic impacts for the region. These impacts are discussed next.

Economic Impacts that the Operations of the Transmission Line Will Provide

The operations of the transmission line will create substantial economic benefits for the Northern New Mexico region.

These economic impacts include the following:

- Revenues of the transmission line and other businesses in the region,
- Taxable gross receipts generated by the transmission line,
- Permanent jobs,
- Worker salaries or personal income,
- Workers spending, and
- New property added to property tax rolls.

Types of Economic Impacts that the Operations of the Transmission will Provide

As with construction impacts, the economic impacts of the operations of the transmission line may be characterized as direct, indirect and induced.

The direct economic impact will come from the operations of the transmission line and its employees. From the revenues and spending of the transmission line and the spending of its employees, indirect induced benefits or spin-off benefits will generated and supported in the region.

Indirect sales, jobs and salaries will be supported in businesses and organizations in the region, such service firms and materials and equipment supply companies, that supply goods and services to operate and maintain the transmission line. In addition, induced sales, jobs and salaries will be created and supported in businesses or organizations in the region, such as restaurants, gas stations, stores, grocery stores, apartment complexes, convenience stores, computer stores, service companies, banks, etc. that supply goods and services to the company's employees and families and, in turn, to workers in indirect jobs and their families.

The following indirect multipliers for the transmission line's operations were used in this analysis:

Indirect and Induced Multipliers Used in this Analysis For Operations of the Transmission Line	
Output multiplier	0.6628
Employment multiplier	1.8724
Earnings multiplier	0.7951

The multipliers show (1) the estimated sales or output in businesses or organizations in the region for each dollar revenue generated by the project, (2) the number of indirect and induced jobs created for every one direct job at project and (3) the amount of salaries paid to these workers for every dollar to be paid to direct job employee of the project.

The annual economic impact of operations of the transmission line is discussed next.

The Annual Direct, Indirect and Induced Economic Impact of Operations of the Transmission Line

As discussed above, the transmission line will generate additional revenues or economic output in the region, more jobs and additional salaries.

These operations will generate the following annual direct and indirect economic activity in the region during the first year of full operations

Total Annual Economic Output, Jobs, and Annual Salaries During the First Year of Operations			
	Annual Economic Output	Jobs	Annual Salaries
Direct	$31,300,000	5	$300,000
Indirect and induced	$20,745,640	9	$238,530
Total	$52,045,640	14	$538,530

As shown above, the direct economic impact of the annual operations of the transmission line during its first full year of operations will be $31million. The direct revenues of the operations of the line and its spending will generate another $20 million in annual indirect sales or economic output in businesses and other organizations in the region. In total, the annual economic impact of the operations of the line, when full operational, will be $52 million. This will be the increase in gross regional product, equivalent on a local level to our nation's gross domestic product.

While the transmission line will employ 5 workers, the spending of the transmission line will support 9 jobs in the region. In total, the line's operations will support 14 jobs in the region.

Similarly, while the annual salaries workers on the transmission line will total $300,000, the line's spending will support another $238,530 in salaries for workers in related spin-off jobs supported in the region. Therefore, total annual salaries created and supported by the transmission line's operations will total $538,530 a year.

The economic impact of the operations of transmission line over first seven years of operations is discussed next.

Estimated Economic Impact of the Operations of Transmission Line over the First Seven Years

The transmission line will have the following economic impact on the Northern New Mexico region over the first seven years of its operations:

Economic Impact over the First Seven Years of Operations	
Economic output (increase in gross regional product):	
Direct	$253,232,979
Indirect	$167,842,819
Total	$421,075,798
Total number of permanent jobs to be created:	
Direct	5
Indirect	9
Total	14
Salaries to be paid workers:	
Direct	$2,667,701
Indirect	$2,121,089
Total	$4,788,790
Additional taxable gross receipts expected in the region	$191,160,185
Value of commercial property added to local tax rolls	$146,812,500

How the economic activity generated during the transmission line's construction and operations translates into additional revenues for the State of New Mexico and local taxing districts in which the transmission line is located is discussed next.

Additional Revenues for the State of New Mexico and Local Taxing Districts Over the First Ten Years of the Project's Construction and Operations

The State of New Mexico and cities, counties, school districts and special taxing districts in which the transmission line runs through will receive the following additional revenues over the first ten years of line's construction and operations:

Public Revenues Over the First 10 Years of Construction and Operations of the Transmission Line

	State of New Mexico	Cities	Counties	School Districts	Special Taxing Districts	Total
Gross receipts taxes	$29,699,636	$1,901,501	$5,432,860			$37,033,997
Property taxes	$546,882	$92,648	$4,916,312	$4,535,907	$2,232,165	$12,323,915
State personal income taxes	$1,858,987					$1,858,987
State corporate income taxes	$6,810,586					$6,810,586
Total	$38,916,091	$1,994,149	$10,349,172	$4,535,907	$2,232,165	$58,027,485

Discussion of Secondary Impacts

According to Lucky Corridor officials, by replacing the old 115 kV line, currently between Farley, New Mexico, and a point near Chili, New Mexico, with a new 500 kV, high voltage, AC line, this project will correct a weak link in the grid of the eleven western states, creating a reliability loop with the new transmission line installed to Farley in 2008 by Tri-State Generation and Transmission Association Inc.

By making New Mexico's grid more reliable and robust, up to 880 megawatts of new power generation projects, including wind, can be built in northern New Mexico, further enhancing the area's tax base and jobs.

This analysis assumes that the secondary impact generated by the transmission line will include the construction and operations of 880 megawatts of wind farms. Some characteristics of each plant are discussed below.

Some Characteristics of the Wind Farms

The wind farms will have the following characteristics:

Total project cost	$1.6 billion
Annual operational expenses	$266 million
Number of direct jobs created by the plant's operations	40
Annual salaries	$2.32 million

Economic Impacts

Costs, other characteristics and economic impact of the wind farms were determined using the National Renewable Energy Laboratory's Job and Economic Development Impact Model (JEDI). These costs, characteristics and economic impacts are shown below.

Summary of Project Data for Wind Farms	
Project Location	NEW MEXICO
Year of Construction	2022
Total Project Size - Nameplate	880
Number of Projects (included in total)	1
Turbine Size (KW)	2000
Number of Turbines	440
Installed Project Cost ($/KW)	$1,846
Annual O&M Cost ($/KW)	$20.84
Money Value (Dollar Year)	2013
Installed Project Cost	$1,624,463,304
Local Spending	$354,300,432
Total Annual Operational Expenses	$266,498,169
Direct Operating and Maintenance Costs	$18,335,387
Local Spending	$4,900,588
Other Annual Costs	$248,162,782
Local Spending	$12,309,147
Debt payments with IRBs will be paid through Union and other New Mexico Counties	To be determined
Property Taxes	$8,933,760
Land Lease	$2,640,000

A summary of the local economic impacts for wind farms is shown below:

Summary Local Economic Impacts of Wind Farms			
	Jobs	Earnings (Shown in Millions of Dollars)	Output (Shown in Millions of Dollars)
During construction period:			
Direct Impacts	383	$20.96	$29.70
Onsite Construction and Interconnection Labor	59	$4.54	
Onsite Construction Related Services	442	$25.50	
Indirect Impacts	2008	$103.57	$313.30
Induced Impacts	790	$33.55	$103.80
Total Impacts (Direct, Indirect, Induced)	3239	$162.62	$446.80
During operating years (annual)			
Direct Impacts			
Onsite Wind Farm Labor Only	40	$2.32	$2.32
Indirect Impacts	55	$2.49	$18.33
Induced Impacts	42	$1.89	$5.84
Total Impacts (Direct, Indirect, Induced)	137	$6.69	$26.49

Notes: Earnings and Output values are millions of dollars in year 2013 dollars. Construction and operating jobs are full-time equivalent for a period of one year (1 FTE = 2,080 hours). Wind farm workers includes field technicians, administration and management. Economic impacts "During operating years" represent impacts that occur from wind farm operations/expenditures. The analysis does not include impacts associated with spending of wind farm "profits" and assumes no tax abatement unless noted. Totals may not add up due to independent rounding. Results are based on model default values.

Conduct of This Analysis

This analysis was conducted by Impact DataSource, an Austin, Texas economic consulting, research and analysis firm.

This analysis uses some Impact DataSource estimates and assumptions, as well as tax rates and other data obtained from state financial and tax data reports and data supplied on the project. Data used in this analysis is shown in the Some Tax and Other Rates Used in This Analysis section that follows.

Using this data, the economic impact of the project's construction and operations and additional revenues for the State of New Mexico and cities, counties, school districts and special taxing district in the path of the transmission line were calculated for the first ten years.

Information and rates used in this analysis follow on the next page. In addition, schedules of the results of economic impact calculations are also attached, along with schedules showing the results of calculations of additional revenues for the State of New Mexico and local taxing districts.

Impact DataSource is a 22-year-old Austin economic consulting, research and analysis firm. The firm has conducted economic impact analyses of numerous projects in New Mexico and 39 other states. In addition, the firm has developed economic impact analysis computer programs for several clients, including the New Mexico Economic Development Department.

The firm's principal, Jerry Walker, performed this economic impact analysis. He is an economist and has Bachelor of Science and Master of Business Administration degrees in accounting and economics from Nicholls State University, Thibodaux, Louisiana.

Some Tax and Other Rates Used in this Analysis

State of New Mexico Tax and Other Rates

Property tax rate for state debt service:

Residential	1.360
Nonresidential	1.360

State's gross receipts tax rate: 5.13%

State's compensating tax rate: 5.00%

Maximum NM corporate income tax rate:

Up to $500,000: 4.8% of net taxable income
$500,000-$1 mil.: $24,000+6.4% over $500,000
$1 million plus: $56,000+7.6% over $1 million

NM personal income tax rate for employees of this facility, estimated as a percent of gross income: 2.65%

City Information and Rates

City property tax rate:

Residential	11.4690
Nonresidential	11.5200

(Per $1,000 of taxable value)

City gross receipts tax rate: 0.9375%

County Information and Rates

County property tax rate:

Residential	8.7210
Nonresidential	12.2260

County's share of gross receipts tax: 0.938%

School District Tax Rates

Property tax rate:

Residential	10.531
Nonresidential	11.280

Combined Rates for Special Taxing Districts, If Any

Property tax rate:

Residential	10.567
Nonresidential	11.102

Other Community Rates

Inflation rate	3.00%
Number of work hours per year by a typical employee of the facility	2,080
Percent of the gross salary of a typical worker spends on taxable goods and services	35%
Taxable value of property as a percent of assessed value	33%

Schedules of Some Economic Impacts During Construction of the Transmission Line

Construction costs:

Year	Costs
1	$78,300,000
2	$97,875,000
3	$19,575,000
4	$0
5	$0
6	$0
7	$0
8	$0
9	$0
10	$0
Total	$195,750,000

Estimated value of property added to tax rolls:

Estimated construction costs	$195,750,000
Percent of construction costs added to tax rolls	75%

Year	Added Each Year	Cumulative Values on Tax Rolls
1		0
2	$58,725,000	$58,725,000
3	$73,406,250	$132,131,250
4	$14,681,250	$146,812,500
5	$0	$146,812,500
6	$0	$146,812,500
7	$0	$146,812,500
8	$0	$146,812,500
9	$0	$146,812,500
10	$0	$146,812,500
Total	$146,812,500	

Direct and indirect construction salaries:

Year	Direct	Indirect	Total
1	$15,660,000	$10,532,916	$26,192,916
2	$19,575,000	$13,166,145	$32,741,145
3	$3,915,000	$2,633,229	$6,548,229
4	$0	$0	$0
5	$0	$0	$0
6	$0	$0	$0
7	$0	$0	$0
8	$0	$0	$0
9	$0	$0	$0
10	$0	$0	$0
Total	$39,150,000	$26,332,290	$65,482,290

Taxable spending of direct and indirect construction workers in the region:

Year	Direct	Indirect	Total
1	$5,481,000	$3,686,521	$9,167,521
2	$6,851,250	$4,608,151	$11,459,401
3	$1,370,250	$921,630	$2,291,880
4	$0	$0	$0
5	$0	$0	$0
6	$0	$0	$0
7	$0	$0	$0
8	$0	$0	$0
9	$0	$0	$0
10	$0	$0	$0
Total	$13,702,500	$9,216,302	$22,918,802

Estimated revenues of construction companies that will be subject to NM gross receipts taxes:

Year	Direct	Indirect	Total
1	$78,300,000	$67,870,440	$146,170,440
2	$97,875,000	$84,838,050	$182,713,050
3	$19,575,000	$16,967,610	$36,542,610
4	$0	$0	$0
5	$0	$0	$0
6	$0	$0	$0
7	$0	$0	$0
8	$0	$0	$0
9	$0	$0	$0
10	$0	$0	$0
Total	$195,750,000	$169,676,100	$365,426,100

Estimated net income of construction companies that will be subject to NM corporate income taxes:

Year	Direct	Indirect	Total
1	$7,830,000	$6,787,044	$14,617,044
2	$14,681,250	$12,725,708	$27,406,958
3	$2,936,250	$2,545,142	$5,481,392
4	$0	$0	$0
5	$0	$0	$0
6	$0	$0	$0
7	$0	$0	$0
8	$0	$0	$0
9	$0	$0	$0
10	$0	$0	$0
Total	$25,447,500	$22,057,893	$47,505,393

Schedules of Some Economic Impacts During the Operations of the Transmission Line

Direct and indirect permanent salaries:

Year	Direct	Indirect	Total
1	$0	$0	$0
2	$0	$0	$0
3	$300,000	$238,530	$538,530
4	$309,000	$245,686	$554,686
5	$318,270	$253,056	$571,326
6	$327,818	$260,648	$588,466
7	$337,653	$268,468	$606,120
8	$347,782	$276,522	$624,304
9	$358,216	$284,817	$643,033
10	$368,962	$293,362	$662,324
Total	$2,667,701	$2,121,089	$4,788,790

Taxable spending of direct and indirect permanent workers in the region:

Year	Direct	Indirect	Total
1	$0	$0	$0
2	$0	$0	$0
3	$105,000	$83,486	$188,486
4	$108,150	$85,990	$194,140
5	$111,395	$88,570	$199,964
6	$114,736	$91,227	$205,963
7	$118,178	$93,964	$212,142
8	$121,724	$96,783	$218,506
9	$125,375	$99,686	$225,062
10	$129,137	$102,677	$231,813
Total	$933,695	$742,381	$1,676,076

Estimated revenues of the transmission line:

Year	Direct	Indirect	Total
1	$0	$0	$0
2	$0	$0	$0
3	$20,556,800	$13,625,047	$34,181,847
4	$31,297,728	$20,744,134	$52,041,862
5	$31,923,683	$21,159,017	$53,082,699
6	$32,562,156	$21,582,197	$54,144,353
7	$33,213,399	$22,013,841	$55,227,240
8	$33,877,667	$22,454,118	$56,331,785
9	$34,555,221	$22,903,200	$57,458,421
10	$35,246,325	$23,361,264	$58,607,589
Total	$253,232,979	$167,842,819	$421,075,798

Estimated revenues of the transmission line that will be subject to NM gross receipts taxes:

Year	Direct	Indirect	Total
1	$0	$0	$0
2	$0	$0	$0
3	$9,250,560	$6,131,271	$15,381,831
4	$14,083,978	$9,334,860	$23,418,838
5	$14,365,657	$9,521,558	$23,887,215
6	$14,652,970	$9,711,989	$24,364,959
7	$14,946,030	$9,906,228	$24,852,258
8	$15,244,950	$10,104,353	$25,349,303
9	$15,549,849	$10,306,440	$25,856,289
10	$15,860,846	$10,512,569	$26,373,415
Total	$113,954,841	$75,529,268	$189,484,109

Estimated net income of the transmission line that will be subject to NM corporate income taxes:

Year	Direct	Indirect	Total
1	$0	$0	$0
2	$0	$0	$0
3	$0	$0	$0
4	$0	$0	$0
5	$1,565,000	$1,037,282	$2,602,282
6	$1,565,000	$1,037,282	$2,602,282
7	$1,565,000	$1,037,282	$2,602,282
8	$1,565,000	$1,037,282	$2,602,282
9	$1,565,000	$1,037,282	$2,602,282
10	$1,565,000	$1,037,282	$2,602,282
Total	$9,390,000	$6,223,692	$15,613,692

Schedules of Taxes to be Collected by the State and Local Taxing Districts During the Construction and Operations of the Transmission Line

State of New Mexico:

Gross receipts tax collections:

	Taxable Gross Receipts			Gross Receipts Tax
Year	During Construction	During Operations	Total	Collections
1	$155,337,961	$0	$155,337,961	$7,961,070
2	$194,172,451	$0	$194,172,451	$9,951,338
3	$38,834,490	$15,570,317	$54,404,807	$2,788,246
4	$0	$23,612,978	$23,612,978	$1,210,165
5	$0	$24,087,179	$24,087,179	$1,234,468
6	$0	$24,570,922	$24,570,922	$1,259,260
7	$0	$25,064,400	$25,064,400	$1,284,551
8	$0	$25,567,810	$25,567,810	$1,310,350
9	$0	$26,081,351	$26,081,351	$1,336,669
10	$0	$26,605,229	$26,605,229	$1,363,518
Total	$388,344,902	$191,160,185	$579,505,087	$29,699,636

Personal income tax collections:

	Workers' Salaries			Personal Income Tax
Year	During Construction	During Operations	Total	Collections
1	$26,192,916	$0	$26,192,916	$692,921
2	$32,741,145	$0	$32,741,145	$866,151
3	$6,548,229	$538,530	$7,086,759	$187,477
4	$0	$554,686	$554,686	$14,674
5	$0	$571,326	$571,326	$15,114
6	$0	$588,466	$588,466	$15,568
7	$0	$606,120	$606,120	$16,035
8	$0	$624,304	$624,304	$16,516
9	$0	$643,033	$643,033	$17,011
10	$0	$662,324	$662,324	$17,521
Total	$65,482,290	$4,788,790	$70,271,080	$1,858,987

NM corporate income tax collections:

Year	Net Taxable Income of Companies			Corporate Income Tax Collections
	During Construction	During Operations	Total	
1	$14,617,044	$0	$14,617,044	$1,110,895
2	$27,406,958	$0	$27,406,958	$2,082,929
3	$5,481,392	$3,418,185	$8,899,576	$676,368
4	$0	$5,204,186	$5,204,186	$395,518
5	$0	$5,308,270	$5,308,270	$403,429
6	$0	$5,414,435	$5,414,435	$411,497
7	$0	$5,522,724	$5,522,724	$419,727
8	$0	$5,633,179	$5,633,179	$428,122
9	$0	$5,745,842	$5,745,842	$436,684
10	$0	$5,860,759	$5,860,759	$445,418
Total	$47,505,393	$42,107,580	$89,612,973	$6,810,586

Property tax collections:

Year	Value of Property on Tax Rolls	Property Tax Collections
1	$0	$0
2	$58,725,000	$26,356
3	$132,131,250	$59,301
4	$146,812,500	$65,889
5	$146,812,500	$65,889
6	$146,812,500	$65,889
7	$146,812,500	$65,889
8	$146,812,500	$65,889
9	$146,812,500	$65,889
10	$146,812,500	$65,889
Total		$546,882

Total tax collections for the State of New Mexico:

Year	Annual Tax Collections	Cumulative Collections
1	$9,764,887	$9,764,887
2	$12,926,774	$22,691,660
3	$3,711,391	$26,403,052
4	$1,686,247	$28,089,298
5	$1,718,900	$29,808,198
6	$1,752,214	$31,560,412
7	$1,786,202	$33,346,614
8	$1,820,877	$35,167,491
9	$1,856,254	$37,023,745
10	$1,892,347	$38,916,091
Total	$38,916,091	

Cities in the Region:

Gross receipts tax collections:

Year	Taxable Gross Receipts: During Construction	Taxable Gross Receipts: During Operations	Taxable Gross Receipts: Total	Gross Receipts Tax Collections
1	$54,368,286	$0	$54,368,286	$509,703
2	$67,960,358	$0	$67,960,358	$637,128
3	$13,592,072	$5,449,611	$19,041,682	$178,516
4	$0	$8,264,542	$8,264,542	$77,480
5	$0	$8,430,513	$8,430,513	$79,036
6	$0	$8,599,823	$8,599,823	$80,623
7	$0	$8,772,540	$8,772,540	$82,243
8	$0	$8,948,733	$8,948,733	$83,894
9	$0	$9,128,473	$9,128,473	$85,579
10	$0	$9,311,830	$9,311,830	$87,298
Total	$135,920,716	$66,906,065	$202,826,780	$1,901,501

Property tax collections:

Year	Value of Property on Tax Rolls	Property Tax Collections
1	$0	$0
2	$1,174,500	$4,465
3	$2,642,625	$10,046
4	$2,936,250	$11,162
5	$2,936,250	$11,162
6	$2,936,250	$11,162
7	$2,936,250	$11,162
8	$2,936,250	$11,162
9	$2,936,250	$11,162
10	$2,936,250	$11,162
Total		$92,648

Total tax collections for cities in the region:

Year	Annual Tax Collections	Cumulative Collections
1	$509,703	$509,703
2	$641,593	$1,151,296
3	$188,562	$1,339,858
4	$88,643	$1,428,501
5	$90,199	$1,518,699
6	$91,786	$1,610,485
7	$93,405	$1,703,890
8	$95,057	$1,798,947
9	$96,742	$1,895,689
10	$98,461	$1,994,149
Total	$1,994,149	

Counties in the Region:

Gross receipts tax collections:

Year	Taxable Gross Receipts: During Construction	Taxable Gross Receipts: During Operations	Taxable Gross Receipts: Total	Gross Receipts Tax Collections
1	$155,337,961	$0	$155,337,961	$1,456,293
2	$194,172,451	$0	$194,172,451	$1,820,367
3	$38,834,490	$15,570,317	$54,404,807	$510,045
4	$0	$23,612,978	$23,612,978	$221,372
5	$0	$24,087,179	$24,087,179	$225,817
6	$0	$24,570,922	$24,570,922	$230,352
7	$0	$25,064,400	$25,064,400	$234,979
8	$0	$25,567,810	$25,567,810	$239,698
9	$0	$26,081,351	$26,081,351	$244,513
10	$0	$26,605,229	$26,605,229	$249,424
Total	$388,344,902	$191,160,185	$579,505,087	$5,432,860

Property tax collections:

Year	Value of Property on Tax Rolls	Property Tax Collections
1	$0	$0
2	$58,725,000	$236,931
3	$132,131,250	$533,094
4	$146,812,500	$592,327
5	$146,812,500	$592,327
6	$146,812,500	$592,327
7	$146,812,500	$592,327
8	$146,812,500	$592,327
9	$146,812,500	$592,327
10	$146,812,500	$592,327
Total		$4,916,312

Total tax collections for counties in the region:

Year	Annual Tax Collections	Cumulative Collections
1	$1,456,293	$1,456,293
2	$2,057,297	$3,513,591
3	$1,043,139	$4,556,730
4	$813,698	$5,370,428
5	$818,144	$6,188,573
6	$822,679	$7,011,252
7	$827,306	$7,838,557
8	$832,025	$8,670,582
9	$836,839	$9,507,422
10	$841,751	$10,349,172
Total	$10,349,172	

Property tax collections for school districts in the region:

Year	Value of Property on Tax Rolls	Property Tax Collections
1	$0	$0
2	$58,725,000	$218,598
3	$132,131,250	$491,845
4	$146,812,500	$546,495
5	$146,812,500	$546,495
6	$146,812,500	$546,495
7	$146,812,500	$546,495
8	$146,812,500	$546,495
9	$146,812,500	$546,495
10	$146,812,500	$546,495
Total		$4,535,907

Property tax collections for special taxing districts in the region:

Year	Value of Property on Tax Rolls	Property Tax Collections
1	$0	$0
2	$58,725,000	$107,574
3	$132,131,250	$242,042
4	$146,812,500	$268,936
5	$146,812,500	$268,936
6	$146,812,500	$268,936
7	$146,812,500	$268,936
8	$146,812,500	$268,936
9	$146,812,500	$268,936
10	$146,812,500	$268,936
Total		$2,232,165

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Articles of Organization

filed pursuant to §7-90-301, et seq. and §7-80-204 of the Colorado Revised Statutes (C.R.S)

1. Entity name: Luck of the Irish, LLC

(The name of a limited liability company must contain the term or abbreviation "limited liability company", "ltd. liability company", "limited liability co.", "ltd. liability co.", "limited", "llc", "l.l.c.", or "ltd." §7-90-601, C.R.S.)

2. Use of Restricted Words *(if any of these terms are contained in an entity name, true name of an entity, trade name or trademark stated in this document, mark the applicable box)*:

☐ "bank" or "trust" or any derivative thereof
☐ "credit union" ☐ "savings and loan"
☐ "insurance", "casualty", "mutual", or "surety"

3. Principal office street address: 6526 Wauconda Dr.
(Street name and number)

Larkspur (City) CO (State) 80118 (Postal/Zip Code)

(Province – if applicable) United States (Country – if not US)

4. Principal office mailing address (if different from above):

(Street name and number or Post Office Box information)

(City) *(State)* *(Postal/Zip Code)*

(Province – if applicable) *(Country – if not US)*

5. Registered agent name (if an individual): Greene (Last) Lynn (First) Chapman (Middle) (Suffix)

OR (if a business organization):

6. The person identified above as registered agent has consented to being so appointed.

7. Registered agent street address: 6526 Wauconda Dr
(Street name and number)

Larkspur (City) CO (State) 80118 (Postal/Zip Code)

8. Registered agent mailing address (if different from above):

(Street name and number or Post Office Box information)

(City) (State) (Postal/Zip Code)

(Province – if applicable) (Country – if not US)

9. Name(s) and mailing address(es) of person(s) forming the limited liability company:

(if an individual) Greene (Last) Lynn (First) Chapman (Middle) (Suffix)

OR (if a business organization)

6526 Wauconda Dr
(Street name and number or Post Office Box information)

Larkspur (City) CO (State) 80118 (Postal/Zip Code)

(Province – if applicable) United States (Country – if not US)

(if an individual) (Last) (First) (Middle) (Suffix)

OR (if a business organization)

(Street name and number or Post Office Box information)

(City) (State) (Postal/Zip Code)

(Province – if applicable) United States (Country – if not US)

(if an individual) (Last) (First) (Middle) (Suffix)

OR (if a business organization)

(Street name and number or Post Office Box information)

(City) (State) (Postal/Zip Code)

(Province – if applicable) United States (Country – if not US)

(If more than three persons are forming the limited liability company, mark this box ☐ *and include an attachment stating the true names and mailing addresses of all additional persons forming the limited liability company)*

10. The management of the limited liability company is vested in managers ☐
OR is vested in the members ☑

11. There is at least one member of the limited liability company.

12. *(Optional)* Delayed effective date: _____.
(mm/dd/yyyy)

13. Additional information may be included pursuant to other organic statutes such as title 12, C.R.S. If applicable, mark this box ☐ and include an attachment stating the additional information.

Notice:

Causing this document to be delivered to the secretary of state for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the secretary of state, whether or not such individual is named in the document as one who has caused it to be delivered.

14. Name(s) and address(es) of the individual(s) causing the document to be delivered for filing:

Greene (*Last*) Lynn (*First*) Chapman (*Middle*) (*Suffix*)

6526 Wauconda Dr.
(Street name and number or Post Office Box information)

Larkspur (*City*) CO (*State*) 80118 (*Postal/Zip Code*)

(*Province – if applicable*) United States (*Country – if not US*)

(The document need not state the true name and address of more than one individual. However, if you wish to state the name and address of any additional individuals causing the document to be delivered for filing, mark this box ☐ *and include an attachment stating the name and address of such individuals.)*

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Articles of Amendment

filed pursuant to §7-90-301, et seq. and §7-80-209 of the Colorado Revised Statutes (C.R.S.)

ID number: 20071456286

1. Entity name: Luck of the Irish, LLC
(If changing the name of the limited liability company, indicate name BEFORE the name change)

2. New Entity name: (if applicable) Lucky Corridor, LLC

3. Use of Restricted Words *(if any of these terms are contained in an entity name, true name of an entity, trade name or trademark stated in this document, mark the applicable box)*:
☐ "bank" or "trust" or any derivative thereof
☐ "credit union" ☐ "savings and loan"
☐ "insurance", "casualty", "mutual", or "surety"

4. Other amendments, if any, are attached.

5. If the limited liability company's period of duration as amended is less than perpetual, state the date on which the period of duration expires: _____ *(mm/dd/yyyy)*

OR

If the limited liability company's period of duration as amended is perpetual, mark this box: ☑

6. *(Optional)* Delayed effective date: _____ *(mm/dd/yyyy)*

Notice:

Causing this document to be delivered to the secretary of state for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the secretary of state, whether or not such individual is named in the document as one who has caused it to be delivered.

7. Name(s) and address(es) of the individual(s) causing the document to be delivered for filing:

greene (Last) | lynn (First) | chapman (Middle) | (Suffix)

6526 Wauconda Dr
(Street name and number or Post Office Box information)

Larkspur (City) | CO (State) | 80118 (Postal/Zip Code)

(Province – if applicable) | United States (Country – if not US)

(The document need not state the true name and address of more than one individual. However, if you wish to state the name and address of any additional individuals causing the document to be delivered for filing, mark this box ☐ and include an attachment stating the name and address of such individuals.)

Disclaimer:

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THIRD AMENDED AND RESTATED

LIMITED LIABILITY COMPANY

OPERATING AGREEMENT OF

LUCKY CORRIDOR, LLC

A COLORADO LIMITED LIABILITY COMPANY

EFFECTIVE AS OF APRIL 10, 2015.

THE INTERESTS DESCRIBED AND REPRESENTED BY THIS OPERATING AGREEMENT HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE "ACT") OR ANY APPLICABLE STATE SECURITIES LAWS ("STATE ACTS") AND ARE RESTRICTED SECURITIES AS THAT TERM IS DEFINED IN RULE 144 UNDER THE ACT. THE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, OR OTHERWISE TRANSFERRED EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT OR QUALIFICATION UNDER THE ACT AND APPLICABLE STATE ACTS OR PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER THE ACT AND APPLICABLE STATE ACTS, THE AVAILABILITY OF WHICH IS TO BE ESTABLISHED TO THE SATISFACTION OF THE COMPANY.

THIS Agreement amends and restates in its entirety the previous Second Amended and Restated Operating Agreement of the Company that was entered into on December 2, 2013. This Third Amended and Restated Operating Agreement is made and entered into this April 10, 2015 by and among the Company and each of the Members whose signatures appear on the signature page hereof (the "Members"). In consideration of the mutual covenants herein contained and for other good and valuable consideration, the Members and the Company (and each person who subsequently becomes an Equity Owner) hereby agree as follows:

ARTICLE 1
DEFINITIONS

The following terms used in this Agreement shall have the following meanings (unless otherwise expressly provided herein):

1.1 **Act.** Act shall mean the Colorado Limited Liability Company Act , as amended.

1.2 **Adjusted Capital Contributions**. Adjusted Capital Contributions shall mean an amount equal to such Equity Owner's Capital Contributions, if any, pursuant to Sections 8.1 and 8.2, less any Distributions made to such Equity Owner pursuant to Section 9.4(c).

1.3 **Adjusted Capital Account Deficit.** Adjusted Capital Account Deficit means the deficit balance in the Member's Capital Account as of the end of the relevant taxable year, after being decreased by the amounts which the Member is deemed obligated to restore pursuant to Regulation Sections 1.704-1(g)(i) and (i)(5) and increased by the items described in Regulation Section 1.704-1(b)(2)(ii)(d)(4), (5), and (6).

1.4 **Affiliate.** Affiliate shall mean, with respect to any Person: (i) any Person directly or indirectly controlling, controlled by, or under common control with such Person, (ii) any Person owning or controlling 10% or more of the outstanding voting interests of such Person, (iii) any officer, director, or general partner of such Person, or (iv) any Person who is an officer, director, general partner, trustee, or holder of 10% or more of the voting interests of any Person described in clauses (i) through (iii) of this sentence. For purposes of this definition, the term "controls," "is "controlled by," or "is under common control with" shall mean the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

1.5 **Agreement.** Agreement shall mean this First Amended and Restated Operating Agreement as originally executed and as amended from time to time.

1.6 **Articles of Organization.** The Articles of Organization of the Company as filed with the Secretary of State as the same may be amended from time to time.

1.7 **Capital Account.** Capital Account as of any given date shall mean the Capital Account of each Equity Owner as described in Article 8 and maintained to such date in accordance with this Agreement.

1.8 **Capital Contribution.** Capital Contribution shall mean any contribution to the capital of the Company in cash, services, property or other consideration by an Equity Owner whenever made. "Initial Capital Contribution" shall mean the initial contribution to the capital of the Company pursuant to this Agreement.

1.9 **Capital Transaction.** Capital Transaction means any transaction not in the ordinary course of business which results in the Company's receipt of cash or other consideration other than Capital Contributions, including, without limitation, proceeds of sales or exchanges or other dispositions of property not in the ordinary course of business, financings, re-financings, condemnations, recoveries of damage awards, and insurance proceeds.

1.10 **Code.** Code shall mean the Internal Revenue Code of 1986, as amended from time to time.

1.11 **Company.** Company shall mean LUCKY CORRIDOR, LLC.

1.12 **Company Property.** All assets (real or personal, tangible or intangible, including cash) of the Company.

1.13 **Depreciation.** For each Fiscal Year, an amount equal to the depreciation, amortization, or other cost recovery deduction allowable with respect to an asset for such Fiscal Year, except that if the Gross Asset Value of an asset differs from its adjusted basis for federal income tax purposes at the beginning of such Fiscal Year, Depreciation shall be an amount which bears the same ratio to such beginning Gross Asset Value as the federal income tax depreciation, amortization, or other cost recovery deduction for such Fiscal Year bears to such beginning adjusted tax basis; provided, however, that if the adjusted basis for federal income tax purposes of an asset at the beginning of such Fiscal Year is zero, Depreciation shall be determined with reference to such beginning Gross Asset Value using any reasonable method selected by the Managers.

1.14 **Distributable Cash.** All cash, whether revenues or other funds received by the Company, less the sum of the following to the extent paid or set aside by the Company: (i) all principal and interest payments on indebtedness of the Company and all other sums paid to lenders; (ii) all cash expenditures incurred incident to the normal operation of the Company's business; (iii) cash required in the reasonable discretion of the Managers to cover operating expenses of the Company; and (iv) Reserves.

1.15 **Distribution.** Any Transfer of Company Property from the Company to or for the benefit of an Equity Owner by reason of such Equity Owner's ownership of an Economic Interest.

1.16 **Economic Interest.** An Equity Owner's share of one or more of the Profits, Losses and Distributions pursuant to this Agreement and the Act, but shall not include any right to participate in the management or affairs of the Company, including, the right to vote on, consent to or otherwise participate in any decision of the Members or Managers.

1.17 **Economic Interest Owner.** The owner of an Economic Interest who is not a Member.

1.18 **Entity.** Any general partnership (including a limited liability partnership), limited partnership (including a limited liability limited partnership), limited liability company, corporation, joint venture, trust, business trust, cooperative or association or any foreign trust or foreign business organization.

1.19 **Equity Owner.** An Economic Interest Owner or a Member.

1.20 **Fiscal Year.** The taxable year of the Company as determined under the Code.

1.21 **Founding Members.** Founding Members include the Members listed on ***Exhibit B*** and their respective successors and assigns.

1.22 **Gift.** A gift, bequest, or other transfer for no consideration, whether or not by operation of law, except in the case of bankruptcy.

1.23 **Gifting Equity Owner.** Any Equity Owner who gifts, bequeaths or otherwise transfers for no consideration (by operation of law or otherwise, except with respect to bankruptcy) all or any part of its Ownership Interest.

1.24 **Gross Asset Value.** Gross Asset Value means, with respect to any asset, the asset's adjusted basis for federal income tax purposes, except as follows:

(a) The initial Gross Asset Value of any asset contributed by an Equity Owner to the Company shall be the gross fair market value of such asset, as determined by the contributing Member and the Managers, provided that the initial Gross Asset Values of the assets contributed to the Company pursuant to Section 8.1 hereof, and provided further that, if the contributing Member is a Manager, the determination of the fair market value of any other contributed asset other than initial Capital Contributions shall require the consent of the other Members owning a Majority Interest (determined without regard to the Voting Interest of such contributing Member);

(b) Gross Asset Values of all Company assets shall be adjusted to equal their respective gross fair market values, as reasonably determined by the Managers as of the following times: (i) the acquisition of an additional interest by any new or Existing Equity Owner in exchange for more than a de minimis contribution of property (including money); (ii) the Distribution by the Company to an Equity Owner of more than a de minimis amount of property as consideration for an Ownership Interest; and (iii) the liquidation of the Company within the meaning of Regulations Section 1.704_1(b)(2)(ii)(g); provided, however, that adjustments pursuant to clauses (i) and (ii) above shall be made only if the Managers reasonably determine that such adjustments are necessary or appropriate to reflect the relative economic interests of the Equity Owners in the Company;

(c) The Gross Asset Value of any Company asset Distributed to any Equity Owner shall be adjusted to equal the gross fair market value of such asset on the date of Distribution as reasonably determined by the distributee and the Managers, provided that, if the distributee is a Manager, the determination of the fair market value of the Distributed asset shall require the consent of the other Members owning a Majority Interest (determined without regard to the Voting Interest of the distributee Member); and

(d) The Gross Asset Values of Company assets shall be increased (or decreased) to reflect any adjustments to the adjusted basis of such assets pursuant to Section 734(b) or Section 743(b) of the Code, but only to the extent that such adjustments are taken into account in determining Capital Accounts pursuant to Regulation §1.704_1(b)(2)(iv)(m) and Section 8.3 and subparagraph (e) under the definition of Profits and Losses; provided, however, that Gross Asset Values shall not be adjusted pursuant to this subparagraph (d) of this definition to the extent that the Managers reasonably determine that an adjustment pursuant to subparagraph (b) of this definition is necessary or appropriate in connection with a transaction that would otherwise result in an adjustment pursuant to this subparagraph (d). If the Gross Asset Value of an asset has been determined or adjusted pursuant to subparagraph (a), (b) or (d) of this definition, then such Gross Asset Value shall thereafter be adjusted by the Depreciation taken into account with respect to such asset for purposes of computing Profits and Losses.

1.25 **Majority Interest.** One or more Voting Interests of Members which taken together exceed 50% of the aggregate of all Voting Interests.

1.26 **Managers.** Managers shall mean one or more managers designated as provided in Section 5.2.

1.27 **Member.** Each of the parties who executes a counterpart of this Agreement as a Member and each of the parties who may hereafter become a Member. If a Person is a Member immediately prior to the purchase or other acquisition by such Person of an Economic Interest, such Person shall have all of the rights of a Member with respect to such purchased or otherwise acquired Ownership Interest, as the case may be.

1.28 **Membership Interest.** A Member's entire interest in the Company, including such Member's Economic Interest and such other rights and privileges that the Member may enjoy by being a Member. For purposes of voting, membership interests may be combined into a voting Unit.

1.29 **Member Loan Nonrecourse Deductions.** Member Loan Nonrecourse Deductions means any Company deductions that would be Nonrecourse Deductions if they were not attributable to a loan made or guaranteed by a Member within the meaning of Regulation Section 1.704-2(i).

1.30 **Minimum Gain.** Minimum Gain has the meaning set forth in Regulation Section 1.704-2(d) and will be computed separately for each Member in a manner consistent with the Regulations under Code Section 704(b).

1.31 **Negative Capital Account.** Negative Capital Account means a Capital Account with a balance of less than zero.

1.32 **Nonrecourse Deductions.** Nonrecourse Deductions the meaning set forth in Regulation Section 1.704-2(b)(1). The amount of Nonrecourse Deductions for a taxable year of the Company equals the net increase, if any, in the amount of Minimum Gain during that taxable year, determined according to the provisions of Regulation Section 1.704-2(c).

1.33 **Nonrecourse Liability.** Nonrecourse Liability has the meaning set forth in Regulation Sections 1.704-2(b)(3) and 1.752-1(a)(2).

1.34 **Ownership Interest.** Ownership interest shall mean:

(a) in the case of a Member, the Member's Membership Interest; and (b) in the case of an Economic Interest Owner, the Economic Interest Owner's Economic Interest.

1.35 **Person.** Any individual or Entity, and the heirs, executors, administrators, legal representatives, successors, and assigns of such "Person" where the context so permits.

1.36 **Positive Capital Account.** Positive Capital Account means a Capital Account with a balance greater than zero.

1.37 **Profits and Losses.** Profits and Losses shall mean for each Fiscal Year of the Company an amount equal to the Company's net taxable income or loss for such year as determined for federal income tax purposes (including separately stated items) in accordance with the accounting method and rules used by the Company and in accordance with Section 703 of the Code with the following adjustments:

(a) Any items of income, gain, loss and deduction allocated to Equity Owners pursuant to Sections 9.1, 9.2 or 9.3 shall not be taken into account in computing Profits or Losses;

(b) Any income of the Company that is exempt from federal income tax and not otherwise taken into account in computing Profits and Losses (pursuant to this definition) shall be added to such taxable income or loss;

(c) Any expenditure of the Company described in Section 705(a)(2)(B) of the Code and not otherwise taken into account in computing Profits and Losses (pursuant to this definition) shall be subtracted from such taxable income or loss;

(d) In the event the Gross Asset Value of any Company asset is adjusted pursuant to subparagraphs (b) or (c) of the definition of Gross Asset Value, the amount of such adjustment shall be taken into account as gain or loss from the disposition of such asset for purposes of computing Profits and Losses;

(e) Gain or loss resulting from any disposition of any Company asset with respect to which gain or loss is recognized for federal income tax purposes shall be computed with reference to the Gross Asset Value of the asset disposed of, notwithstanding that the adjusted tax basis of such asset differs from its Gross Asset Value;

(f) In lieu of the depreciation, amortization and other cost recovery deductions taken into account in computing such taxable income or loss, there shall be taken into account Depreciation for such Fiscal Year; and

(g) To the extent an adjustment to the adjusted tax basis of any Company asset pursuant to Section 734(b) or Section 743(b) of the Code is required pursuant to Section

1.704_1(b)(2)(iv)(m)(4) of the Regulations to be taken into account in determining Capital Accounts as a result of a Distribution other than in liquidation of an Ownership Interest, the amount of such adjustment shall be treated as an item of gain (if the adjustment increases the basis of the asset) or loss (if the adjustment decreases the basis of the asset) from the disposition of the asset and shall be taken into account for purposes of computing Profits or Losses.

1.38 **Regulations.** Regulations shall include proposed, temporary and final regulations promulgated under the Code in effect as of the date of filing the Articles of Organization and the corresponding sections of any regulations subsequently issued that amend or supersede such regulations.

1.39 **Reorganization.** Reorganization shall mean the merger or conversion of the Company, or a sale or other disposition of assets of the Company, or sale or other disposition of Ownership Interests, or other transaction pursuant to which a Person or Persons acquire all or substantially all of the assets of, or Ownership Interests in, the Company in a single or series of related transactions, including without limitation, a merger or conversion of the Company into a corporation or other entity, whether or not such corporation or other entity has the same owners as the Company and whether or not additional capital is contributed to such corporation or other entity; provided, however, that a Reorganization shall not include the merger or conversion of the Company into a general partnership which is not a limited liability partnership.

1.40 **Reserves.** Reserves shall mean, with respect to any fiscal period, funds set aside or amounts allocated during such period to reserves which shall be maintained in amounts reasonably deemed sufficient and appropriate by the Managers for working capital and for payment of taxes, insurance, debt service or other costs or expenses incident to the ownership or operation of the Company's business.

1.41 **Sale or Sell.** A sale, assignment, exchange, or other transfer for consideration, pledge, hypothecation, or grant of a security interest, or change in ownership by reason of the merger, conversion or other transformation in the identity or form of business organization of the owner, regardless of whether such change or transformation is characterized by state law as not changing the identity of the owner.

1.42 **Secretary of State.** The secretary of state of the State.

1.43 **Selling Equity Owner.** Any Equity Owner which sells, assigns, or otherwise transfers for consideration all or any portion of its Membership Interest or Economic Interest.

1.44 **Sharing Ratio.** The ratio used throughout this Agreement to determine the sharing of certain items. The Sharing Ratio of the Members shall be set forth on ***Exhibit A*** attached hereto. The Sharing Ratios and ***Exhibit A*** may be adjusted from time to time by the Managers as provided in this Agreement.

1.45 **State.** State shall mean the State of Colorado.

1.46 **Transfer.** Transfer shall mean any Sale or Gift.

1.47 **Transferring Equity Owner.** Transferring Equity Owner shall mean a Selling Equity Owner and a Gifting Equity Owner.

1.48 **Two-Thirds Interest.** Two-thirds Interest shall mean one or more Voting Interests of Members which taken together exceed 66.67% of the aggregate of all Voting Interests.

1.49 **Unit 1 Required Return.** An amount equal to the sum of Capital Contributions made with respect to Membership Interests held by the Members owning Unit 1 plus one hundred percent (100%) of the Capital Contributions made with respect to Membership Interests held by the Members holding Unit 1.

1.50 **Voting Interest.** The Interests used to determine the Members' respective voting rights on certain matters as provided in this Agreement. As of the date of this Agreement, the Voting Interest of each Member is set forth on ***Exhibit A*** attached hereto. Voting interests that are part of a Unit shall vote as one unit and shall not vote their individual Membership Interests on a separate basis. The voting interests and ***Exhibit A*** shall be adjusted from time to time by the Managers as provided in this Agreement.

ARTICLE 2
FORMATION OF COMPANY

2.1 **Formation.** On October 3, 2007, Lynn Chapman Greene organized a limited liability company pursuant to the Act by executing and delivering articles of organization to the Secretary of State in accordance with and pursuant to the Act. The Company and the Members hereby forever discharge the organizer, and the organizer shall be indemnified by the Company and the Member from and against, any expense or liability actually incurred by the organizer by reason of having been the organizer of the Company.

2.2 **Name.** The name of the Company is LUCKY CORRIDOR, LLC.

2.3 **Principal Place of Business.** The principal place of business of the Company shall be 6526 Wauconda Dr., Larkspur, CO 80118. The Company may locate its places of business and registered office at any other place or places as the Managers may from time to time deem advisable.

2.4 **Registered Office and Registered Agent**. The Company's initial registered office and the name of the registered agent at such address shall be as set forth in the Articles. The registered office and registered agent may be changed from time to time by filing the address of the new registered office and/or the name of the new registered agent with the Secretary of State pursuant to the Act.

2.5 **Term.** The Company shall continue in existence until it terminates in accordance with the provisions of this Agreement or the Act.

ARTICLE 3
BUSINESS OF COMPANY

3.1 **Permitted Business.** The business of the Company shall be:

(a) To acquire, improve, manage, operate and dispose of real property and to accomplish any lawful business whatsoever, or which shall at any time appear conducive to or expedient for the protection or benefit of the Company and its assets.

(b) To exercise all other powers necessary to or reasonably connected with the Company's business which may be legally exercised by limited liability companies under the Act.

(c) To engage in all activities necessary, customary, convenient, or incident to any of the foregoing.

ARTICLE 4

NAMES AND ADDRESSES OF EQUITY OWNERS

The names and addresses of the Members of the Company are set forth on ***Exhibit A*** attached hereto. Upon admission of new Members according to the terms and conditions of this Agreement, ***Exhibit A*** shall be adjusted accordingly by the Managers. The names and addresses of other Equity Owners shall be maintained as provided under Section 13.1.

ARTICLE 5
RIGHTS AND DUTIES OF MANAGERS

5.1 **Management.** The business and affairs of the Company shall be managed by its Managers. Except for situations in which the approval of the Members is expressly required by this Agreement or by nonwaivable provisions of applicable law, the Managers shall have full and complete authority, power and discretion to manage and control the business, affairs and properties of the Company, to make all decisions regarding those matters and to perform any and all other acts and activities customary or incident to the management of the Company's business. At any time when there is more than one Manager, any one Manager may take any action permitted to be taken by the Managers, unless the approval of more than one of the Managers is expressly required pursuant to this Agreement or the Act or unless a majority of the Managers determine in a writing provided to the remaining Manager(s) prior to such Manager(s) taking a specified action that the approval of more than one of the Managers is required in order to take such action. Unless authorized to do so by this Agreement or by the Managers, no attorney-in-fact, employee or other agent of the Company shall have any power or authority to bind the Company in any way, to pledge its credit or to render it liable pecuniarily for any purpose.

5.2 **Number, Tenure and Qualifications.** The Company shall initially have one Manager who shall be **LYNN CHAPMAN GREENE**. The number of Managers shall be fixed from time to time by the affirmative vote of Members holding at least a Two-Thirds Interest, but in no instance shall there be less than one Manager. Each Manager shall hold office until such Manager resigns pursuant to Section 5.11 or is removed pursuant to Section 5.12. Managers shall be appointed by the affirmative vote of Members holding at least a Majority Interest. Managers need not be residents of the State or Members.

5.3 **Certain Powers of Managers.** Without limiting the generality of Section 5.1 but subject to the limitations of Section 5.4, Section 5.5 and Section 5.6, the Managers shall have power and authority, on behalf of the Company:

(a) To acquire property from any Person as the Managers may determine. The fact that such Person is a Manager, Equity Owner, or Affiliate shall not prohibit the Managers from dealing with that Person;

(b) To borrow money for the Company from banks, other lending institutions, the Managers, Equity Owners, or Affiliates of the Managers or Equity Owners on such terms as the Managers deem appropriate, and in connection therewith, to hypothecate, encumber and grant security interests in Company Property to secure repayment of the borrowed sums;

(c) To purchase liability, key man life insurance and other insurance to protect the Company's property and business;

(d) To hold and own any Company real and/or personal properties in the name of the Company;

(e) To invest any Company funds (by way of example but not limitation) in time deposits, short-term governmental obligations, commercial paper or other investments;

(f) To execute on behalf of the Company all instruments and documents, including, without limitation, checks, drafts, notes and other negotiable instruments; mortgages or deeds of trust; security agreements; financing statements; documents providing for the acquisition, mortgage or disposition of Company Property; assignments; bills of sale; leases; partnership agreements; operating (or limited liability company) agreements of other limited liability companies; and any other instruments or documents necessary, in the reasonable opinion of the Managers, to the conduct of the business of the Company;

(g) To employ accountants, legal counsel, managing agents or other experts to perform services for the Company and to compensate them from Company funds;

(h) To enter into any and all other agreements on behalf of the Company, with any other Person for any purpose, in such forms as the Managers may approve;

(i) To execute and file such other instruments, documents and certificates which may from time to time be required by the laws of the State or any other jurisdiction in which the Company shall determine to do business, or any political subdivision or agency thereof, to effectuate, implement, continue and defend the valid existence of the Company;

(j) To cause the Company to be a party to a Reorganization, joint venture other capital transaction; and

(k) To do and perform all other acts as may be necessary or appropriate to the conduct of the Company's business.

5.4 **Limitations on Authority-Two Thirds Interest Approval Required.** Notwithstanding any other provision of this Agreement and subject to the limitations set forth in Section 5.5 and 5.6 below, the Managers shall not cause or commit the Company to do any of the following without the express written consent of Members holding a Two-Thirds Interest:

(a) Sell, Transfer or otherwise dispose all or substantially all of the Company Property or any Company Property other than in the ordinary course of business;

(b) Create a new class of Membership Interests, admit new Members, issue additional Membership Interests to existing Members or otherwise issue any class or type of equity interest or interest convertible or exchangeable into an equity interest in the Company ("Approved Financing Transaction");

(c) Mortgage, pledge, or grant a security interest (collectively, "pledge") in any Company Property to the extent that the secured indebtedness from such pledge would exceed $1,000,000;

(d) Incur or refinance any indebtedness for money borrowed by the Company, whether secured or unsecured and including any indebtedness for money borrowed from a Member if, after such financing, the aggregate indebtedness of the Company would exceed $1,000,000;

(e) Incur any liability or make any single expenditure or series of related expenditures in an amount exceeding $1,000,000;

(f) Construct any capital improvements, repairs, alterations or changes involving an amount in excess of $1,000,000;

(g) Lend money to or guaranty or become surety for the obligations of any Person;

(h) Compromise or settle any claim against or inuring to the benefit of the Company involving an amount in controversy in excess of $1,000,000; or

(i) Cause the Company to commence a voluntary case as debtor under the United States Bankruptcy Code.

5.5 **Limitation on Authority—Unit 1 Members' Approval Required.** Notwithstanding any other provision of this Agreement, the Managers shall not cause or commit the Company to Sell or otherwise dispose of all or substantially all of the Company Property in any transaction which will result in distributions to the Members holding Unit 1 Membership Interests that are less than the Unit 1 Required Return without the express written consent of one

or more Voting Interests which taken together exceed 66.67% of the aggregate of all Voting Interests held by Members owning Unit 1 Membership Interests voting as one group. In any transaction yielding distributions equal to or greater than the Unit 1 Required Return , they shall have no special voting rights other than those stated in Section 5.4 above for all Members.

5.6 **Limitation on Authority--Founding Members' Approval Required.** Notwithstanding any other provision in this Agreement, the Managers shall not cause or commit the Company to issue any equity securities, including but not limited to Membership Interests, if such issuance would cause the Founding Members as a group to hold less than 10% of the total Sharing Ratios or Voting Interests held by all Members immediately following such issuance. The rights of the Founding Members in this Section 5.6 may be waived by the written approval of holders of two thirds (2/3) of the Voting Interests held by Founding Members taken as one group.

5.7 **Liability for Certain Acts.**

(a) The Managers do not, in any way, guarantee the return of the Equity Owners' Capital Contributions or a profit for the Equity Owners from the operations of the Company.

(b) The Managers shall not be liable to the Company or to any Member for any loss or damage sustained by the Company or any Member (or successor thereto), except to the extent, if any, that the loss or damage shall have been the result of fraud, deceit, willful misconduct, or breach of this Agreement.

5.8 **Managers and Members Have No Exclusive Duty to Company.** The Managers and Members shall have no exclusive duty to act on behalf of the Company. Each Manager and Member may have other business interests and may engage in other activities in addition to those relating to the Company. Neither the Company nor any Manager shall have any right, by virtue of this Agreement, to share or participate in any other investments or activities of any other Manager or Member. Neither any Manager nor any Equity Owner shall incur any liability to the Company or to any of the Equity Owners as a result of engaging in any other business or venture.

5.9 **Bank Accounts.** The Managers may from time to time open bank accounts in the name of the Company, and the Managers shall be the sole signatory thereon, unless the Managers determine otherwise.

5.10 **Indemnity of the Managers, Employees and Other Agents.**

(a) The Company shall indemnify each Manager and make advances for expenses to the maximum extent permitted under the Act, except to the extent the claim for which indemnification is sought results from an act or omission for which the Manager may be held liable to the Company or a Member under Section 5.7(b). The Company shall indemnify its employees and other agents who are not Managers to the fullest extent permitted by law, provided that such indemnification in any given situation is approved by Members owning a Majority Interest.

(b) Expenses (including legal fees and expenses) incurred by a Manager in defending any claim, demand, action, suit or proceeding subject to subsection (a) above shall be paid by the Company in advance of the final disposition of such claim, demand, action, suit or proceeding upon receipt of an undertaking (which need not be secured) by or on behalf of the Manager to repay such amount if it shall ultimately be finally determined by a court of competent jurisdiction and not subject to appeal, that the Manager is not entitled to be indemnified by the Company as authorized hereunder.

5.11 **Resignation.** Any Manager may resign at any time by giving written notice to the Members. The resignation of any Manager shall take effect upon receipt of notice thereof or at such later time as shall be specified in such notice; and, unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective. The resignation of a Manager who is also an Equity Owner shall not affect the Manager's rights as an Equity Owner.

5.12 **Removal.** At a meeting called expressly for that purpose, a Manager may be removed with or without cause at any time by Members holding a Two-Thirds Interest. The removal of a Manager who is also a Member shall not affect the Manager's rights as a Member and shall not constitute a withdrawal of a Member.

5.13 **Vacancies.** Any vacancy occurring for any reason in the number of Managers shall be filled by the affirmative vote of Members holding a Majority Interest (determined without regard to any Voting Interest owned by a Manager who was removed pursuant to Section 5.12 during the preceding 24-month period). Any Manager's position to be filled by reason of an increase in the number of Managers shall be filled by the affirmative vote of a Majority Interest.

5.14 **Compensation, Reimbursement, Organization Expenses.**

(a) The compensation of the Managers shall be fixed from time to time by an affirmative vote of Members holding at least a Majority Interest, and no Manager shall be prevented from receiving such compensation by reason of the fact that he is also a Member. Upon the submission of appropriate documentation each Member shall be reimbursed by the Company for reasonable out-of-pocket expenses incurred on behalf, and at the request, of the Company.

(b) The Company shall reimburse Lynn Chapman Greene for the legal and other expenses reasonably incurred by them in connection with the formation, organization and capitalization of the Company, including the legal fees incurred in connection with negotiating and drafting this Agreement.

(c) The Managers may cause the Company to make an appropriate election to treat the expenses incurred by the Company in connection with the formation and organization of the Company to be amortized under the 60-month period beginning with the month in which the Company begins business to the extent that such expenses constitute "organizational expenses" of the Company within the meaning of Code Section 709(b)(2).

5.15 **Annual Operating Plan.** The Managers shall prepare for the approval of the Members each Fiscal Year (no later than 30 days prior to the end of the then current Fiscal Year)

a business plan ("Annual Operating Plan") for the next Fiscal Year, setting forth in detail the Company's anticipated activities, expenditures, accomplishments, and other financial requirements of the Company for such year. Any such Annual Operating Plan shall also include such other information or other matters necessary in order to inform the Members of the Company's business and to enable the Members to make an informed decision with respect to their approval of such Annual Operating Plan. An offering memorandum prepared in connection with the offer and sale of the Company's equity securities shall constitute an Annual Operating Plan for purposes of this Section 5.15. The Members shall review the proposed Operating Plan and shall offer any revisions thereto within 30 days. After the final Operating Plan has been approved by the Members, the Managers shall implement the Annual Operating Plan. The Annual Operating Plan shall act as a reasonably projected budget for the Managers, however the Managers may make any expenditure or incur any obligation, whether or not such expenditure or obligation is provided for in an Annual Operating Plan subject to the provisions of this Agreement. If the Members are not able to agree on an Annual Operating Plan for any year, each line item in the Annual Operating Plan for the prior year shall be increased by the percentage increase in the CPI Index from the first day for which the previous Annual Operating Plan was in effect to the first day for which the new Annual Operating Plan is to be in effect. As used herein, "CPI Index" shall mean the Consumer Price Index for All Items All Urban Consumers (DPI-U) (1982-84 = 100) for the United States, as published by the United States Department of Labor's Bureau of Labor Statistics (the "Bureau"). Should the Bureau discontinue the publication of the above index, or publish the index less frequently, or alter the index in some other manner, then the Managers shall, from time to time, adopt a substitute index or substitute procedure which reasonably reflects and monitors consumer prices, and the resulting plan shall be the Annual Operating Plan for the current year.

5.16 Right To Rely on the Managers.

(a) Any Person dealing with the Company may rely (without duty of further inquiry) upon a certificate signed by any Manager as to:

(i) The identity of any Manager or Equity Owner;

(ii) The existence or nonexistence of any fact or facts which constitute a condition precedent to acts on behalf of the Company by any Manager or which are in any other manner germane to the affairs of the Company;

(iii) The Persons who are authorized to execute and deliver any instrument or document of the Company; or

(b) Any act or failure to act by the Company or any other matter whatsoever involving the Company or any Equity Owner.

ARTICLE 6
RIGHTS AND OBLIGATIONS OF EQUITY OWNERS

6.1 **Limitation of Liability.** Except as otherwise provided by the non-waivable provisions of the Act, this Agreement and other applicable law, each Equity Owner's liability shall be limited to the maximum extent possible.

6.2 **List of Equity Owners.** Upon written request of any Member made in good faith and for a purpose reasonably related to the Member's rights as Member under this Agreement (which reason shall be set forth in the written request), the Managers shall provide a list showing the names, addresses and Ownership Interests of all Equity Owners. Economic Interest Owners shall have no rights to information under this Section 6.2.

6.3 **Equity Owners Have No Agency Authority**. Except as expressly provided in this Agreement, the Equity Owners (in their capacity as Equity Owners) shall have no agency authority on behalf of the Company.

6.4 **Company Books.** In accordance with Section 9.10 herein, the Managers shall maintain and preserve for five years all accounts, books, and other relevant Company documents. Upon reasonable request, each Member shall have the right, during ordinary business hours, to inspect and copy such Company documents at the requesting Member's expense.

6.5 **Priority and Return of Capital**. Except as may be expressly provided in Article 9, no Equity Owner shall have priority over any other Equity Owner, either as to the return of Capital Contributions or as to Profits, Losses or Distributions; provided, however, that this Section 6.5 shall not apply to loans (as distinguished from Capital Contributions) which an Equity Owner has made to the Company.

ARTICLE 7
ACTIONS OF MEMBERS

Unless otherwise required in this Agreement, actions and consents of the Members may be communicated or reflected orally, electronically or in writing, and no action need be taken at a formal meeting. Members may, but are not required to, meet from time to time on such notice, if any, as the Member convening the meeting chooses to give. Any consent required to be in writing may be evidenced by separate written counterparts. Any action of the Members shall be effective when a sufficient number of Members to take such action communicate their consent to the action to the Managers.

MEETINGS OF MEMBERS

7.1 **No Required Meetings.** The Members may, but shall not be required to hold any annual, periodic or other formal meetings. However, meetings of the Members may be called by any Manager, who is also a Member, or by any Member or Members holding at least 10% of the Voting Interests.

7.2 **Place of Meetings.** The Member or Members calling the meeting may designate any place within the State as the place of meeting for any meeting of the Members; and Members holding a Two-Thirds Interest may designate any place outside the State as the place of meeting for any meeting of the Members. If no designation is made, or if a special meeting be otherwise called, the place of meeting shall be the principal executive office of the Company in the State.

7.3 **Notice of Meetings.** Except as provided in Section 7.4, written notice stating the place, day and hour of the meeting and the purpose or purposes for which the meeting is called shall be delivered not less than 10 nor more than 50 days before the date of the meeting, either personally or by mail, by or at the direction of the Member or Members calling the meeting, to each Member entitled to vote at such meeting.

7.4 **Meeting of all Members.** If all of the Members shall meet at any time and place, either within or outside of the State, and consent to the holding of a meeting at such time and place, such meeting shall be valid without call or notice, and at such meeting lawful action may be taken.

7.5 **Record Date.** For the purpose of determining Members entitled to notice of or to vote at any meeting of Members or any adjournment thereof, or Members entitled to receive payment of any Distribution, or in order to make a determination of Members for any other purpose, the date on which notice of the meeting is mailed or the date on which the resolution declaring such Distribution is adopted, as the case may be, shall be the record date for such determination of Members. When a determination of Members entitled to vote at any meeting of Members has been made as provided in this Section 7.5, such determination shall apply to any adjournment thereof.

7.6 **Quorum.** Members holding at least a Two-Thirds Interest, represented in person or by proxy, shall constitute a quorum at any meeting of Members. In the absence of a quorum at any such meeting, a majority of the Voting Interests so represented may adjourn the meeting from time to time for a period not to exceed 60 days without further notice. However, if the adjournment is for more than 60 days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each Member of record entitled to vote at the meeting. At such adjourned meeting at which a quorum shall be present or represented, any business may be transacted which might have been transacted at the meeting as originally noticed. The Members present at a duly organized meeting may continue to transact business until adjournment, notwithstanding the withdrawal during such meeting of that number of Voting Interests whose absence would cause less than a quorum.

7.7 **Manner of Acting.** If a quorum is present, the affirmative vote of Members holding a Majority Interest shall be the act of the Members, unless the vote of a greater or lesser proportion or number is otherwise required by the Act, by the Articles of Organization, or by this Agreement. Unless otherwise expressly provided herein, Members who have an interest (economic or otherwise) in the outcome of any particular matter upon which the Members vote or consent may vote or consent upon any such matter and their Voting Interest, vote or consent, as the case may be, shall be counted in the determination of whether the requisite matter is approved by the Members.

7.8 **Proxies.** At all meetings of Members, a Member who is qualified to vote may vote in person or by proxy executed in writing by the Member or by a duly authorized attorney-in-fact. Such proxy shall be filed with the Managers before or at the time of the meeting. No proxy shall be valid after eleven months from the date of its execution, unless otherwise provided in the proxy.

7.9 **Action by Members Without a Meeting.** Action required or permitted to be taken at a meeting of Members may be taken without a meeting if the action is evidenced by one or more written consents or approvals describing the action taken and signed by Members holding sufficient Voting Interests, as the case may be, to approve such action had such action been properly voted on at a duly called meeting of the Members. Action taken under this Section 7.9 is effective when Members with the requisite Interests or Voting Interests, as the case may be, have signed the consent or approval, unless the consent specifies a different effective date. The record date for determining Members entitled to take action without a meeting shall be the date the first Member signs a written consent.

7.10 **Waiver of Notice.** When any notice is required to be given to any Member, a waiver thereof in writing signed by the person entitled to such notice, whether before, at, or after the time stated therein, shall be equivalent to the giving of such notice.

ARTICLE 8
CONTRIBUTIONS TO THE COMPANY AND CAPITAL ACCOUNTS

8.1 **Members' Capital Contributions.** Unless previously contributed, each Equity Owner shall contribute such amount as is set forth in Exhibit A hereto as its share of the Initial Capital Contribution not later than 3 days after such party has executed this Agreement and delivered an executed copy of same to the Managers. The Managers shall amend ***Exhibit A*** from time to time as necessary to reflect the admission of new Members, additional Capital Contributions or terms, conditions, rights and obligations of new and existing Members. Such amendments may be made without the consent of the Members.

8.2 **Additional Contributions.** Except for Initial Capital Contributions, no Equity Owner shall be required to make any Capital Contributions. To the extent unanimously approved by the Managers, from time to time, the Equity Owners may be permitted to make additional Capital Contributions if and to the extent they so desire, and if the Managers determine that such additional Capital Contributions are necessary or appropriate in connection with the conduct of the Company's business (including without limitation, expansion or diversification). In such event, the Equity Owners shall have the opportunity (but not the obligation) to participate in such additional Capital Contributions proportionate to their Sharing Ratios.

8.3 **Capital Accounts.**

(a) A separate Capital Account shall be maintained for each Equity Owner. Each Equity Owner's Capital Account shall be increased by:

(1) the amount of money contributed by such Equity Owner to the Company;

(2) the fair market value of property contributed by such Equity Owner to the Company (net of liabilities secured by such contributed property that the Company is considered to assume or take subject to under Section 752 of the Code);

(3) allocations to such Equity Owner of Profits; and (4) any items in the nature of income and gain which are specially allocated to the Equity Owner pursuant to Sections 9.1, 9.2 and 9.3. Each Equity Owner's Capital Account shall be decreased by:

(4) the amount of money Distributed to such Equity Owner by the Company;

(5) the fair market value of property Distributed to such Equity Owner by the Company (net of liabilities secured by such Distributed property that such Equity Owner is considered to assume or take subject to under Section 752 of the Code); and

(6) any items in the nature of deduction and loss that are specially allocated to the Equity Owner pursuant to Sections 9.1, 9.2 and 9.3; and (4) allocations to such Equity Owner of Losses.

(b) Not limiting the other rights and duties of a transferee of an Ownership Interest pursuant to this Operating Agreement, in the event of a permitted sale or exchange of an Ownership Interest in the Company, (1) the Capital Account of the transferor shall become the Capital Account of the transferee to the extent it relates to the transferred Ownership Interest in accordance with Section 1.704-1(b)(2)(iv) of the Regulations; and (2) the transferee shall be treated as the transferor for purposes of allocations and distributions pursuant to Article 9 to the extent that such allocations and distributions relate to the transferred Ownership Interest.

(c) The manner in which Capital Accounts are to be maintained pursuant to this Section 8.3 is intended to comply with the requirements of Section 704(b) of the Code and the Regulations promulgated thereunder. If in the opinion of the Company's accountants the manner in which Capital Accounts are to be maintained pursuant to the preceding provisions of this Section 8.3 should be modified in order to comply with Section 704(b) of the Code and the Regulations thereunder, then, notwithstanding anything to the contrary contained in the preceding provisions of this Section 8.3, the method in which Capital Accounts are maintained shall be so modified; provided, however, that any change in the manner of maintaining Capital Accounts shall not materially alter the economic agreement between or among the Equity Owners.

8.4 Withdrawal or Reduction of Equity Owners' Contributions to Capital.

(a) An Equity Owner shall not receive a Distribution of any part of its Capital Contribution to the extent such Distribution would violate Section 9.5.

(b) An Equity Owner, irrespective of the nature of its Capital Contribution, does not have the right to demand and receive property other than cash in return for its Capital Contribution.

8.5 **Remedies for Nonpayment of Additional Capital Contributions.** Failure of any Equity Owner to make full and timely payment to the Company of any additional Capital Contribution properly committed to hereunder shall constitute a breach of this Agreement (and any such Equity Owner shall be hereinafter referred to as a "Defaulting Equity Owner"). Upon such a breach, the Managers shall promptly give notice (the "Default Notice") to all Equity Owners of: (a) the breach and (b) a Special Meeting to discuss the appropriate course of action. The Equity Owners who timely satisfied their obligation to make the required Additional Capital Contributions (the "Non-Defaulting Equity Owners") may, upon the affirmative vote of those Non-Defaulting Equity Owners which are Members holding a majority of the Voting Interests owned by all Non-Defaulting Equity Owners which are Members, pursue the following courses of action:

(a) The Nondefaulting Equity Owners, shall have an option, but no obligation, to loan to the Company within 60 days after the Default Notice is given (the "Loan Decision Period") the amount which the Defaulting Equity Owners have failed to contribute to the Company (proportionate to the ratio of the interest in Profits held by each respective Equity Owner electing to loan funds, to the interest in Profits Interests held by all Equity Owners electing to advance funds). The amount that is loaned by any Nondefaulting Equity Owner shall, at the election of each such Equity Owner (exercised by written notice to the Defaulting Equity Owner and the Company at the time the loan is made), be treated in either of the following manners:

(i) The loan may be treated as a loan to the Company, bearing interest at a floating rate equal to five percentage points higher than the prime commercial lending rate in effect from time to time at the principal bank used by the Company for banking and borrowing purposes (the "default rate"), payable out of any funds paid by, or withheld by the Company from, the Defaulting Equity Owner to cure the breach, or at such other time as the Company and the lending Equity Owners may agree. Payments shall be credited first to accrued interest. The promissory note or other loan documentation shall contain such other terms and conditions as mutually agreed by the Company and the lending Equity Owners.

(ii) The loan may be treated as a loan to the Defaulting Equity Owner, followed by a contribution of the borrowed funds to the Company by the Defaulting Equity Owner curing the breach in whole or in part. Such a loan shall be payable on demand and bear interest at the default rate provided above. Until the Defaulting Equity Owner's debt to any Nondefaulting Equity Owners, together with interest thereon, is paid in full, any funds or property which would otherwise be Distributed to the Defaulting Equity Owner from time to time hereunder shall be paid to such Nondefaulting Equity Owners, according to their respective shares of loans (which are treated as loans to the Defaulting Equity Owner). Any such payments shall be deemed to be Distributions to the Defaulting Equity Owner by the Company, followed by appropriate payments by the Defaulting Equity Owner to the respective Nondefaulting Equity Owners. Payments shall be credited first to accrued interest. Payments to Nondefaulting Equity Owners of loans by them pursuant to either Section 8.5(a)(i) or 8.5(a)(ii) shall be made pari passu.

(b) If the Nondefaulting Equity Owners do not make loans pursuant to Section 8.5(a) in an amount at least equal to the amount which the Defaulting Equity Owner failed to contribute (and the Defaulting Equity Owner has not cured said breach prior to the expiration of the Loan Decision Period), then promptly upon the expiration of the Loan Decision Period, the Managers shall give notice (the "Default Purchase Option Notice" as more fully described below) to all of the Equity Owners. The Nondefaulting Equity Owners shall have the option (but no obligation) for the 60-day period commencing upon the date of the Default Purchase Option Notice to purchase all, but not less than all, of a Defaulting Equity Owner's Interest as provided in this Section 8.5(b). The option granted in this Section 8.5(b) (the "Default Purchase Option") shall be exercisable in the following manner and in accordance with the following terms:

(i) The Default Purchase Option Notice shall notify the Nondefaulting Equity Owners that they have the opportunity to purchase all, but not less than all, of the Ownership Interest owned by the Defaulting Equity Owner ("Available Ownership Interest").

(c) A Nondefaulting Equity Owner wishing to exercise the Default Purchase Option shall so notify (the "Exercise Notice") the Defaulting Equity Owner and the Company within 45 days after the date that the Default Purchase Option Notice is given.

(d) Each Nondefaulting Equity Owner electing to exercise the Default Purchase Option (each an "Electing Equity Owner" and collectively the "Electing Equity Owners") shall be entitled to purchase a portion of the Available Ownership Interest proportionate to the Electing Equity Owner's sharing ratio.

(1) The closing for any purchase and sale of the Available Ownership Interest pursuant to this Section 8.5(b) shall take place within 90 days after the date that the Default Purchase Option Notice is given. The specific time and place of closing shall be as agreed by the Electing Equity Owners and the Defaulting Member; provided, however, that in the absence of agreement, the closing shall take place at the Company's principal office.

(2) The price for the Defaulting Equity Owner's Ownership Interest (the "Default Buyout Price") shall be equal to 90% of the Defaulting Equity Owner's Capital Account balance as of the last day of the month preceding the month in which the Exercise Notice is given. For purposes of this Section 8.5(b), the Company's independent certified public accountant shall Determine the balance in the Defaulting Equity Owner's Capital Account (without regard to any optional adjustments which may, but are not required, to be made for any purpose, including any optional adjustments that may be made in order to reflect the fair market value of Company Property), and such determination shall be final for purposes of this Agreement.

(3) Upon any purchase of a Defaulting Equity Owner's Ownership Interest pursuant to this Section 8.5(b), the Default Buyout Price may be paid at closing in immediately available funds, or, in the sole discretion of each Electing Equity Owner, by delivering at closing a note issued by the Electing

Members as payment for the portion of the Buyout Price attributable to the portion of the Ownership Interest to be purchased by the Electing Equity Owner. The notes issued as payment for the Default Buyout Price shall be negotiable promissory notes of the Company or of the Electing Equity Owner, as appropriate, bearing interest per annum at a floating rate one percentage point over the prime commercial lending rate in effect from time to time at the principal bank used by the Company for banking and borrowing purposes. Any such notes shall provide for payments of principal and interest in equal consecutive monthly installments over a period of not more than five years from the date of issuance of such note, commencing from the date of issuance of such note. Any such notes shall be prepayable without penalty, in whole or in part, with prepayments applied to the last installment or installments coming due. Such notes shall provide that if any installment of principal or interest is not paid when due or if suit is brought thereon, the maker will pay all costs of collection, including reasonable attorneys' fees.

(4) After purchasing an Available Ownership Interest, each Electing Equity Owner shall make an additional Capital Contribution to the Company in an amount equal to the proportionate share of the Defaulted Capital Contribution attributable to the portion of the Available Ownership Interest purchased by the Electing Equity Owner.

ARTICLE 9
ALLOCATIONS, INCOME TAX, DISTRIBUTIONS, ELECTIONS AND REPORTS

9.1 **Distributions of Cash Flow and Allocations of Profit and Loss Oher Than Capital Transactions.**

(A) Profit and Loss (Other than from a Capital Transaction). After giving effect to the special allocations set forth in Section 9.3 ("Special Allocations"), for any taxable year of the Company, Profit and Loss shall be allocated to the Members in proportion to their Sharing Ratios.

(B) Distributable Cash. Distributable Cash for each taxable year of the Company shall be distributed to the Members in proportion to their Sharing Ratios no later than seventy-five (75) days after the end of the taxable year.

9.2 **Distributions of Capital Proceeds and Allocation of Profit and Loss from Capital Transactions.**

(A) Profit. After giving effect to the Special Allocations, Profit from a Capital Transaction shall be allocated to the Members in the following order of priority:

(1) Proportionally to those with a Negative Capital Account, until all Deficit Capital Accounts have been reduced to zero.

(2) Proportionally to those until their remaining, if any, Adjusted Capital Contributions have been paid in full.

(3) To Members in proportion to their Sharing Ratios.

(B) Loss. After giving effect to the Special Allocations, Loss from a Capital Transaction shall be allocated in the following order of priority:

(1) Proportionally to those with Positive Capital Accounts, until all Positive Capital Accounts have been reduced to zero.

(2) To the Members in proportion to their Sharing Ratios.

(C) Capital Proceeds. Proceeds shall be distributed and applied by the Company in the following order and priority:

(1) To the payment of all expenses of the Company incident to the Capital Transaction; then

(2) To the payment of debts and liabilities of the Company then due and outstanding (including all debts due to any Member); then

(3)To the establishment of any reserves which the Manager deems necessary for liabilities or obligations of the Company; then

(4) The balance shall be distributed in the following order of priority:

(a) Proportionally to the Members until their remaining, if any, Adjusted Capital Contributions have been paid in full;

(b) If any Member has a Positive Capital Account after the distributions made pursuant to (a) above and before any further allocation of Profit pursuant to Section 9.2(A)(3), to those Members in proportion to their Positive Capital Accounts; then

(c) The balance, to the Members in proportion to their Sharing Ratios.

9.3 **Special Allocations.**

(A) Deficit Restoration Obligation. If a Member has a deficit balance in such Member's Capital Account or is deemed obligated to restore a deficit under applicable law, including but not limited to, Regulation Sections 1.704-2(g)(1) and 1.704-2(i)(5) (determined after taking into account any changes in the Minimum Gain and the Member Minimum Gain during such Fiscal Year), then such Member shall have an obligation to restore such deficit upon liquidation or prior to Transfer of such Member's Membership Interest.

(B) Minimum Gain Chargeback. It is the intent of the parties hereto that any allocation pursuant to this Section 3.3(B) shall constitute a "minimum gain chargeback" under Regulation Section 1.704-2(f). Except as set forth in Regulation Section 1.704-2(f)(2), (3), and (4), if, during any taxable year, there is a net decrease in Minimum Gain, each Member, prior to any other allocation pursuant to this Schedule A, shall be specially allocated items of gross income and gain for such taxable year (and, if necessary, subsequent taxable years) in an amount equal to that Member's share of the net decrease of Minimum Gain, computed in accordance with Regulation Section 1.704-2(g)(2). Allocations of gross income and gain pursuant to this Section 3.3(B) shall be made first from gain recognized from the disposition of Company assets subject to nonrecourse liabilities (within the meaning of the Regulations promulgated under Code Section 752), to the extent of the Minimum Gain attributable to those assets, and thereafter, from a pro rata portion of the Company's other items of income and gain for the taxable year.

(C) Gross Income Allocation. In the event a Member has a deficit Capital Account at the end of any Allocation Year which is in excess of the sum of: the amount such Member is obligated to restore pursuant to the penultimate sentences of Regulations Sections 1.704 2(g)(1) and 1.704 2(i)(5), each such Member shall be specially allocated items of income and gain in the amount of such excess prior to dissolution of the Company, provided that an allocation pursuant to this section shall be made only if and to the extent that such Member would have a deficit Capital Account in excess of such sum after all other allocations provided for in this Article have been made as if this section was not in the Agreement.

(D) Contributed Property and Book-Ups. In accordance with Code Section 704(c) and the Regulations thereunder, as well as Regulation Section 1.704-1(b)(2)(iv)(d)(3), income, gain, loss, and deduction with respect to any property contributed (or deemed contributed) to the Company shall, solely for tax purposes, be allocated among the Members so as to take account of any variation between the adjusted basis of the property to the Company for federal income tax purposes and its fair market value at the date of contribution (or deemed contribution). If the adjusted book value of any Company asset is adjusted as provided herein, subsequent allocations of income, gain, loss, and deduction with respect to the asset shall take account of any variation between the adjusted basis of the asset for federal income tax purposes and its adjusted book value in the manner required under Code Section 704(c) and the Regulations thereunder.

(E) Code Section 754 Adjustment. To the extent an adjustment to the tax basis of any Company asset pursuant to Code Section 734(b) or Code Section 743(b) is required, pursuant to Regulation Section 1.704-1(b)(2)(iv)(m), to be taken into account in determining Capital Accounts, the amount of the adjustment to the Capital Accounts shall be treated as an item of gain (if the adjustment increases the basis of the asset) or loss (if the adjustment decreases basis), and the gain or loss shall be specially allocated to the Members in a manner consistent with the manner in which their Capital Accounts are required to be adjusted pursuant to that Section of the Regulations.

(F) Nonrecourse Deductions. Nonrecourse Deductions for a taxable year shall be specially allocated among the Members in proportion to their Sharing Ratios.

(G) Member Loan Nonrecourse Deductions. Any Member Loan Nonrecourse Deduction for any taxable year shall be specially allocated to the Member who bears the risk of loss in accordance with Regulation Section 1.704-2(b).

(H) Guaranteed Payments. To the extent any compensation paid to any Member by the Company is determined by the Internal Revenue Service not to be a guaranteed payment under Code Section 707(c) or is paid to the Member in a capacity other than as a Member within the meaning of Code Section 707(a), the Member shall be specially allocated gross income of the Company in an amount equal to the amount of that compensation, and the Member's Capital Account shall be adjusted.

(I) Unrealized Receivables. If an Member's Interest is reduced the Member's share of the Company's "unrealized receivables" and "substantially appreciated inventory" (within the meaning of Code Section 751) shall not be reduced, so that, notwithstanding any other provision of this Agreement to the contrary, that portion of the Profit otherwise allocable upon a liquidation or dissolution of the Company pursuant to Section 7.2 hereof which is taxable as ordinary income (recaptured) for federal income tax purposes shall, to the extent possible without increasing the total gain to the Company or to any Member, be specially allocated among the Members in proportion to the deductions (or basis reductions treated as deductions) giving rise to such recapture. Any questions as to the aforesaid allocation of ordinary income (recapture), to the extent such questions cannot be resolved in the manner specified above, shall be resolved by the Manager.

(I) Withholding. All amounts required to be withheld pursuant to Code Section 1446 or any other provision of federal, state, or local tax law shall be treated as amounts actually distributed to the affected Members for all purposes under this Agreement.

9.4 **Distributions in General.**

(A) Except as otherwise provided in this Agreement, the timing and amount of all distributions shall be determined by the Manager.

(B) If any assets of the Company are distributed in kind to the Members, those assets shall be valued on the basis of their fair market value, and any Member entitled to any interest in those assets shall receive that interest as a tenant-in-common with all other Members so entitled. Unless the Members otherwise agree, the fair market value of the assets shall be determined by an independent appraiser who shall be selected by the Manager.

(C) All Profit and Loss shall be allocated, and all distributions shall be made to the Persons shown on the records of the Company to have been Members as of the last day of the taxable year for which the allocation or distribution is to be made. Notwithstanding the foregoing, unless the Company's taxable year is separated into segments, if there is a Transfer or withdrawal during the taxable year, the Profit and Loss shall be allocated between the original Member and the successor on the basis of the number of days each was an Member during the taxable year; provided, however, the Company's taxable year shall be segregated into two or more segments in order to account for Profit, Loss, or proceeds attributable to a Capital Transaction or to any other extraordinary nonrecurring items of the Company.

(D) The Manager is hereby authorized, upon the advice of the Company's tax counsel, to amend this Article IV to comply with the Code and the Regulations promulgated under Code Section 704(b).

9.5 **Limitation Upon Distributions.** No Distribution shall be made if such Distribution would violate the Act.

9.6 **Principles.** For financial reporting purposes, the Company shall use accounting principles applied on a consistent basis using the accrual method of accounting determined by the Managers, unless the Company is required to use a different method of accounting for federal income tax purposes, in which case that method of accounting shall be the Company's method of accounting.

9.7 **Interest on and Return of Capital Contributions.** No Member shall be entitled to interest on its Capital Contribution or to return of its Capital Contribution, except as otherwise specifically provided for herein.

9.8 **Loans to Company.** Nothing in this Agreement shall prevent any Member from making secured or unsecured loans to the Company by agreement with the Company.

9.9 **Accounting Period.** The Company's accounting period shall be the Fiscal Year.

9.10 **Records and Reports.** At the expense of the Company, the Managers shall maintain records and accounts of all operations and expenditures of the Company. At a minimum the Company shall keep at its principal place of business the following records:

(a) A current list of the full name and last known business, residence, or mailing address of each Equity Owner and the Managers, both past and present;

(b) A copy of the Articles of Organization and all amendments thereto, together with executed copies of any powers of attorney pursuant to which any amendment has been executed;

(c) Copies of the Company's federal, state, and local income tax returns and reports, if any, for the four most recent Fiscal Years;

(d) Copies of the Company's currently effective written Agreement, copies of any writings permitted or required with respect to an Equity Owner's obligation to contribute cash, property or services, and copies of any financial statements of the Company for the three (3) most recent Fiscal Years;

(e) Minutes of every annual, special and court-ordered meeting; and

(f) Written consents obtained from Members for actions taken by Members without a meeting.

9.11 **Returns and Other Elections.** The Managers shall cause the preparation and timely filing of all tax returns required to be filed by the Company pursuant to the Code and all other tax returns deemed necessary and required in each jurisdiction in which the Company does business. Copies of such returns, or pertinent information therefrom, shall be furnished to the Equity Owners within a reasonable time after the end of the Fiscal Year. All elections permitted to be made by the Company under federal or state laws shall be made by the Managers in their sole discretion; provided, however, that the Managers shall make any tax election requested by Members owning a Majority Interest.

9.12 **Matters Partner.** Any Manager selected by a vote of the Managers, so long as the Manager so selected is also a Member, is hereby designated the Tax Matters Partner ("TMP") as defined in Section 6231(a)(7) of the Code. The TMP and the other Members shall use their reasonable efforts to comply with the responsibilities outlined in Sections 6221 through 6233 of the Code (including any Regulations promulgated thereunder), and in doing so shall incur no liability to any other Member.

9.13 Allocations for Income Tax (But Not Book Capital Account) Purposes.

(a) accordance with Section 704(c)(1)(A) of the Code and Section 1.704_1(b)(2)(i)(iv) of the Regulations, if a Member contributes property with an initial Gross Asset Value that differs from its adjusted basis at the time of contribution, income, gain, loss and deductions with respect to the property shall, solely for federal income tax purposes (and not for Capital Account purposes), be allocated among the Equity Owners so as to take account of any variation between the adjusted basis of such property to the Company and its Gross Asset Value at the time of contribution pursuant to the traditional method under Section 1.704_3(b) of the Regulations. Notwithstanding the foregoing sentence, in the event any Equity Owner is limited in recognizing any tax allocations cost recovery deductions or loss with respect to contributed property by the "ceiling rule" as described in Regulation Section 1.704_3(b), then, in addition to the allocation of items with respect to the contributed property allocated pursuant to the previous sentence, all items of ordinary loss and deduction of the Company other than with respect to the property may, solely for federal income tax purposes (and not for Capital Account purposes), be allocated among the Equity Owners pursuant to the traditional method with curative allocations described in Regulation Section 1.704_3(c) so as to offset the effect of the ceiling rule. The allocations described in the previous sentence may be limited to items of ordinary loss and deduction of the Company other than with respect to the property even if such items do not offset fully the effect of the ceiling rule.

(b) Pursuant to Section 704(c)(1)(B) of the Code, if any contributed property is Distributed by the Company other than to the contributing Equity Owner within seven years of being contributed, then, except as provided in Section 704(c)(2) of the Code, the contributing Equity Owner shall, solely for federal income tax purposes (and not for Capital Account purposes), be treated as recognizing gain or loss from the sale of such property in an amount equal to the gain or loss that would have been allocated to such Equity Owner under Section 704(c)(1)(A) of the Code if the property had been sold at its fair market value at the time of the Distribution.

(c) the case of any Distribution by the Company to an Equity Owner, such Equity Owner shall, solely for federal income tax purposes (and not for Capital Account purposes), be treated as recognizing gain in an amount equal to the lesser of:

(i) the excess (if any) of (A) the fair market value of the property (other than money) received in the Distribution over (B) the adjusted basis of such Equity Owner's Ownership Interest immediately before the Distribution reduced (but not below zero) by the amount of money received in the Distribution; or

(ii) Net Precontribution Gain (as defined in Section 737(b) of the Code) of the Equity Owner. The Net Precontribution Gain means the net gain (if any) which would have been recognized by the distributee Equity Owner under Section 704(c)(1)(B) of the Code if all property which (A) had been contributed to the Company within seven years of the Distribution, and (B) is held by the Company immediately before the Distribution, had been Distributed by the Company to another Equity Owner. If any portion of the property Distributed consists of property which had been contributed by the distributee Equity Owner to the Company, then such property shall not be taken into account under this Section 9.13(c) and shall not be taken into account in determining the amount of the Net Precontribution Gain. If the property Distributed consists of an interest in an Entity, the preceding sentence shall not apply to the extent that the value of such interest is attributable to the property contributed to such Entity after such interest had been contributed to the Company.

(d) recapture of income tax deductions resulting from sale or disposition of Company property shall be allocated to the Equity Owners to whom the deduction that gave rise to such recapture was allocated hereunder to the extent that such Equity Owner is allocated any gain from the sale or other disposition of such property.

ARTICLE 10
TRANSFERABILITY

10.1 **General.**

(a) Except as otherwise specifically provided herein, no Equity Owner shall have the right to Transfer the Equity Owner's Ownership Interest.

(b) Each Equity Owner hereby acknowledges the reasonableness of the restrictions on sale and gift of Ownership Interests imposed by this Agreement in view of the

Company purposes and the relationship of the Equity Owners. Accordingly, the restrictions on sale and gift contained herein shall be specifically enforceable.

(c) In the event that any Equity Owner pledges or otherwise encumbers any of its Ownership Interest as security for repayment of a liability, any such pledge or hypothecation shall be made pursuant to a pledge or hypothecation agreement that requires the pledgee or secured party to be bound by all the terms and conditions of this Article 10, and the pledging Equity Owner shall provide notice of such pledge or encumbrance to the Managers.

10.2 **Right of First Refusal.**

(a) A Selling Equity Owner which desires to sell all or any portion of its Ownership Interest to a third party purchaser including a Member (or the Company) shall obtain from such third party purchaser ("Third Party Purchaser") a bona fide written offer to purchase such interest, stating the terms and conditions upon which the purchase is to be made and the consideration offered therefore ("Third Party Offer"). The Selling Equity Owner shall give written notification ("Notice of Sale") to the Company and the other Equity Owners who are Members (the "Remaining Members"), by certified mail or personal delivery, of its intention to so transfer such Ownership Interest (the "Offered Interest"). The Notice of Sale shall be accompanied by a copy of the Third Party Offer. If any portion of the purchase price offered by such third party purchaser consists of consideration other than cash or a promissory note ("Noncash Consideration"), then: (1) the Notice of Sale also shall be accompanied by a good faith estimate by the Selling Equity Owner of the fair market value of the Noncash Consideration, and (2) for purposes of Section 10.2(b) and 10.2(c) the purchase price of the Offered Interest (the "Purchase Price") shall be adjusted as follows:

(i) The Purchase Price shall be decreased by the Noncash Consideration; and

(ii) The Purchase Price shall be increased by an amount equal to either (aa) the Selling Equity Owner's good faith estimate of the fair market value of the Noncash Consideration ("Seller's Estimate") or (bb) in the discretion of the Managers, the appraised fair market value of the Noncash Consideration determined by an independent appraiser selected by the Managers in their sole discretion. The Managers shall have the sole discretion to choose between the amount determined pursuant to clauses (aa) and (bb) of this subsection 10.2(a)(ii). If the appraised fair market value of the Noncash Consideration is not determined within 20 days after the Notice of Sale, then such fair market value shall be equal to the amount of the Seller's Estimate.

(b) The Remaining Members shall have the option ("Buy Option") to purchase all, but not less than all, of the Offered Interest, on a basis pro rata to the Sharing Ratios of the Remaining Members exercising such option pursuant to this Section 10.2(b). The Buy Option may be exercised by one or more of the Remaining Members by giving written notification ("Buy Notice") to the Selling Equity Owner within 30 days after receiving the Notice of Sale (the "Option Period"). Each Remaining Member who timely gives a Buy Notice ("Buying Member") shall purchase such portion of the Offered Interest which is equal to the relative Sharing Ratios of all of the Buying Members. If there are no Buying Members, the Buy

Option shall terminate and at any time within 90 days following the expiration of the Option Period, the Selling Equity Owner shall be entitled to consummate the sale of the Offered Interest to the Third Party Purchaser or one or more of its Affiliates upon terms no less favorable than are set forth in the Third Party Offer.

(c) If there is at least one Buying Member (i) the Buying Members shall designate the time, date and place of closing, provided that the date of closing shall be within 30 days after the receipt of the Buy Notice, and (ii) at the closing, the Buying Members shall purchase, and the Selling Equity Owner shall sell, the Offered Interest for an amount equal to the Purchase Price (as modified in accordance with Section 10.2(a)(i) and (ii)) and in accordance with such other terms and conditions set forth in the Third Party Offer.

(d) A sale of an Offered Interest pursuant to this Section 10.2, shall be subject to Sections 10.3 and 10.4.

10.3 Transferee Not Member in Absence of Consent.

(a) Except as provided in this Section 10.3(a), if Members Holding a Two-Thirds Interest (inclusive of the Member(s) proposing to sell) do not approve by written consent of the proposed sale of the Transferring Equity Owner's Ownership Interest to a transferee which is not a Member immediately prior to the sale, then the proposed transferee shall have no right to participate in the management of the business and affairs of the Company or to become a Member. Such transferee shall be merely an Economic Interest Owner. No transfer of a Member's Membership Interest (including any transfer of the Economic Interest or any other transfer which has not been approved as provided herein) shall be effective unless and until written notice (including the name and address of the proposed transferee and the date of such transfer) has been provided to the Company and the nontransferring Members. Notwithstanding anything to the contrary herein, any gift by a Member which is permitted under Section 10.5 and made in accordance with this Section 10.4(a) shall automatically constitute the transferee as a Member.

(b) Upon and contemporaneously with any sale or gift of a Member's Ownership Interest, the Transferring Equity Owner shall cease to have any residual rights associated with the Ownership Interest transferred to the transferee.

10.4 Additional Conditions to Recognition of Transferee.

(a) If a Transferring Equity Owner sells or gifts an Ownership Interest to a Person who is not already a Member, as a condition to recognizing one or more of the effectiveness and binding nature of such sale or gift (subject to Section 10.3 above), the remaining Members may require the Transferring Equity Owner and the proposed successor-in-interest to execute, acknowledge and deliver to the Managers such instruments of transfer, assignment and assumption and such other certificates, representations and documents, and to perform all such other acts which the Managers may deem necessary or desirable to accomplish any one or more of the following:

(i) constitute such successor-in-interest as an Equity Owner;

(ii) confirm that the proposed successor-in-interest as an Economic Interest Owner, or to be admitted as a Member, has accepted, assumed and agreed to be subject and bound by all of the terms, obligations and conditions of this Agreement, as the same may have been further amended (whether such Person is to be admitted as a new Member or will merely be an Economic Interest Owner);

(iii) preserve the Company after the completion of such sale, transfer, assignment, or substitution under the laws of each jurisdiction in which the Company is qualified, organized or does business;

(iv) maintain the status of the Company as a partnership for federal tax purposes; and

(v) assure compliance with any applicable state and federal laws, including securities laws and regulations.

(b) Any sale or gift of an Ownership Interest and admission of a Member in compliance with this Article 10 shall be deemed effective as of the last day of the calendar month in which the remaining Members' consent thereto was given or, if no such consent was required pursuant to Section 10.3, then on such date that the successor in interest complies with Section 10.4(a). The Transferring Equity Owner hereby indemnifies the Company and the remaining Members against any and all loss, damage, or expense (including, without limitation, tax liabilities or loss of tax benefits) arising directly or indirectly as a result of any transfer or purported transfer in violation of this Article 10.

10.5 Gifts of Ownership Interests. A Gifting Equity Owner may gift all or any portion of its Ownership Interest (without regard to Section 10.2(a) and 10.2(b)); provided, however, that the successor-in-interest ("donee") complies with Section 10.4(a) and further provided that the donee is either the Gifting Equity Owner's spouse, former spouse, lineal descendant (including adopted children), is another Member of the Company or to an Entity in which day-to-day voting control is directly or indirectly held by one or more of the Gifting Equity Owners, or the Gifting Equity Owner's spouse, former spouse, or lineal descendant (including adopted children). In the event of the gift of all or any portion of a Gifting Equity Owner's Ownership Interest to one or more donees who are under 25 years of age, one or more trusts shall be established to hold the gifted Ownership Interest(s) for the benefit of such donees until the respective donees reach the age of at least 25 years.

10.6 Majority Approved Sales.

10.6.1 If at any time one or more holders of not less than seventy five percent (75%) of all of the Voting Interests (the "Selling Parties") propose a Transfer of all or a portion of their Membership Interests to a third person in a bona fide, arm's length transaction, the Selling Parties may require each of the Equity Owners who are not Selling Parties ("Non-Selling Parties") to Transfer all of their Ownership Interests provided that all holders of Ownership Interests shall be entitled to the same terms and conditions to be received by similarly situated Selling Parties ("Qualifying Transfer").

10.6.2 The Selling Parties shall provide a written and dated notice ("Go-Along Notice") of such proposed Qualifying Transfer to each of the Non-Selling Parties not later than thirty (30) days prior to the consummation of the proposed Qualifying Transfer. The Go-Along Notice shall contain (i) written notice of the exercise of the Selling Parties' rights pursuant to this Section, (ii) the consideration to be paid by the third person and (iii) the other material terms and conditions of the proposed Qualifying Transfer. At the closing of the Qualifying Transfer, each of the Non-Selling Parties shall deliver to such third person an executed assignment of Ownership Interests to be sold, pursuant to the terms of the proposed Qualifying Transfer and to take all such actions reasonably requested by such third person in order to consummate such Qualifying Transfer.

ARTICLE 11
ISSUANCE OF MEMBERSHIP INTERESTS

11.1 **Issuance of Additional Membership Interests to New Members.** From the date of the formation of the Company, any Person (a) who becomes a Member in connection with and pursuant to the terms and conditions of an Approved Financing Transaction may be admitted as a Member by the Manager or (b) who is acceptable to Members holding a Two-Thirds Interest may become a Member in the Company, subject to the terms and conditions of this Agreement.

11.2 **Issuance of Additional Membership Interests to Existing Members.** From the date of the formation of the Company, the Company may issue additional Membership Interests to one or more existing Members for such consideration as the Members holding a Two-Thirds Interest shall determine, subject to the terms and conditions of this Agreement.

11.3 **Part Year Allocations With Respect to New Members**. No new Members shall be entitled to any retroactive allocation of losses, income or expense deductions incurred by the Company. In accordance with the provisions of Section 706(d) of the Code and the Regulations promulgated thereunder, the Managers may, at their option, at the time a Member is admitted, close the Company books (as though the Company's Fiscal Year had ended) or make pro rata allocations of loss, income and expense deductions to a new Equity Owner for that portion of the Company's Fiscal Year in which an Equity Owner became an Equity Owner.

ARTICLE 12
DISSOLUTION AND TERMINATION

12.1 Dissolution.

(a) The Company shall be dissolved only upon the occurrence of any of the following events:

(i) by the written agreement of Members holding a Two-Thirds Interest;

(ii) by an order of a court of competent jurisdiction in an action commenced by any Member in which the Member can show that:

(b) The Members are deadlocked in the management of the Company's affairs, and irreparable injury to the corporation is threatened or being suffered, or the business and affairs of the corporation can no longer be conducted, because of the deadlock;

(c) The Managers or other Members in control of the Company have acted, are acting, or will act in a manner that is illegal, oppressive, or fraudulent;

(d) There have been repeated, material breaches of the Agreement by the Company or by other Members or Managers; or

(e) The corporate assets are being misapplied or wasted;

Notwithstanding anything to the contrary in the Act, the Company shall not be dissolved upon the death, retirement, resignation, expulsion, bankruptcy or dissolution of an Equity Owner.

(f) As soon as possible following the occurrence of any of the events specified in Section 12.1(a) effecting the dissolution of the Company, the appropriate representative of the Company shall execute all documents required by the Act at the time of dissolution and file or record such statements with the appropriate officials.

12.2 **Effect of Dissolution.** Upon dissolution, the Company shall cease to carry on its business, except insofar as may be necessary for the winding up of its business, but its separate existence shall continue until winding up and Distribution is completed.

12.3 **Winding Up, Liquidation and Distribution of Assets.**

(a) Upon dissolution, an accounting shall be made by the Company's Managers of the accounts of the Company and of the Company's assets, liabilities and operations, from the date of the last previous accounting until the date of dissolution. The Managers shall immediately proceed to wind up the affairs of the Company.

(b) If the Company is dissolved and its affairs are to be wound up, the Managers shall:

(i) Sell or otherwise liquidate all of the Company's assets as promptly as practicable (except to the extent that the Managers may determine to Distribute in kind any assets to the Equity Owners);

(ii) Allocate any Profit or Loss resulting from such sales to the Equity Owners' Capital Accounts in accordance with Article 9 hereof;

(iii) Discharge all liabilities of the Company, including liabilities to Equity Owners who are also creditors, to the extent otherwise permitted by law, other than liabilities to Equity Owners for Distributions and the return of capital, and establish such Reserves as may be reasonably necessary to provide for contingent liabilities of the Company (for purposes of determining the Capital Accounts of the Equity Owners, the amounts of such Reserves shall be deemed to be an expense of the Company);

(iv) Distribute the remaining assets to the Equity Owners in accordance with Section 9.2(C); provided, however that the Company may offset damages for breach of this Agreement by any Equity Owner whose interest is liquidated (either upon the withdrawal of the Equity Owner or the liquidation of the Company) against the amount otherwise Distributable to such Equity Owner; and

(v) If any assets of the Company are to be distributed in kind, the net fair market value of such assets as of the date of dissolution shall be determined by independent appraisal or by agreement of the Members. Such assets shall be deemed to have been sold as of the date of dissolution for their fair market value, and the Capital Accounts of the Equity Owners shall be adjusted pursuant to the provisions of Article 9 and Section 8.3 of this Agreement to reflect such deemed sale.

(c) Except as specifically required in Section 9.3(A) of this Agreement and except for compliance with the Regulations, including but not limited to Section 1.704, upon a liquidation, if any Equity Owner has an Adjusted Capital Account Deficit (after giving effect to all contributions, Distributions, allocations and other Capital Account adjustments for all Fiscal Years, including the year during which such liquidation occurs), such Equity Owner shall have no obligation to make any Capital Contribution, and the negative balance of such Member's Capital Account shall not be considered a debt owed by such Equity Owner to the Company or to any other Person for any purpose whatsoever.

(d) Upon completion of the winding up, liquidation and Distribution of the assets, the Company shall be deemed terminated.

(e) The Managers shall comply with any applicable requirements of applicable law pertaining to the winding up of the affairs of the Company and the final Distribution of its assets.

12.4 **Filing or Recording Statements.** Upon the conclusion of winding up, the appropriate representative of the Company shall execute all documents required by the Act at the time of completion of winding up and file or record such statements with the appropriate officials.

12.5 **Return of Contribution Nonrecourse to Other Equity Owners**. Except as provided by law or as expressly provided in this Agreement, upon dissolution, each Equity Owner shall look solely to the assets of the Company for the return of its Capital Contribution. If the Company property remaining after the payment or discharge of the debts and liabilities of the Company is insufficient to return the cash contribution of one or more Equity Owners, such Equity Owners shall have no recourse against any other Equity Owner.

ARTICLE 13
MISCELLANEOUS PROVISIONS

13.1 **Notices.** Any notice, demand, or communication required or permitted to be given by any provision of this Agreement shall be deemed to have been sufficiently given or served if sent by electronic mail, telecopy or facsimile transmission, delivered by messenger or overnight courier, or mailed, certified first class mail, postage prepaid, return receipt requested,

and addressed or sent to the Equity Owner's and/or Company's address, as set forth on Exhibit A. Such notice shall be effective, (a) if delivered by messenger or by overnight courier, upon actual receipt (or if the date of actual receipt is not a business day, upon the next business day); (b) if sent by electronic mail, telecopy or facsimile transmission, upon confirmation of receipt (or if the date of such confirmation of receipt is not a business day, upon the next business day) with an automatic "read receipt" not constituting acknowledgement of an email for purposes of this Section 13.1; or (c) if mailed, upon the earlier of three business days after deposit in the mail and the delivery as shown by return receipt therefor. Any Equity Owner or the Company may change its address by giving notice in writing to the Company and the other Equity Owners of its new address.

13.2 **Books of Account and Records.** Proper and complete records and books of account shall be kept or shall be caused to be kept by the Managers, in which shall be entered fully and accurately all transactions and other matters relating to the Company's business in such detail and completeness as is customary and usual for businesses of the type engaged in by the Company. Such books and records shall be maintained as provided in Section 9.10. The books and records shall at all times be maintained at the principal executive office of the Company and shall be open to the reasonable inspection and examination of the Equity Owners or their duly authorized representatives during reasonable business hours.

13.3 **Application of State Law.** This Agreement, and the application and interpretation hereof, shall be governed exclusively by its terms and by the laws of the State of Colorado, and specifically the Act.

13.4 **Waiver of Action for Partition**. Each Equity Owner irrevocably waives during the term of the Company any right that it may have to maintain any action for partition with respect to the Company Property.

13.5 **Amendments.** This Agreement may be amended only with the written agreement of Members holding a Two-Thirds Interest. No amendment which has been agreed to in accordance with the preceding sentence shall be effective to the extent that such amendment has a Material Adverse Effect upon one or more Equity Owners who did not agree in writing to such amendment. For purposes of the preceding sentence, "Material Adverse Effect" shall mean any modification of the relative rights to Distributions by the Company (including allocations of Profits and Losses which are reflected in the Capital Accounts). Without limiting the generality of the foregoing: an amendment which has a proportionate effect on all Equity Owners (or in the case of a redemption of Ownership Interests or issuance of additional Ownership Interests, an amendment which has a proportionate effect on all Equity Owners immediately after such redemption or issuance) with respect to their rights to Distributions shall be deemed to not have a Material Adverse Effect on Equity Owners who do not agree in writing to such amendment. Notwithstanding the foregoing provisions of this Section 13.5, no amendment shall be made to a provision herein which requires the vote, approval or consent of the Members holding more than a Two-Thirds Interest, unless Members holding such greater Voting Interests approve of such amendment and no amendment shall be made to Section 5.5 without the approval of one or more Voting Interests which taken together exceed 66.67% of the aggregate of all Voting Interests held by Members holding Unit 1 voting as one group.

13.6 **Execution of Additional Instruments.** Each Equity Owner hereby agrees to execute such other and further statements of interest and holdings, designations, powers of attorney and other instruments necessary to comply with any laws, rules or regulations.

13.7 **Construction.** Whenever the singular number is used in this Agreement and when required by the context, the same shall include the plural and vice versa, and the masculine gender shall include the feminine and neuter genders and vice versa.

13.8 **Effect of Inconsistencies with the Act.** It is the express intention of the Equity Owners and the Company that this Agreement shall be the sole source of agreement among them, and, except to the extent that a provision of this Agreement expressly incorporates federal income tax rules by reference to sections of the Code or Regulations or is expressly prohibited or ineffective under the Act, this Agreement shall govern, even when inconsistent with, or different than, the provisions of the Act or any other law or rule. In the event that the Act is subsequently amended or interpreted in such a way to make valid any provision of this Agreement that was formerly invalid, such provision shall be considered to be valid from the effective date of such interpretation or amendment. The Members and the Company hereby agree that the duties and obligations imposed on the Members as such shall be those set forth in this Agreement, which is intended to govern the relationship among the Company and the Equity Owners, notwithstanding any provision of the Act or common law to the contrary.

13.9 **Waivers.** The failure of any party to seek redress for violation of or to insist upon the strict performance of any covenant or condition of this Agreement shall not prevent a subsequent act, which would have originally constituted a violation, from having the effect of an original violation.

13.10 **Rights and Remedies Cumulative.** The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by any party shall not preclude or waive the right to use any or all other remedies. Said rights and remedies are given in addition to any other rights the parties may have by law, statute, ordinance or otherwise.

13.11 **Attorneys' Fees.** Should the Company or any party to this Agreement reasonably retain counsel for the purpose of enforcing or preventing breach of any provision of this Agreement, including but not limited to instituting any action or proceeding to enforce any provision of this Agreement, for damages by reason of any alleged breach of any provision of this Agreement, for a declaration of such party's rights or obligations under this Agreement or for any other judicial remedy, then, if the matter settled by judicial determination or arbitration, the prevailing party (whether at trial, on appeal, or arbitration) shall be entitled, in addition to such other relief as may be granted, to be reimbursed by the losing party for all costs and expenses incurred, including, but not limited to, reasonable attorneys' fees and costs for services rendered to the prevailing party.

13.12 **Severability.** If any provision of this Agreement or the application thereof to any person or circumstance shall be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application thereof shall not be affected and shall be enforceable to the fullest extent permitted by law. Without limiting the generality of the foregoing sentence, to the extent that any provision of this Agreement is prohibited or ineffective under the Act or common

law, this Agreement shall be considered amended to the smallest degree possible in order to make the Agreement effective under the Act or common law.

13.13 **Heirs, Successors and Assigns**. Each and all of the covenants, terms, provisions and agreements herein contained shall be binding upon and inure to the benefit of the parties hereto and, to the extent permitted by this Agreement, their respective heirs, legal representatives, successors and assigns.

13.14 **Creditors.** None of the provisions of this Agreement shall be for the benefit of or enforceable by any creditors of the Company.

13.15 **Counterparts.** This Agreement may be executed in counterparts, each of which shall be deemed an original but all of which shall constitute one and the same instrument.

13.16 **Rule Against Perpetuities.** The parties hereto intend that the Rule Against Perpetuities (and any similar rule of law) not be applicable to any provisions of this Agreement. However, notwithstanding anything to the contrary in this Agreement, if any provision in this Agreement would be invalid or unenforceable because of the Rule Against Perpetuities or any similar rule of law but for this Section 13.16, the parties hereto hereby agree that any future interest which is created pursuant to said provision shall cease if it is not vested within 21 years after the death of the survivor of the group composed of the undersigned individuals and their issue who are living on the effective date of this Agreement.

13.17 **Power of Attorney.** Each Equity Owner hereby irrevocably makes, constitutes and appoints the Managers, with full power of substitution, so long as such Managers are acting in such a capacity (and any successor Manager thereof so long as such Manager is acting in such capacity), its true and lawful attorney, in such Equity Owner's name, place and stead (it is expressly understood and intended that the grant of such power of attorney is coupled with an interest) to make, execute, sign, acknowledge, swear and file with respect to the Company:

(a) all amendments of this Agreement adopted in accordance with the terms hereof;

(b) all documents which the Managers deem necessary or desirable to effect the dissolution and termination of the Company;

(c) all such other instruments, documents and certificates which may from time to time be required by the laws of the State or any other jurisdiction in which the Company shall determine to do business, or any political subdivision or agency thereof, to effectuate, implement, continue and defend the valid existence of the Company; and

(d) all instruments, documents and certificates which the Managers deem necessary or desirable in connection with a Reorganization which has been authorized in accordance with the terms of this Agreement.

This power of attorney shall not be affected by and shall survive the bankruptcy, insolvency, death, incompetency, or dissolution of an Equity Owner and shall survive the delivery of any assignment by the Equity Owner of the whole or any portion of its Ownership

Interest. Each Equity Owner hereby releases each Manager from any liability or claim in connection with the exercise of the authority granted pursuant to this power of attorney, and in connection with any other action taken by such Manager pursuant to which such Manager purports to act as the attorney-in-fact for one or more Equity Owners, if the Manager believed in good faith that such action taken was consistent with the authority granted to it pursuant to this Section 13.17.

13.18 **Investment Representations.** The undersigned Equity Owners, if any, understand (1) that the Ownership Interests evidenced by this Agreement have not been registered under the Securities Act of 1933, the State Securities Act or any other state securities laws (the "Securities Acts") because the Company is issuing these Ownership Interests in reliance upon the exemptions from the registration requirements of the Securities Acts providing for issuance of securities not involving a public offering, (2) that the Company has relied upon the fact that the Ownership Interests are to be held by each Equity Owner for investment, and (3) that exemption from registrations under the Securities Acts would not be available if the Ownership Interests were acquired by an Equity Owner with a view to Distribution. Accordingly, each Equity Owner hereby confirms to the Company that such Equity Owner is acquiring the Ownership Interests for such own Equity Owner's account, for investment and not with a view to the resale or Distribution thereof. Each Equity Owner agrees not to transfer, sell or offer for sale any portion of the Ownership Interests unless there is an effective registration or other qualification relating thereto under the Securities Act of 1933 and under any applicable state securities laws or unless the holder of Ownership Interests delivers to the Company an opinion of counsel, satisfactory to the Company, that such registration or other qualification under such Act and applicable state securities laws is not required in connection with such transfer, offer or sale. Each Equity Owner understands that the Company is under no obligation to register the Ownership Interests or to assist such Equity Owner in complying with any exemption from registration under the Securities Act if such Equity Owner should at a later date, wish to dispose of the Ownership Interest. Furthermore, each Member realizes that the Ownership Interests are unlikely to qualify for disposition under Rule 144 of the Securities and Exchange Commission unless such Equity Owner is not an "affiliate" of the Company and the Ownership Interest has been beneficially owned and fully paid for by such Equity Owner for at least one year.

Each Equity Owner, prior to acquiring an Ownership Interest, has made an investigation of the Company and its business, and the Company has made available to each Equity Owner, all information with respect to the Company which such Equity Owner needs to make an informed decision to acquire the Ownership Interest. Each Equity Owner has relied on its own tax and legal advisors in connection with such Equity Owner's decision to acquire an Ownership Interest. Each Equity Owner considers himself, herself or itself to be a person possessing experience and sophistication as an investor which are adequate for the evaluation of the merits and risks of such Equity Owner's investment in the Ownership Interest.

13.19 **Representations and Warranties.**

(a) **In General.** As of the date hereof, each of the Equity Owners hereby makes each of the representations and warranties applicable to such Equity Owner as set forth in

Section 13.18 hereof, and such warranties and representations shall survive the execution of this Agreement.

(b) **Representations and Warranties**. Each Equity Owner that is an Entity hereby represents and warrants that:

(1) **Due Incorporation or Formation; Authorization of Agreement.** Such Equity Owner is a corporation duly organized or a partnership or limited liability company duly formed, validly existing, and in good standing under the laws of the jurisdiction of its incorporation or formation and has the corporate, partnership or limited liability company power and authority to own its property and carry on its business as owned and carried on at the date hereof and as contemplated hereby. Such Equity Owner is duly licensed or qualified to do business and in good standing in each of the jurisdictions in which the failure to be so licensed or qualified would have a material adverse effect on its financial condition or its ability to perform its obligations hereunder. Such Equity Owner has the corporate, partnership or limited liability company power and authority to execute and deliver this Agreement and to perform its obligations hereunder and the execution, delivery, and performance of this Agreement has been duly authorized by all necessary corporate, partnership or limited liability company action. This Agreement constitutes the legal, valid, and binding obligation of such Equity Owner.

(2) **No Conflict with Restrictions; No Default**. Neither the execution, delivery, and performance of this Agreement nor the consummation by such Equity Owner of the transactions contemplated hereby: (1) will conflict with, violate, or result in a breach of any of the terms, conditions, or provisions of any law, regulation, order, writ, injunction, decree, determination, or award of any court, any governmental department, board, agency, or instrumentality, domestic or foreign, or any arbitrator, applicable to such Equity Owner or any of its Affiliates; (2) will conflict with, violate, result in a breach of, or constitute a default under any of the terms, conditions, or provisions of the articles of incorporation, bylaws, partnership agreement, limited liability company agreement or operating agreement of such Equity Owner or any of its Affiliates or of any material agreement or instrument to which such Equity Owner or any of its Affiliates is a party or by which such Equity Owner, or any of its Affiliates is or may be bound or to which any of its material properties or assets is subject; (3) will conflict with, violate, result in a breach of, constitute a default under (whether with notice or lapse of time or both), accelerate or permit the acceleration of the performance required by, give to others any material interests or rights, or require any consent, authorization, or approval under any indenture, mortgage, lease agreement, or instrument to which such Equity Owner or any of its Affiliates is a party or by which such Equity Owner or any of its Affiliates is or may be bound; or (4) will result in the creation or imposition of any lien upon any of the material properties or assets of such Equity Owner or any of its Affiliates.

(3) **Government Authorizations.** Any registration, declaration, or filing with, or consent, approval, license, permit, or other authorization or order by, any government or regulatory authority, domestic or foreign, that is required in connection with the valid execution, delivery, acceptance, and performance by such Equity Owner under this Agreement or the consummation by such Equity Owner of any transaction contemplated hereby has been completed, made, or obtained on or before the effective date of this Agreement.

(4) **Litigation.** There are no actions, suits, proceedings, or investigations pending or, to the knowledge of such Equity Owner or any of its Affiliates, threatened against or affecting such Equity Owner or any of its Affiliates or any of their properties, assets, or businesses in any court or before or by any governmental department, board, agency, or instrumentality, domestic or foreign, or any arbitrator which could, if adversely determined (or, in the case of an investigation could lead to any action, suit, or proceeding, which if adversely determined could) reasonably be expected to materially impair such Equity Owner's ability to perform its obligations under this Agreement or to have a material adverse effect on the consolidated financial condition of such member; and such Equity Owner or any of its Affiliates has not received any currently effective notice of any default, and such Equity Owner or any of its Affiliates is not in default, under any applicable order, writ, injunction, decree, permit, determination, or award of any court, any governmental department, board, agency, or instrumentality, domestic or foreign, or any arbitrator which could reasonably be expected to materially impair such Equity Owner's ability to perform its obligations under this Agreement or to have a material adverse effect on the consolidated financial condition of such Equity Owner.

(5) **Investment Company Act; Public Utility Holding Company Act.** Neither such Equity Owner nor any of its Affiliates is, nor will the Company as a result of such Equity Owner holding an Ownership Interest be, an "investment company" as defined in, or subject to regulation under, the Investment Company Act of 1940. Neither such Equity Owner nor any of its Affiliates is, nor will the Company as a result of such Equity Owner holding an Ownership Interest be, a "holding company," "an affiliate of a holding company," or a "subsidiary of a holding company," as defined in, or subject to regulation under, the Public Utility Holding Company Act of 1935.

(6) **Equity Owner Status**. The Equity Owner verifies that it:

(i) Has not been convicted, within ten years before the date hereof (or five years, in the case of issuers, their predecessors and affiliated issuers), of any felony or misdemeanor:

(A) In connection with the purchase or sale of any security;

(B) Involving the making of any false filing with the Commission; or

(C) Arising out of the conduct of the business of an underwriter, broker, dealer, municipal securities dealer, investment adviser or paid solicitor of purchasers of securities;

(ii) Is not currently subject to any order, judgment or decree of any court of competent jurisdiction, entered within five years before such sale, that, at the time of such sale, restrains or enjoins such person from engaging or continuing to engage in any conduct or practice:

(A) In connection with the purchase or sale of any security;

(B) Involving the making of any false filing with the Commission; or

(C) Arising out of the conduct of the business of an underwriter, broker, dealer, municipal securities dealer, investment adviser or paid solicitor of purchasers of securities;

(iii) Is not currently subject to a final order of a state securities commission (or an agency or officer of a state performing like functions); a state authority that supervises or examines banks, savings associations, or credit unions; a state insurance commission (or an agency or officer of a state performing like functions); an appropriate federal banking agency; the U.S. Commodity Futures Trading Commission; or the National Credit Union Administration that:

(A) At the time of such sale, bars the person from:

(1) Association with an entity regulated by such commission, authority, agency, or officer;

(2) Engaging in the business of securities, insurance or banking; or

(3) Engaging in savings association or credit union activities; or

(B) Constitutes a final order based on a violation of any law or regulation that prohibits fraudulent, manipulative, or deceptive conduct entered within ten years before such sale;

(iv) Is not subject to an order of the Commission entered pursuant to section 15(b) or 15B(c) of the Securities Exchange Act of 1934 (15 U.S.C. 78o(b) or 78o-4(c)) or section 203(e) or (f) of the Investment Advisers Act of 1940 (15 U.S.C. 80b-3(e) or (f)) that, at the time of such sale:

(A) Suspends or revokes such person's registration as a broker, dealer, municipal securities dealer or investment adviser;

(B) Places limitations on the activities, functions or operations of such person; or

(C) Bars such person from being associated with any entity or from participating in the offering of any penny stock;

(v) Is not subject to any order of the Commission entered within five years before such sale that, at the time of such sale, orders the person to cease and desist from committing or causing a violation or future violation of:

(A) Any scienter-based anti-fraud provision of the federal securities laws, including without limitation section 17(a)(1) of the Securities Act of 1933 (15 U.S.C. 77q(a)(1)), section 10(b) of the Securities Exchange Act of 1934 (15 U.S.C. 78j(b)) and 17 CFR 240.10b-5, section 15(c)(1) of the Securities Exchange Act of 1934 (15 U.S.C. 78o(c)(1)) and section 206(1) of the Investment Advisers Act of 1940 (15 U.S.C. 8Ob-6(1)), or any other rule or regulation thereunder; or

(B) Section 5 of the Securities Act of 1933 (15 U.S.C. 77e).

(vi) Is not suspended or expelled from membership in, or suspended or barred from association with a member of, a registered national securities exchange or a registered national or affiliated securities association for any act or omission to act constituting conduct inconsistent with just and equitable principles of trade;

(vii) Has not filed (as a registrant or issuer), or was not named as an underwriter in, any registration statement or Regulation A offering statement filed with the Commission that, within five years before such sale, was the subject of a refusal order, stop order, or order suspending the Regulation A exemption, or is, at the time of such sale, the subject of an investigation or proceeding to determine whether a stop order or suspension order should be issued; or

(viii) Is not subject to a United States Postal Service false representation order entered within five years before such sale, or is, at the time of such sale, subject to a temporary restraining order or preliminary injunction with respect to conduct alleged by the United States Postal Service to constitute a scheme or device for obtaining money or property through the mail by means of false representations.

(c) **Confidentiality.** Except as contemplated hereby or required by a court of competent authority, each Equity Owner shall keep confidential and shall not disclose to others and shall use its reasonable efforts to prevent its Affiliates and any of its, or its Affiliates' present or former employees, agents, and representatives from disclosing to others without the prior written consent of the Managers any information which: (1) pertains to this Agreement, any negotiations pertaining thereto, any of the transactions contemplated hereby, or the business of the Company; or (2) pertains to confidential or proprietary information of any Member or the Company or which any Equity Owner has labeled in writing as confidential or proprietary; provided that any Equity Owner may disclose to its Affiliates' employees, agents, and representatives any information made available to such Equity Owner. No Equity Owner shall

use, and each Equity Owner shall use its best efforts to prevent any Affiliate of such Equity Owner from using, any information which:

(1) pertains to this Agreement, any negotiations pertaining hereto, any of the transactions contemplated hereby, or the business of the Company; or (2) pertains to the confidential or proprietary information of any Equity Owner or the Company or which any Equity Owner has labeled in writing as confidential or proprietary, except in connection with the transactions contemplated hereby.

CERTIFICATE

The undersigned hereby agree, acknowledge and certify that the foregoing Agreement constitutes the Third Amended and Restated Operating Agreement of LUCKY CORRIDOR, LLC adopted effective as of April 10, 2015.

LUCKY CORRIDOR, LLC

BY: _____
Lynn Chapman Greene, Manager

Its MEMBERS and ECONOMIC INTEREST OWNER(only where indicated):

_____
Lynn Chapman Greene

_____
Christine Lee Pope
(Member and Economic Interest Owner)

_____
William H. Pope
(Member and Economic Interest Owner)

Apex Energy Solutions, LLC
By:

_____
Ziad Alaywan

EXHIBIT A

Lucky Corridor, LLC
Operating Agreement

List of Members, Capital and Percentages

Lucky Corridor
Capitalization Table - Sharing Ratios
Profits Interests Included

Name	Date	Invest	Sharing	Invest	Sharing	Invest	Ownership	Invest	Sharing	PI Transfer	Sharing	Invest	Sharing	Assign	Sharing	Invest	Sharing	PI Transfer	Sharing	Invest	Sharing	Invest	Sharing
		$ 151,383.00		$ 100,000.00	10.00%	$ 480,000.00	4.00%	$ 1,040,000.00	8.67%	Profits Interests		$ 860,000.00	7.17%	Internal Assignments		$ 1,482,500.00	11.64%	Profits Interests		$ 387,500.00	2.02%	$ 200,000.00	1.03426%
		Founding		Apr - May 2010		[illegible]		Sep 2010 & May 11		July 2011 and Sept 2011		Dec 2011		3/21/2012		Mar 13		Jul 13		Dec 14		Mar 16	
				Post Money $	1,000,000	Post Money: $	12,000,000	Post Money $	12,000,000			Post Money $	12,000,000			Post Money $	12,000,000	Post Money $	18,750,000	Post Money $	19,137,500	Post Money $	19,137,500
		Invest	Sharing	Invest	Sharing	Invest	Ownership	Invest	Sharing	PI Transfer	Sharing	Invest	Sharing	Assign	Sharing	Invest	Sharing	PI Transfer	Sharing	Invest	Sharing	Invest	Sharing
[illegible]		$ [illegible]	100.00000%		[illegible]		[illegible]		[illegible]	[illegible]	[illegible]		[illegible]		[illegible]		[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
[illegible]	[illegible]			$ [illegible]	2.00000%		1.92000%		1.82667%		[illegible]		[illegible]		[illegible]		[illegible]		[illegible]		[illegible]		[illegible]
[illegible]	[illegible]			$ [illegible]	3.00000%		2.88000%		2.74000%		2.74000%		2.54363%		2.54363%		2.24751%		[illegible]		[illegible]		[illegible]
[illegible]	[illegible]			$ [illegible]	5.00000%		4.80000%		4.56667%		4.56667%		4.23939%		4.23939%		3.74585%		3.74585%		3.67001%		3.63205%
Subtotal				$ 100,000.00	10.00000%		9.60000%		9.13333%		9.13333%		8.47878%		8.47878%		7.49171%		7.49171%		7.34001%		7.26410%
[illegible]	[illegible]					$ [illegible]	1.66667%	$ [illegible]	1.66667%		1.66667%		1.54722%		[illegible]		[illegible]		1.36710%		1.33942%		1.32557%
[illegible]	9/22/2010					$ [illegible]	0.33333%	$ [illegible]	0.33333%		0.33333%		0.30944%		[illegible]		[illegible]		0.27342%		0.26788%		0.26511%
[illegible]						$ [illegible]	0.50000%	$ [illegible]	0.50000%		0.50000%		0.46417%		[illegible]		0.41013%		0.41013%		0.40183%		0.39767%
[illegible]						$ [illegible]	0.50000%	$ [illegible]	0.50000%		0.50000%		0.46417%		[illegible]		[illegible]		0.41013%		0.40183%		0.39767%
[illegible]						$ [illegible]	0.50000%	$ [illegible]	0.50000%		0.50000%		0.46417%		[illegible]		[illegible]		0.41013%		0.40183%		0.39767%
[illegible]						$ 60,000.00	0.50000%	$ 60,000.00	0.50000%		0.50000%		0.46417%		0.46417%		0.41013%		0.41013%		0.40183%		0.39767%
Subtotal						$ [illegible]	[illegible]	$ [illegible]	[illegible]		[illegible]		[illegible]		[illegible]		[illegible]		[illegible]		[illegible]		[illegible]
[illegible]	5/25/2011							$ [illegible]	0.50000%		0.50000%		[illegible]		[illegible]		0.41013%		0.41013%		[illegible]		0.39767%
[illegible]	5/25/2011							$ [illegible]	[illegible]		[illegible]		[illegible]		[illegible]		0.34177%		0.34177%		[illegible]		0.33139%
[illegible]	5/25/2011							$ [illegible]	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]		0.63536%		0.63536%		[illegible]		0.61606%
[illegible]	5/25/2011							$ [illegible]	[illegible]		[illegible]		[illegible]		[illegible]		0.30760%		0.30760%		[illegible]		0.29825%
[illegible]	5/20/2011							$ [illegible]	[illegible]		[illegible]		[illegible]	0.25491%	[illegible]		0.08236%		0.08236%		[illegible]		0.07986%
[illegible]	5/25/2011							$ [illegible]	0.50000%		0.50000%		[illegible]		0.46417%		0.41013%		0.41013%		0.40183%		0.39767%
[illegible]	5/25/2011							$ [illegible]	[illegible]		[illegible]		[illegible]		[illegible]		0.27342%		0.27342%		[illegible]		0.26511%
[illegible]	5/20/2011							$ [illegible]	[illegible]		[illegible]		[illegible]		[illegible]		0.68355%		0.68355%		[illegible]		0.66278%
[illegible]	5/20/2011							$ 100,000.00	0.83333%		0.83333%		0.77361%		0.77361%		0.68355%		0.68355%		0.66971%		0.66278%
Subtotal								$ 560,000.00	4.66667%		4.66667%		4.33222%		4.33222%		3.82788%		3.82788%		3.75037%		3.71158%
Profit Interests																							
[illegible]	[illegible]									[illegible]	[illegible]		[illegible]		[illegible]		[illegible]		0.82026%		[illegible]		0.79534%
William Henry Pope 2014 Trust	[illegible]									[illegible]	[illegible]		[illegible]		[illegible]		[illegible]		0.12304%		0.12055%		0.11930%
Christine Pope	[illegible]									[illegible]	[illegible]		0.32492%		0.32492%		0.28709%		0.28709%		0.28128%		0.27837%
Subtotal											[illegible]		1.39250%		1.39250%		1.23039%		1.23039%		1.20548%		1.19301%
Glen & Kylene Black	12/9/2011											$ [illegible]	[illegible]		[illegible]		0.73632%		0.73632%		0.72141%		0.71395%
George Hardberger & Theresa Allee	12/9/2011											[illegible]	[illegible]		[illegible]		0.36816%		0.36816%		0.36071%		0.35697%
[illegible]	12/9/2011											$ [illegible]	0.41667%		0.41667%		0.36816%		0.36816%		0.36071%		0.35697%
Max & Doris Swanburn	12/9/2011											$ [illegible]	[illegible]		[illegible]		0.73632%		0.73632%		0.72141%		0.71395%
Jerry & Debbie Annen	12/9/2011											[illegible]	[illegible]		[illegible]		0.07363%		0.07363%		0.07214%		0.07139%
Coy Myrick	12/9/2011											$ [illegible]	[illegible]		[illegible]		1.10448%		1.10448%		1.08212%		1.07092%
J.D. Myrick	12/9/2011											$ [illegible]	[illegible]		[illegible]		1.10448%		1.10448%		1.08212%		1.07092%
Jim & Emily Hall	12/9/2011											$ [illegible]	0.41667%		0.41667%		0.36816%		0.36816%		0.36071%		0.35697%
Windstar Investments, LLC	12/9/2011											$ [illegible]	[illegible]		1.66667%		1.47264%		1.47264%		1.44282%		1.42790%
Subtotal												$ [illegible]	[illegible]		7.16667%		6.33235%		6.33235%		6.20413%		6.13996%
[illegible]	3/28/2013															$ [illegible]	0.20833%		0.20833%		0.20411%		0.20200%
[illegible]	3/28/2013															$ [illegible]	0.66667%		0.66667%		0.65317%		0.64641%
[illegible]	3/28/2013															$ [illegible]	0.33333%		0.33333%		0.32658%		0.32321%
[illegible]	3/29/2013															$ [illegible]	2.00000%		2.00000%		1.95950%		1.93924%
[illegible]	4/2/2013															$ [illegible]	0.75000%		0.75000%		0.73481%		0.72721%
[illegible]	4/1/2013															$ [illegible]	4.00000%		4.00000%		3.91901%		3.87847%
[illegible]	4/2/2013															$ [illegible]	1.00000%		1.00000%		0.97975%		0.96962%
[illegible]	3/29/2013															$ [illegible]	1.00000%		1.00000%		0.97975%		0.96962%
[illegible]	4/2/2013															$ [illegible]	1.00000%		1.00000%		0.97975%		0.96962%
[illegible]	4/3/2013															$ [illegible]	0.76667%		0.26667%		0.26127%		0.25856%
Apex Energy Solutions, LLC	3/22/2013															$ [illegible]	0.41667%		0.41667%		0.40823%		0.40401%
Subtotal																$ 1,482,500.00	11.64167%		11.64167%		11.40594%		11.28798%
Profit Interests																							
Glen & Kylene Black	[illegible]																	1.0000	1.00000%		0.97975%		0.96962%
Coy Myrick	[illegible]																	1.0000	1.00000%		0.97975%		0.96962%
J.D. Myrick	[illegible]																	1.0000	1.00000%		0.97975%		0.96962%
																			3.00000%		2.93926%		2.90886%
[illegible]																				$ 287,500.00	1.50229%		1.48675%
Entrust Group, Inc. fbo Johnny K. Merrill IRA #60-01289																				$ 100,000.00	0.52253%		0.51713%
Subtotal																				$ 387,500.00	2.02482%		2.00388%
Robert F. Agnew	[illegible]																					$ 200,000.00	1.03426%
TOTAL			100.00000%	$ 100,000.00	100.00000%	$ 480,000.00	100.00000%	$ 1,040,000.00	100.00000%		100.00000%	$ 860,000.00	100.00000%		101.39250%	$ 1,482,500.00	100.00000%		100.00000%	$ 387,500.00	100.00000%	$ 200,000.00	100.00000%

Based on post money valuation of $19,137,500

Based on post money valuation of $19,137,500

Lucky Corridor
Capitalization Table - Sharing Ratios
Profits Interests Included

	$ 151,383.00		$ 100,000.00	10.00%	$ 490,000.00	4.90%	$ 1,040,000.00	8.67%	Profits Interests	$ 860,000.00	7.17%	Internal Assignments	$ 1,480,500.00	11.64%	Profits Interests	$ 381,500.00	2.67%	$ 250,000.00	1.93426%
	Founding		Apr - May 2010		Summer Yr. 2010		Sep 2010 & May 11		July 2011 and Sept 2011	Dec 2011		3/21/2012	May 13		Jul 13		Dec 14		Mar 16	
	Invest	Sharing	Post Money Invest	$ 1,000,000 Sharing	Post Money Invest	$ 12,000,000 Ownership	Post Money Invest	$ 12,000,000 Sharing	PI Transfer Sharing	Post Money Invest	$ 12,000,000 Sharing	Assign Sharing	Post Money Invest	$ 12,000,000 Sharing	Post Money PI Transfer	$ 18,750,000 Sharing	Post Money Invest	$ 19,131,500 Sharing	Post Money Invest	$ 19,331,500 Sharing
TOTAL by PARTY - CUMMULATIVE																				
Lynn Greene	$ 151,383.00	100.00000%	$ 151,383.00	90.60000%	$ -	86.40000%	$ 151,383.00	82.20000%	1.20000%	80.70000%	$ 151,383.00	74.91650%		74.91650%	$ 151,383.00	66.19497%	3.00000%	63.19497%	$ 151,383.00	63.91539%	$ 151,383.00	61.27502%
Christine Royal	$ -	0.00000%	$ 20,000.00	2.00000%	$ -	1.92000%	$ 20,000.00	1.82667%	0.26667%	2.17067%	$ 20,000.00	2.02667%		2.02667%	$ 20,000.00	1.78543%		1.78543%	$ 20,000.00	1.74928%	$ 20,000.00	1.73119%
William Henry Pope 2014 Trust	$ -	0.00000%	$ 30,000.00	3.00000%	$ -	2.88000%	$ 30,000.00	2.74000%	0.13889%	2.89000%	$ 30,000.00	2.98889%		2.98889%	$ 30,000.00	2.67815%		2.67815%	$ 30,000.00	2.62255%	$ 30,000.00	2.59853%
Apex Energy Solutions, LLC	$ -	0.00000%	$ 50,000.00	5.00000%	$ -	4.80000%	$ 50,000.00	4.56667%		4.56667%	$ 50,000.00	4.23639%		4.23639%	$ 100,000.00	4.16252%		4.16252%	$ 100,000.00	4.01824%	$ 100,000.00	4.03609%
Windstar Investments, LLC	$ -	0.00000%	$ -	0.00000%	$ 200,000.00	1.66667%	$ 200,000.00	1.66667%		1.66667%	$ 400,000.00	3.21389%		3.21389%	$ 640,000.00	4.89974%		4.89974%	$ 640,000.00	4.74174%	$ 640,000.00	4.69270%
Peter Shepard	$ -	0.00000%	$ -	0.00000%			$ -	0.00000%	1.00000%	1.00000%	$ -	0.92833%		0.92833%	$ -	0.82026%		0.82026%	$ -	0.80365%	$ -	0.79534%
Jim & Emily Hall	$ -	0.00000%	$ -	0.00000%	$ -	0.00000%	$ -	0.00000%		0.00000%	$ 50,000.00	0.41667%		0.41667%	$ 50,000.00	0.36816%		0.36816%	$ 50,000.00	0.35071%	$ 50,000.00	0.35697%
Max & Doris Swetburn	$ -	0.00000%	$ -	0.00000%	$ 40,000.00	0.33333%	$ 100,000.00	0.83333%		0.83333%	$ 200,000.00	1.60694%		1.60694%	$ 680,000.00	5.41987%		5.41987%	$ 680,000.00	5.31013%	$ 680,000.00	5.25521%
Coy Myrick	$ -	0.00000%	$ -	0.00000%	$ 60,000.00	0.50000%	$ 160,000.00	1.33333%		1.33333%	$ 310,000.00	2.48778%		2.48778%	$ 310,000.00	2.19816%	1.00000%	3.19816%	$ 310,000.00	3.13340%	$ 310,000.00	3.10098%
J.D. Myrick	$ -	0.00000%	$ -	0.00000%	$ 60,000.00	0.50000%	$ 160,000.00	1.33333%		1.33333%	$ 310,000.00	2.48778%		2.48778%	$ 310,000.00	2.19816%	1.00000%	3.19816%	$ 310,000.00	3.13340%	$ 310,000.00	3.10098%
Cathy Myrick	$ -	0.00000%	$ -	0.00000%	$ 60,000.00	0.50000%	$ 60,000.00	0.50000%		0.50000%	$ 60,000.00	0.48417%		0.48417%	$ 60,000.00	0.41013%		0.41013%	$ 60,000.00	0.40183%	$ 60,000.00	0.39767%
Glen & Kylene Black	$ -	0.00000%	$ -	0.00000%	$ 60,000.00	0.50000%	$ 120,000.00	1.00000%		1.00000%	$ 220,000.00	1.76167%		1.76167%	$ 220,000.00	1.56588%	1.00000%	2.56588%	$ 220,000.00	2.50481%	$ 220,000.00	2.47891%
George Hardberger & Theresa Anee	$ -	0.00000%	$ -	0.00000%	$ -	0.00000%	$ 50,000.00	0.41667%		0.41667%	$ 100,000.00	0.80347%		0.80347%	$ 100,000.00	0.70993%		0.70993%	$ 100,000.00	0.69556%	$ 100,000.00	0.68837%
Jason Brumley	$ -	0.00000%	$ -	0.00000%	$ -	0.00000%	$ 60,000.00	0.50000%		0.50000%	$ 60,000.00	0.48417%	0.25491%	0.71908%	$ 60,000.00	0.53526%		0.53526%	$ 60,000.00	0.52250%	$ 60,000.00	0.51605%
M.B. Enterprises, Inc	$ -	0.00000%	$ -	0.00000%			$ -	0.00000%		0.00000%	$ -	0.00000%		0.00000%	$ 90,000.00	0.75000%		0.75000%	$ 90,000.00	0.73481%	$ 90,000.00	0.72721%
Mitch & Janice Brumley	$ -	0.00000%	$ -	0.00000%	$ -	0.00000%	$ 45,000.00	0.37500%		0.37500%	$ 95,000.00	0.76417%		0.76417%	$ 125,000.00	0.97426%		0.97426%	$ 125,000.00	0.95454%	$ 125,000.00	0.94866%
3 B Cattle	$ -	0.00000%	$ -	0.00000%	$ -	0.00000%	$ 45,000.00	0.37500%		0.37500%	$ 95,000.00	0.76417%	0.25491%	1.01908%	$ 135,000.00	0.78386%		0.78386%	$ 135,000.00	0.76798%	$ 135,000.00	0.76004%
Jerry & Debbie Annen	$ -	0.00000%	$ -	0.00000%	$ -	0.00000%	$ 40,000.00	0.33333%		0.33333%	$ 95,000.00	0.76417%		0.76417%	$ 75,000.00	0.55539%		0.55539%	$ 75,000.00	0.54414%	$ 75,000.00	0.53851%
Dale & Cheryl Swetburn	$ -	0.00000%	$ -	0.00000%			$ -	0.00000%		0.00000%	$ -	0.00000%		0.00000%	$ 120,000.00	1.00000%		1.00000%	$ 120,000.00	0.97975%	$ 120,000.00	0.96862%
Larry & Rena Nelson	$ -	0.00000%	$ -	0.00000%			$ -	0.00000%		0.00000%	$ -	0.00000%		0.00000%	$ 120,000.00	1.00000%		1.00000%	$ 120,000.00	0.97975%	$ 120,000.00	0.96862%
Lance & Tom Lowdes	$ -	0.00000%	$ -	0.00000%			$ -	0.00000%		0.00000%	$ -	0.00000%		0.00000%	$ 184,500.00	1.00000%		1.00000%	$ 187,500.00	0.97975%	$ 187,500.00	0.96862%
Lane & Peggy Lowdes	$ -	0.00000%	$ -	0.00000%			$ -	0.00000%		0.00000%	$ -	0.00000%		0.00000%	$ 50,000.00	0.26667%		0.26667%	$ 50,000.00	0.26177%	$ 50,000.00	0.25856%
Robert A. Martinez	$ -	0.00000%	$ -	0.00000%			$ -	0.00000%		0.00000%	$ -	0.00000%		0.00000%	$ -	0.00000%		0.00000%	$ 287,500.00	1.50229%	$ 287,500.00	1.48675%
Entrust Group, Inc. fbo Johnny K. Merrill IRA #60 01289	$ -	0.00000%	$ -	0.00000%			$ -	0.00000%		0.00000%	$ -	0.00000%		0.00000%	$ -	0.00000%		0.00000%	$ 100,000.00	0.52253%	$ 100,000.00	0.51713%
Robert F. Agnew																					$ 250,000.00	1.93426%
TOTAL	$ 151,383.00	100.00000%	$ 251,383.00	100.00000%	$ 490,000.00	100.00000%	$ 1,291,383.00	100.00000%	100.00000%	$ 2,151,383.00	100.00000%		$ 3,631,883.00	100.00000%		100.00000%	$ 4,021,383.00	100.00000%	$ 4,221,383.00	100.00000%
New Money	$ 151,383.00		$ 100,000.00				$ 1,040,000.00			$ 860,000.00			$ 1,480,500.00				$ 387,000.00		$ 4,221,383.00	

EXHIBIT B

FOUNDING MEMBERS

Lynn Chapman Greene
Christy Lee Pope
William Pope
Apex Energy Solutions, LLC
Windstar Investments
Jim & Emily Hill
Max & Doris Swinburn
Coy Myrick
J.D. Myrick
Cody Myrick
Glen & Kylene Black
George Hardberger & Theresa Atiee
Jason Brumley
MJB Enterprises, Inc.
Mike & Janice Brumley
3B Cattle
Jerry & Debbie Annen
Dale & Cheryl Swinburn
Larry & Rena Nelson
Lance & Terri Louder
Lane & Peggy Louder
Unit 1

Owned by:	
Windstar Investments LLC	41.67% of Unit 1
J.D. Myrick	12.5% of Unit 1
Coy Myrick	12.5% of Unit 1
Cody Myrick	12.5% of Unit 1
Glen Black	12.5% of Unit 1
Max Swinburn	8.33% of Unit 1, (together, "Unit 1")

OFFICE OF THE SECRETARY OF STATE
OF THE STATE OF COLORADO

CERTIFICATE OF FACT OF GOOD STANDING

I, Wayne W. Williams, as the Secretary of State of the State of Colorado, hereby certify that, according to the records of this office,

Lucky Corridor, LLC

is a

Limited Liability Company

formed or registered on 10/03/2007 under the law of Colorado, has complied with all applicable requirements of this office, and is in good standing with this office. This entity has been assigned entity identification number 20071456286 .

This certificate reflects facts established or disclosed by documents delivered to this office on paper through 08/02/2016 that have been posted, and by documents delivered to this office electronically through 08/03/2016 @ 15:30:02 .

I have affixed hereto the Great Seal of the State of Colorado and duly generated, executed, and issued this official certificate at Denver, Colorado on 08/03/2016 @ 15:30:02 in accordance with applicable law. This certificate is assigned Confirmation Number 9771500 .

Secretary of State of the State of Colorado

**********End of Certificate**********

Notice: A certificate issued electronically from the Colorado Secretary of State's Web site is fully and immediately valid and effective. However, as an option, the issuance and validity of a certificate obtained electronically may be established by visiting the Validate a Certificate page of the Secretary of State's Web site, http://www.sos.state.co.us/biz/CertificateSearchCriteria.do entering the certificate's confirmation number displayed on the certificate, and following the instructions displayed. Confirming the issuance of a certificate is merely optional and is not necessary to the valid and effective issuance of a certificate. For more information, visit our Web site, http://www.sos.state.co.us/ click "Businesses, trademarks, trade names" and select "Frequently Asked Questions."

OFFICE OF THE SECRETARY OF STATE

NEW MEXICO

Certificate of Good Standing and Compliance

IT IS HEREBY CERTIFIED THAT:

LUCKY CORRIDOR, LLC

4375929

the above named entity, a Company organized under the laws of Colorado, is duly authorized to transact business in New Mexico as a Foreign Limited Liability Company, under the

Limited Liability Company Act 53-19-1 to 53-19-74 NMSA 1978

having filed its Application for Registration on November 29, 2010, and Certificate of Registration issued as of said date.

It is further certified that the fees due to the Office of the Secretary of State which have been assessed against the above named entity have been paid to date and the entity is in good standing and duly authorized to transact business as its existence has not been revoked in New Mexico. This certificate is not to be construed as an endorsement, recommendation, or notice of approval of the entity's financial condition or business activities and practices.

Certificate Issued: August 4, 2016

In testimony whereof, the Office of the Secretary of State has caused this certificate to be signed on this day in the City of Santa Fe, and the seal of said office to be affixed hereto.

Brad Winter

Brad Winter
Secretary of State

Certificate Validation #: 0001388

A certificate issued electronically from the New Mexico Secretary of State's office is immediately valid and effective. The validity of a certificate may be established by viewing the Certificate Validation option on the Business Filing System at https://portal.sos.state.nm.us/bfs/online and following the instructions displayed under Certificate Validation

OFFICE OF THE SECRETARY OF STATE
NEW MEXICO

August 4, 2016

Business ID #: 4375929
Entity Name: LUCKY CORRIDOR, LLC

Filing History

Instrument Number:	4375929
Filed Date:	11/29/2010
Instrument Type:	Name Registration
Instrument Text:	LUCKY CORRIDOR, LLC ORGANIZED UNDER THE LAWS OF COLORA 3, 2007 4 PGS

ACTIONS BY CONSENT
IN LIEU OF MEETING
OF
MANAGER
OF
Lucky Corridor, LLC
(A COLORADO LIMITED LIABILITY COMPANY)

EFFECTIVE DATE: AUGUST 19, 2016

BY CONSENT, the undersigned, being Manager of **Lucky Corridor, LLC**, a Colorado limited liability company (the "***Company***"), waives any notice required of a special meeting and pursuant to the operating agreement of the Company, as amended, ("***Amended Operating Agreement***") takes the following actions by consent, to have the same force and effect as actions taken at a meeting.

Filing an SF-299 Second Amended Permit Application with the United States Forest Service

WHEREAS, it is in the Company's best interest to file, on behalf of the Company, an SF-299 Second Amended Permit Application with the United States Forest Service, to get permission to build the Lucky Corridor from a point near the Springer Substation to a point near the Taos Substation, substantially in the form attached hereto as Exhibit A (the "Application"), as may be amended from time to time

RESOLVED, that the Company be, and it hereby is, authorized to file the SF-299 Second Amended Permit Application attached hereto as Exhibit A;

RESOLVED, that **Lynn Chapman Greene**, Manager of the Company be, and she hereby is, authorized to take all appropriate actions and to execute all documents, contracts and instruments which are necessary and appropriate in accordance with the resolutions stated above.

IN WITNESS THEREOF, the undersigned, constituting the Manager and owner of at least a 2/3 Interest of the Members of the Company, has executed this Action By Consent In Lieu of Meeting to be effective as of August 19, 2016.

Date: 8-19-16

Lynn Chapman Greene, Manager

Date: 8-22-16

Glen Black, Member

Date: 8-22-16

Coy Myrick, Member

Lucky Corridor, LLC
Equity Owners holding 3%+ of Company Shares

Contact Information

#	Name	Address/Email
1.	Lynn Chapman Greene	6526 Wauconda Dr. Larkspur, CO 80118
2.	Apex Energy Solutions, LLC Ziad Alaywan	604 Sutter St., Suite 250 Folsom, CA 95630
3.	Windstar Investments	P.O. Box 87 Edmonson, TX 79032
4.	Max & Doris Swinburn	1605 W. Bedford Dimmitt, TX 79027
5.	Coy Myrick	P.O. Box 18 Nazareth, TX 79063
6.	J.D. Myrick	2278 CR 528 Hart, TX 79043