

Strategic Plan 2022-2026 Renewable Taos, Inc.

Local Energy, a Strong Economy and a Resilient Community

January 10, 2022

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Renewable Taos, Inc. Strategic Plan 2022–2026

Executive Summary

Renewable Taos, Incorporated, is a 501(c)3 not-for-profit organization located in Taos, New Mexico that is dedicated to facilitating a full transition to emission-free electricity while building a resilient community in Taos County and the surrounding region. This Strategic Plan outlines goals, objectives, strategies and action plans for the next five years. Renewable Taos (RT) works to help mitigate the climate emergency caused by carbon emissions from the burning of fossil fuels. Adaptation to the warming world is vitally important. RT supports efforts to increase community resiliency and local sustainability.

The three core goals of RT, with objectives, are as follows:

- Achieve 100% Emission-Free Electricity in Northern NM
 - Increase Emission-Free Electricity Use to 80% by 2025 and 100% by 2030
 - Promote Electric Transportation
 - Increase Electricity Storage
 - o Improve Transmission in Northern New Mexico
 - Build a Resilient and Adaptable Community
 - Improve Local Plans and Policies
 - o Increase Local, Regional and Legislative Outreach
 - Promote Utility Modernization
- Become a Backbone Organization in Taos
 - o Engage and Educate Through Events and Media
 - Conduct Yearly Planning and Budgeting
 - Create a Renewable Taos Work Space

The first goal seeks to end reliance on burning fossil resources for heat through promotion of total electrification for beneficial use, electrification of transportation, more energy storage and improved electricity transmission. Accomplishment of this goal, or at least significant progress towards it, provides a model for other rural electric cooperatives to follow.

The second goal recognizes the need to have progressive policies and comprehensive plans developed and in place for sustained support of the first goal. Energy efficiency, local sustainability, legislation, and utility modernization support this goal.

The third goal fulfills expanding the role of RT within the community through educational events and further anchoring the organization through formal planning, budgeting and workspace development.

A strategy is provided for each objective under the three goals. In Appendix A, specific action plans are detailed by year, to be adjusted as necessary.

About Renewable Taos

Vision

Renewable Taos works to accelerate the transition from fossil fuels to 100% emission-free electricity while promoting a strong local economy and a resilient community.

Mission

Renewable Taos is an education and advocacy organization dedicated to accelerating a transition to 100% emission-free electricity for all energy needs in our region. We focus our efforts on educating ourselves and others, advocating with legislators at all levels, and on implementing projects that further this transition. We strengthen our work through collaborative efforts. Community resiliency and economic justice are essential to this work.

Goals, Objectives and Strategies

Goals define a destination. Objectives are the paths to get to the destination, and Strategies are what must be accomplished to get there, including action plans. Specific action plans are in Appendix A. Renewable Taos recognizes the key role of Kit Carson Electric Cooperative, the local utility, more than any other entity in the community in helping to accomplish these goals.

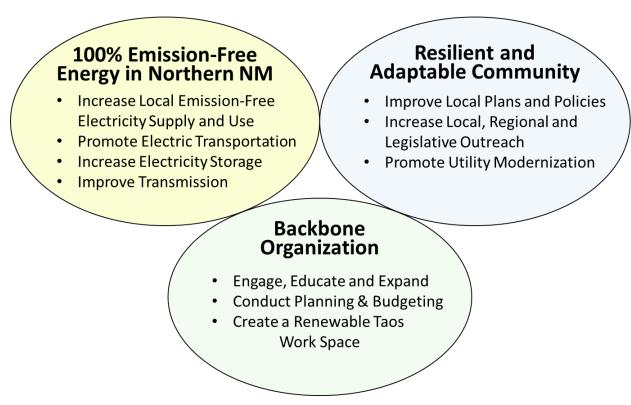


Figure 1. The three goals with objectives of the Renewable Taos Strategic Plan.

Goal 1: 100% Emission-Free Electricity In Northern New Mexico

Objective 1.1: Increase Local Emission-Free Electricity Supply and Use

Strategy: Through education of beneficial electrification, work toward a goal of 80% emission-free and renewable energy by 2025 and 100% by 2030 across all sectors.

This goal to increase the emission-free, renewable energy supply and use applies to all the energy sectors of traditional electricity, transportation, buildings, industry and agriculture RT is focused on the beneficial electrification of Taos County and across Northern NM. To achieve a goal of 100% emission-free electricity in Northern New Mexico, it is necessary to build additional distributed generation including local solar, access wind energy, electrify everything, and stop burning fossil resources for space and water heating, transportation, industry and agriculture.

The New Mexico Energy Transition Act mandates 40% "renewable energy" across the state by 2025, and 50% by 2030. Additional milestones are also in the Act. To meet these mandates, a major initiative is needed to increase the amount of renewable, emission-free electricity supply in the state.

Local Electricity Supply

Energy supply local to this region includes solar and wind generation. Solar is most effectively generated locally, while wind energy is sourced from Eastern NM. This mix of solar and wind will be supplemented by electricity storage to achieve the 80% goal. To reach the 100% goal, additional analysis is required.

Carbon-negative processes can provide combined heat and power. The source fuel of this biomass-based technology, forests, always need maintenance including thinning. All-electric thinning crews can help put carbon back into the ground.

Beneficial Electrification

Beneficial electrification (BE) is a term for replacing direct fossil fuel use (e.g., propane, heating oil, gasoline) with electricity in a way that reduces overall emissions and energy costs. Opportunities across the residential and commercial sector include switching to an electric vehicle or an electric heating system – as long as the end-user and the environment both benefit.

At the same time, electric utilities are looking for new ways to reverse declining electricity sales. Increasing electricity sales and decreasing carbon emissions creates a "win-win-win" proposition for electric utilities, the environment, and KCEC members.

However, several changes are converging to make the increased electrification of various sectors an increasingly attractive option from both an environmental and utility perspective. These include:

- Rapid growth in low-cost, zero-emissions power,
- Volatility in fossil fuel prices and availability (especially propane and heating oil),
- Increasing efficiency and performance of electric-powered appliances and vehicles,
- Growing need for electricity load management, and
- Emission reduction goals

The largest users of energy of all kinds in our community are the ski areas, municipal water and waste-water facilities, government and school buildings, vehicle fleets, Holy Cross Medical Center, and the Chevron mine reclamation project. Partnerships with the Town of Taos and Taos County, and other municipalities around the Enchanted Circle are critical. Local solar energy charges electric vehicles and powers all-electric homes during peak solar periods at absolute lowest cost.

Total electricity use may rise by 25% or more when transport and building electrification are partnered with energy efficiency improvements. Heating (and cooling) with ground- and air-source heat pumps instead of natural gas and propane helps with residential and commercial building electrification. Space heating and water heating can be encouraged during peak solar and wind generation periods.

The RT action plan includes steps to research and promote an increase in the supply and consumption of electricity from solar and wind sources across the traditional electricity, transportation, buildings, industry and agriculture sectors. See Appendix A for specific steps to achieving this objective.

Objective 1.2: Promote Electric Transportation

Strategy: Promote electric vehicles and fleet electrification by outreach and education.

Transportation accounts for more than 50% of emissions in northern NM, and is one of the main sectors along with traditional electricity, buildings, industry and agriculture. It is really impossible to overstate the importance of rapid progress in this sector of energy use.

Electric vehicle (EV) charging takes three forms: home, work, and public. Policy and infrastructure is needed for each. "No charging during peak load" is an example of policy. Standard equipment and software is needed by the utility to be able to implement time-of-use policies and rates.

Vehicle-to-Grid (V2G) technology allows EVs to become a battery-storage resource to the utility. This technology is not yet available, but promotion, planning, policy, equipment and software will be needed for homes and for fleets.

RT will advocate for political leadership in transitioning to EV fleets, and promotion of business opportunities. RT will coordinate with local banks regarding demographics and sales potential. Grants may be available. Promotion of state legislation for EV and charging station tax credits is important.

RT will offer to work with KCEC to develop policy for distributed EV charging station time-of-use controls to selectively increase or decrease load as needed.

RT plans to continue to advocate for and promote electric vehicles and fleet electrification in Taos and the surrounding region. See Appendix A for specific steps to achieving this objective.

Objective 1.3: Increase Electricity Storage

Strategy: Promote electricity storage at businesses and residences.

Storage compensates for intermittency of solar and wind generation, and provides backup in emergency or maintenance outages of local power. Expanding electricity storage with utility-scale projects and distributed (residential, commercial/business) battery systems will contribute to the 100% goal.

Solar and wind generation in other areas can be coupled with local utility-scale battery storage for use during our peaks. In effect, it's more local solar. It supports BE by cancelling transmission costs thereby offsetting additional cost for storage.

Electric vehicles are expected to be a large part of an energy storage solution. Vehicle-from-Grid (1-way, or V1G) technology and smart charging stations can be used to store excess grid generation to benefit the utility. Vehicle-to-Grid (V2G) and other home energy storage technology such as the Tesla Powerwall combined with distributed control through smart metering and broadband network connections will be effective.

RT plans to continue to research and promote options for increased electrical energy storage at all levels. See the Appendix for specific steps to achieving this objective.

Objective 1.4: Improve Transmission in Northern New Mexico

Strategy: Advocate for the development of transmission infrastructure for local use and for electricity export.

Transmission is key to tapping into potential large solar and wind electricity generation and for export to other markets and customers. By some estimates, 430 megawatts (MW) would be sufficient to make Taos County 100% emission-free.

In Taos, two-way transmission to eastern NM is needed for two main reasons:

- Inexpensive wind electricity is being developed in Eastern NM and needs east-to-west transmission to sell the product to local utilities as well as western energy markets. KCEC members will directly benefit from inexpensive wind energy.
- Utility-scale solar electricity from the west can be shipped into the eastern US grid via grid system interconnections. Utility-scale solar (50 to 500 MW) could be exported from Taos County. Electricity export is largely independent from the daily operations of KCEC, though coordination is absolutely necessary.

RT supports transmission line upgrades being developed such as the *Lucky Corridor/Vista Trail* project; however, this is not sufficient. Outreach and coordination with other organizations is key, such as with the NM Renewable Energy Transmission Authority (NM RETA). To support transmission upgrade projects, RT plans to coordinate with various entities and help promote the benefits.

RT intends to advocate for the development of transmission infrastructure and electricity generation for export See the Appendix for specific steps to achieving this objective.

Goal 2: Build a Resilient and Adaptable Community

Objective 2.1: Improve Local Plans and Policies

Strategy: Support coordination of plans and policies for community resiliency and adaptation, including energy efficiency.

Global warming is locked in and we will face extreme weather, drought, water supply disruption, and particularly fire in the coming decade. Improved plans and policies are needed to prepare and protect the community. RT supports building a resilient, sustainable and adaptable community by helping improve the local plans and policies through outreach and education. This will build the capacity of individuals, households, and institutions to prevent, prepare for, respond to, and recover from disasters. Improving energy efficiency of homes and businesses helps lower carbon emissions and reduce reliance on fossil fuels.

In our local area, the chief danger from global warming is catastrophic forest fires. RT supports the development of plans and policies to mitigate dangerous forest fires.

RT seeks to improve local building codes and standards for improved energy efficiency. Healthy energy efficient buildings include adequate insulation and high-quality windows and doors. An all-electric home includes air- or ground-source heat pumps, air exchange units and high efficiency water heating. In addition to new construction, existing buildings can be retrofitted to meet higher efficiency standards. Refurbishing includes conversion from propane and natural gas for heat and hot water to electric heat pumps.

We need to prioritize schools, health care facilities, public buildings, and rental properties for lower income families. These could all become at least 50% more efficient. These type of projects can likely be funded with federal and state support, and be a major employer and contribute to the economic development of the entire region. This could be a business area for KCEC as a service to co-op members.

Development of an outline for a community plan should address many facets and have support from KCEC and local governments. The outline should pay special attention to financing plans. See, for example, a Rand Corporation paper, "Building Community Resilience to Disasters: A Way Forward to Enhance National Health

Security," at <u>rand.org/technical reports/TR915.html</u> or the U.S. Climate Resilience Toolkit, available at <u>https://toolkit.climate.gov/topics/built-environment/community-resilience</u>.

Bringing this a little closer to home, Dr. Mark Stone, a Civil Engineering Professor, through the Resilience Institute at UNM, is bringing together many stakeholders throughout New Mexico in an effort to enhance New Mexican resilience in the face of climate change and associate disasters. They hold a Resilience Colloquium annually. More info at: <u>https://resilience.unm.edu</u>

RT will continue to engage with local government and supporting organizations to evaluate and propose improvements to local plans and policies to make the community more resilient and sustainable. See Appendix A for specific steps to achieving this objective.

Objective 2.2: Increase Local, Regional and Legislative Outreach

Strategy: Engage local, regional and legislative officials and advocate for emission-free electricity and community resiliency.

The demand for emission-free electricity today has not yet achieved a tipping point with the public and by all elected officials. An effort to make renewable energy technology more understandable through media and real-world examples is needed. The Enchanted Circle Council of Governments (ECCOG) has signed a joint agreement (add reference), but more needs to be done.

To understand the present level of knowledge in the community, RT would undertake an online and face-toface survey about climate change. With financial support from KCEC or other donors, this would establish a baseline. Data about children, adolescents and adults (categorized by age group, education level and other characteristics) and their understanding of the climate crisis will guide further outreach pertaining to effective programs and projects that have community acceptance.

To truly have an impact, we will reach out to and dialogue with like-minded organizations, religious organizations, the school system and other entities. By persistent, gentle (and sometimes not-so-gentle) persuasion, we can influence Taos, and in so doing, serve as a model for other regions such as Espanola and Jemez Mountains. RT allies with organizations such as *New Energy Economy* and *Retake Our Democracy*, for example. This will require consistent lobbying and education as well identifying motivated candidates for local leadership who understand and support ideas such as the Green New Deal.

This will require expanding operations, more travel, better communications, and continuous improvement of our website. We can also undertake more research and write opinion pieces on critical topics, ensure timely responses on issues like behind-the-meter and microgrids, and expand our influence through lecture programs including arranging and delivering presentations in areas around the state, and so on.

RT plans to continue to engage with local residents and businesses, regional electric cooperatives, and legislators at all levels to advocate for emission-free electricity and community resiliency. See the Appendix for specific steps to achieving this objective.

Objective 2.3: Promote Utility Modernization

Strategy: Engage with KCEC and other regional utilities to promote emission-free energy, help plan rate structure changes, promote resiliency, and support elections and business improvements.

The local utility, Kit Carson Electric Cooperative, is proactive in building additional EV charging infrastructure, solar arrays and battery storage. However, additional work can be done to expand services and benefits to members while also providing a model for other rural utilities that are transitioning to emission-free electricity. Topics such as all-electric building standards, home energy efficiency and management, low-income resident support, affect the co-op members directly.

Development of a new, comprehensive, modern rate structure at KCEC can help solve a number of issues such as net-metering and revenue stabilization through decoupling electricity sales and operational expenses.

Analysis of other beneficial rates such as EV charging during peak solar can have profound effect. A rate structure must also support local businesses. Through a coordinated discussion with KCEC, a fair and agreed-upon rate structure can be submitted to the PRC for approval.

Microgrid technology provides resiliency when power is interrupted. A coordinated plan for the entire North Central NM service area would serve to optimize benefits and reduce costs. RT intends to work with KCEC to propose and support cost-benefit analyses and implementation of pilot projects where effectiveness is maximum.

RT plans to continue to engage with KCEC to promote progressive plans and policies. See Appendix A for specific steps to achieving this objective.

Goal 3: Become a Backbone Organization in Taos

Objective 3.1: Engage, Educate and Expand

Strategy: Develop and implement a multi-faceted outreach and communication plan, including website, social, print and broadcast media and various public events.

Building public support, dispelling misinformation, and successfully developing a community-wide understanding are key ingredients for making the rapid shift from natural gas, propane, diesel and gasoline fuels to emission-free electricity a reality.

Strong public relations, interactions with multiple stakeholders and other methods are presently employed and will be expanded upon to help meet this objective, including:

- Annual seminars or other events for the community each spring (perhaps around Earth Day) offer information about the climate crisis and the adaptation challenges that lie ahead.
- The Taos Electric Vehicle Expo provides a forum for guest speakers and multimedia presentations as well as outdoor exhibits to engage the community in this educational experience.
- A Climate Action Forum could provide an opportunity for large group education on emission-free electricity and related topics such as resilience and adaptation.
- RT collects, adapts and maintains Fact Sheets that can be used at multiple outreach and educational events such as the KCEC Annual Meeting, the Taos Environmental Film Festival, and so on.
- RT can engage in surveys, in-person meetings and other outreach programs to best understand the challenges and expenses involved with transitioning to an all electric energy source.
- Evening meetings (on-line or in person) will be held to encourage greater participation by community members.

RT has Facebook and Twitter accounts, among others. A goal is to drive social media traffic to them. RT could consider a monthly column in the *Taos News* and advertising on local theater screens as well.

RT intends to expand communications through a variety of methods, including those listed above. See Appendix A for specific steps to achieving this objective.

Objective 3.2: Conduct Yearly Planning and Budgeting

Strategy: Conduct annual planning and budgeting efforts and develop and implement a fund-raising plan.

As RT expands the scope of community engagement and technical consultation and advocacy, conducting yearly planning and budgeting is key to meeting objectives and goals. RT will consider a budget of up to of

\$40,000 in 2021-2022 with measured increases in subsequent years. RT will investigate sources of funding such as Department of Energy for energy efficiency, and other organizations.

RT will conduct yearly planning and budgeting. Financial stability will be supported by fundraising and grant application plans. See Appendix A for specific steps to achieving this objective.

Objective 3.3: Create a Renewable Taos Work Space

Strategy: Open an office and work space, and pay staff and volunteers for work performed.

It is important to both encourage volunteer support and execute tasks to meet strategic goals. Because of the ambitiousness of this plan, office administrative support and subject-matter experts can be paid for service. Beginning in 2022 with perhaps one or two part-time staff, a nominal salary can be budgeted. Volunteers can also apply for and be reimbursed for travel, conferences and other costs. Bookkeeping and accounting has been centralized, but staff can be hired for other administrative duties. Office administrative assistance can possibly be cost-shared between RT and other organizations. Office space, possibly shared, will have minimal energy use, with the goal of generating more than is used.

RT plans to research opportunities for opening an office that will serve as a community resource and an *emission-free energy* work space. Funding for staff and volunteer support will be part of the plan. See Appendix A for specific steps to achieving this objective.

Metrics and Budget

Measurement of Performance

As RT completes significant tasks meant to accomplish goals, the progress will be tracked and reported in the RT Annual Report. Progress may be updated quarterly. A metric of dollars per ton of carbon dioxide (or other contaminants) avoided, eliminated, removed or sequestered is a prime metric for our work. A financial analysis of income and expenditures towards meeting goals will be a component of the RT Annual Report.

Budget

Income Categories

Membership Dues

Donations

Grants

Expense Categories

Office Space

Office Supplies, Mail, Utilities, Etc.

Printing and Publication

Fact Sheets and Brochures

Other

Staff Salary

Contract Support

Consultant Fees

Education of Staff

Travel – Staff

Travel - Volunteers

Events

Earth Day on the Plaza / Environmental Film Festival

EV Expo

Educational Forums

Advertising – General Fundraising Event(s)

Strengths, Weaknesses, Opportunities and Threats

Strengths

- RT is unique among other environmentally-oriented groups in northern NM in that our focus is on emission-free electricity for household, agricultural, transportation and industrial use.
- RT has a growing interest in community sustainability, resilience and adaptation in the face of climate change and environmental crisis.
- RT has a reputation as an independent organization working for the citizens of Taos.
- RT fills a need in the community, and works with others, particularly KCEC.
- RT is on an upward financial trajectory, possibly opening an office in 2022.
- RT has volunteers with expertise in various related professions and community engagement, including government, engineering, communication, human resources, law and advocacy.

<u>Weaknesses</u>

- The organization needs assistance in growing the in-house expertise and community engagement to achieve the goals. The needs are financial, programmatic and administrative.
- Sometimes the diverse skills of the core group are not tapped as efficiently as possible.
- As we grow, the volunteer-only staff will become a liability. Funding for one or two paid staff can support additional community engagement and allow RT to become more of a resource.

Opportunities

- RT has the challenge of local political advocacy and elected official education.
- Coordination with other not-for-profit organizations provides synergy and cost-effective activism.
- The next few years will be critical for RT and affiliated groups to converge and make progress.
- With the support of and in synergism with Taos United and other community organizations, RT can achieve greater visibility in Taos County and the region.

Threats

- There is a global threat of catastrophic climate change impacting agricultural, financial, and worldwide sustainment systems. There is global movement to change and address these issues.
- Lopsided discussions in the RT weekly meetings threaten the cohesiveness of the group to move forward on the wide variety of issues that individual members are interested in pursuing.
- There is high political pressure from oil/gas/coal interests to maintain the status quo.
- Lack of economic opportunity continues to fragment and create a net loss of jobs in the area.

Acknowledgements

In reviewing the Renewable Taos Annual Reports, a tremendous amount of work and influence has been generated by a central group of dedicated individuals. This work in outreach, teaching, analytical analysis and research is a great foundation upon which this Strategic Plan has been developed. Appreciation is expressed to all those who contributed to this planning process. The core group of RT members meets weekly. It can be said *they punch far above their combined weight* in terms of impact.

Appendix A. Objectives, Strategies and Action Plans

Action plans within this Strategic Plan are meant to address "what we will do." This Appendix provides ideas, guidelines, methods and suggestions, as well as specific tasks, projects and deliverables to meet the objectives and goals of Renewable Taos. Action plans can be intended for individual members, small teams, consultants, large teams and the full membership. As the years progress, specific actions will be accomplished, yet some may be deferred to future years. Some actions may be brought forward to be worked earlier as needed. These Action Plans will be reviewed each year for evaluating accomplishments towards goals.

Goal 1: 100% Emission-Free Electricity In Northern NM

Objective 1.1 Increase Local Emission-Free Electricity Supply and Use

Action Plan:

The goal to increase local electricity use (and commensurate supply) to 80% by 2025 and 100% by 2030 will require major effort on many fronts. To be able to chart progress, RT needs accurate, up-to-date information on energy use, supply and pricing of common energy sources (electricity, gasoline, natural gas propane and wood). Below is a preliminary list of actions that are planned to meet this objective.

2022:

- Identify difference between current electricity supply and 80% goal.
- Estimate near-term optimum mix of solar (~35%) and wind (~65%) along with battery storage needs to meet the 80% goal.
- Identify sources for additional solar and wind, including roof-top, utility-scale and imports, and examine impediments.
- Identify large users of electricity and energy (natural gas, gasoline, diesel fuel, propane, etc.).
- Develop a model showing total systems benefits of transitioning to more electricity.
- Create a plan outlining potential implementation with data based on actual transition projects.
- Identify difference between current electricity supply and 100% goal.
- Estimate long-term optimum mix of solar (~35%) and wind (~80%) along with battery storage needs to meet the 100% goal.
- Outline of a program to provide demand management services for large customers.

2023-2026:

- Continue coordination and activism towards beneficial electrification.
- Develop plans to make remaining electricity uses emission-free by 2030 or earlier.

Objective 1.2 Promote Electric Transportation

Action Plan

As electric vehicles continue to be developed and produced, RT will promote and encourage adoption.

2022:

- Participate with KCEC to develop an Electric Vehicle Charging Infrastructure Plan.
- Develop a preliminary analysis showing benefits of 100% electrification of the vehicle fleets of town, county, schools, KCEC, Blue Bus, etc., perhaps modeled after Dominion Energy.
- Conduct an inventory of fleet vehicles, including where they are parked at night.

- Collect information on bulk charging stations and power requirements, including costs and electric service availability.
- Continue promotion through annual EV Expos, with speakers and exhibitors.

2023-2026:

- Investigate potential for establishment of an electric vehicle sales operation in Taos, with a pilot project of maintaining an online website for affordable used EVs.
- 100 percent of the local fleets to be electric-powered by 2025.

Objective 1.3 Increase Electricity Storage

Action Plan:

RT plans to continue to promote options for increased electricity storage at all levels and scales.

2022:

- Research and develop a concept for distributed electricity storage that considers residential and business storage.
- Coordinate with KCEC to review options and propose a path forward to increased storage throughout the KCEC service area.

2023-2026:

• Promote distributed electricity storage in conjunction with microgrid and other initiatives.

Objective 1.4 Improve Transmission in Northern New Mexico

Action Plan:

The general idea behind the plan would be to create a "local political movement" that would do everything it could to create a "pull" in the Taos community for implementation of the Lucky Corridor project. The tasks to achieve this objective will have to be revised as the year goes on and as we learn more about the project.

2022:

- Develop a plan for advocacy for improved transmission as well as electricity generation and export. Include model output showing economic and environmental benefits. Emphasize local ownership and options.
- Conduct meetings and support the corporate owner and project manager of the Lucky Corridor project (Ameren), Carson National Forest (and any other permitting authorities identified), the Town and County of Taos and any other party involved with a view to understanding each party's role in the project, their attitude toward it, the pros (including two way transmission) and cons of the project and if or how each party might be helpful.
- Based on what we learn from these meetings, work with the project manager to identify every major
 obstacle to the completion of the Lucky Corridor project and determine which of these obstacles we
 can play a role in eliminating. Support Ameren in developing a plan to eliminate obstacles we can
 influence that stand in the way of the completion of the project.
- Identify what other entities in the Taos region have a common interest in achieving this objective and attempt to partner with them to build a political movement in support of this project.
- Develop a presentation package that lays out a potential outcome for Taos County.
- Investigate opportunities for utility-scale generation and roadblocks such as access to transmission or substations.

- Investigate potential customers for generation, such as Los Alamos, PNM, etc.
- Outreach to NM RETA and strategizing for appropriate course of action.
- Advocate with other state organizations (NM EMNRD, etc.) to refine plan and objectives.
- Become familiar with the 2020 legislation HB 233 Energy Grid Modernization Roadmap and other relevant legislation and Governor Executive Orders.

2023 – 2026:

- Actively recruit local organizations and local government to pursue goals.
- Continued advocacy for improved transmission and access to transmission.

Goal 2: Resilient and Adaptable Community

Objective 2.1 Improve Local Plans and Policies

Action Plan:

Improving local plans and policies, such as building codes, requires knowledge of deficiencies and areas of improvement. Books, examples and Toolkits exist to support actions. RT will encourage members to engage with appropriate organizations to establish resiliency plans and sustainability policies.

2022:

- Begin coordination with other Taos organizations with emphasis on a just transition to a resilient, sustainable community.
- Identify key groups to approach, including middle and high schools; universities; churches and other religious groups; business owners; farmers and ranchers; Chamber of Commerce, Rotary, Lions, VFW, and so on.
- Create an action/implementation plan for continued awareness and education dialogues.
- For students, provide awards for renewable energy science fair projects, offer interactive talks in county middle and high schools, and offer "hands on" emission-free electricity and energy projects for local high school students.
- Encourage the use of Science on a Sphere as a resource, providing training as necessary.
- For businesses, organizations, farmers, ranchers, organize interactive discussions in churches and in rural communities (e.g., Amalia, Carson, Peñasco, many others).
- Resilience Program Outline by 2022.

2023-2026:

• Based on progress in 2022, adapt plan to continue coordination and activism.

Objective 2.2 Increase Local, Regional and Legislative Outreach

Action Plan:

RT will continue to encourage all members to be active in local, regional and legislative outreach. This can take many forms. Local outreach includes businesses and business organizations, schools, the Town of Taos, Taos County and other institutions. Regional outreach includes other northern New Mexico and southern Colorado rural electric cooperatives, towns, Pueblos, and villages. Legislative outreach includes the NM Executive Branch and Legislature, and US Senators and Representatives, in local and other NM districts.

2022:

- Create a list of individuals and organizations to support our modest outreach effort. Create a list of current topics that people can refer to. Post the lists on the website and update specific topics as needed. Encourage members to reach out.
- Solicit support from the Taos County Commission, Town Council and Taos United to organize a Climate Action Forum in 2022, possibly along with the EV Expo, with the participation of local environmentally oriented groups.
- Engage state officials by providing feedback to sharpen the Governor's Climate Strategy.
- Support development of a government affairs plan to monitor, influence and lobby state and local officials as well as the activity of KCEC and its Trustees.

2023 - 2026

- Continue to engage with local governments and organizations throughout the year.
- Support for Green New Deal from Pueblo Councils, State and Federal officials by 2023.

Objective 2.3 Promote Utility Modernization

Action Plan:

As progressive as KCEC may seem, additional emphasis on rates, renewables and storage is needed.

2022:

- Participate with KCEC and the Regulatory Assistance Project in developing a modern rate structure for KCEC members that includes emphasis on beneficial electrification and local generation.
- Support advanced monitoring and control systems for management of KCEC operations.
- Support progressive KCEC board candidates in elections.

2023-2026:

• Look out to the next election and get engaged. Elections every two years, four-year term.

Goal 3: Become a Backbone Organization in Taos

Objective 3.1 Engage, Educate and Expand

Action Plan:

RT has a history of engaging with the public through educational seminars and other events. Actions that can be taken to continue this and expand our outreach are listed below, in no particular order.

2022:

Expanding Membership

- Increase outreach and target gaining 20 new members by end of 2022.
- Place ads in Taos News and on radio stations, including popular cultural stations
- Send 1-2 question survey to Taos Chamber of Commerce, The Hive, SBDC and other groups. (Ask HOW to interest people in renewable energies in our local community.)
- Organize evening meetings (Zoom? In-person?) every two weeks for eight weeks.
- (Bring in speakers, as had been done? Consult with specific people about who would draw them in.)

Engage and Educate

- Update the Fact Sheet library and develop presentations for a variety of audiences. Provide links to other online Fact Sheets and resources, e.g., Climate Reality Project and Unplug America.
- Revive the *Riding the Blue Marble Together* lecture series.
- Support Earth Day activities including clean-ups.
- Hire a consultant for improving the web presence.
- Start a photo archive to be available to the public.
- Write a periodic column for publication in the *Taos News* and other regional media.
- Tweet regular messages and post regular Facebook updates.
- Join the global movement by registering RT at climateaction.unfccc.int

2023 – 2026:

- Continue annual Taos EV Expo in the fall. Coordination with the National Drive Electric Week organization (partly sponsored by the Sierra Club) is to be considered on an annual basis.
- Support an annual Earth Day event in April of each year.

Objective 3.2 Conduct Yearly Planning and Budgeting

Action Plan:

Critical to all successful organizations, planning and budgeting allows goals to be set and met.

2022:

- Develop a Strategic Plan and a budget that supports the goals and activities.
- Develop a fundraising plan for 2020, with projections for the coming years.
- Investigate and document various funding sources.
- Apply for funding and grants as applicable.

2023-2026:

- Update the Strategic Plan and fundraising plan for current year as needed.
- Apply for funding and grants as applicable.

Objective 3.3 Create a Renewable Taos Work Space

Action Plan:

RT is in a position to establish a work space to benefit its operations, meetings, and also offer services to the community. This space would be a model for energy efficiency, renewable energy and zero-carbon operations.

2022:

- Locate and contract for space that provides conferencing facilities and can be a media repository.
- Based on budget, contract for administrative support.

2023 – 2026:

• Increase budget through fundraising and expand operations in accordance with this Strategic Plan.

Appendix B. The Transition to Clean Electricity

We are moving into a new decade for both catastrophic weather events due to global warming and for clean energy. This plan presents goals for the critical decade of 2021-2030.

The global climate is changing, and the main vector of that change is warming.

The earth's atmosphere, our oceans and seas, and the earth itself is warming as humanity's destructive emissions of greenhouse gases, primarily CO2 but others as well, have persistently increased, causing catastrophic weather events. There were a few years in the early part of the last decade where there appeared to be a pause in warming, and the term "climate change" replaced global warming. The year 2019 was the second hottest year on record, only one-tenth degree Fahrenheit cooler than the previous hottest year which was only three years before, in 2016. Warming drives the other harmful effects of climate change.

For each degree of warming, the atmosphere absorbs an additional seven percent moisture. Atmospheric warming propels the destructive storms, flooding, landslides, glacier melting, sea level rise, melting of the Arctic tundra and release of vast amounts of methane, and even the droughts that afflict our planet. We should change our terminology back to *global warming* as the most accurate way to describe our dilemma.

New Mexico is as affected as everywhere else on the planet and the U.S.

New Mexico is the second fastest warming state in the United States, as reported at: <u>https://www.climatecentral.org/news/report-american-warming-us-heats-up-earth-day</u> It trails only Alaska for the pace of temperature increase. Between 1970 and 2018, the average temperature increased by 3.32° F. In 2012, New Mexico was not even on the list of the 10 fastest-warming states.¹ Some people may believe these temperature increases are not very big. But think about the human body, with an average temperature of 98.6° F. When we get a fever of even two degrees, we are not very happy, and when it rises to 100°, we start to worry. Now think about the fever never going down – that is what is happening with our fragile planet and right here in New Mexico.

Unfortunately, the bad news does not stop there. NM produced more than 66 million metric tons of greenhouse gas emissions in 2018, about 1% of the national total. Yet we are home to about 0.6% of the nation's population. New Mexicans produce **31 tons** of greenhouse gas emissions per person per year, compared to the national average of 18 tons per person.² These gas emissions matter to our air, our land, our water and, of course, our health and the health of our state's wildlife.

Our planet is in a perilous state.

Almost the entire continent of Australia is on fire and more than a billion of their wild animals have perished. California has had multiple years of devastating wildfires. Electric utilities have shut off power to large parts of that state to avoid making things worse. Wildfires are only one weather consequence of climate change. Others include drought, devastating hurricanes, catastrophic storms and floods.

The Intergovernmental Panel on Climate Change announced in late 2018 that we have ten years to cut global emissions in half. In effect, that means that the United States, in particular, must cut CO2 emissions to zero by 2030, a monumental but doable task.

Climate change is here to stay.

We do need to eliminate CO2 emissions from our energy supply, but the extreme weather events, droughts, sea-level rise, and wildfires will be with us well into the future. That means that we must also build **resilience** into our infrastructure. We need to take aggressive measures to make our electric transmission and distribution systems safer. That means clearing defensible paths for distribution and transmission wires and trimming vegetation that might threaten them. That was the main cause of fire in Northern California, and it is as great a risk in New Mexico. As the NM forests dry out, forest fires caused perhaps by poor transmission line maintenance, further endanger town and villages. In 2015, the Jemez Mountains Electric Cooperative was

¹ <u>https://www.livescience.com/20899-climate-change-fastest-warming-states.html</u>

² <u>NM Climate Change 2019 Report, p. 4.</u>

found to be 75% responsible for the 2011 Las Conchas forest fire. It was caused by a tree falling onto a power line located on Forest Service land and consumed 156,000 acres.

Resilience also means expanding transmission and strategically building microgrids, especially for core institutions like hospitals, emergency services, schools, and some government functions like potable water and waste-water treatment. The Taos Valley acequias have over 300 years of experience in resilience by working together to share water resources and use the associated community relationships to survive and flourish through historical drought and floods. (In addition, farming practices may need to change and already, groups and businesses like Taos Land Trust, Morning Star Farm, Taos Pueblo, and the Farmhouse Café are consciously practicing or supporting re-generative agricultural methods.) Building resilient community cooperation at every level.

Prices of emission-free electricity continue to decline.

The latest prices for wind electricity in our region are about two cents per kilowatt hour. That is one-third the cost of electricity from natural gas generators. **One conclusion** we draw is that wind should comprise a major portion of the electricity supply for New Mexico. The Solutions Project, a creation of Stanford Professor Mark Jacobson, estimates that 50% or more of New Mexico's electricity should come from wind. Solar and storage costs are also declining rapidly. Solar is now available at wholesale prices in the 2 to 2.5 cents per kilowatt hour, half or less than the cost of Natural Gas. **Another conclusion** we draw from falling prices is that the falling cost of electricity should be passed on to end users by every electric utility.

One major obstacle to the use of wind electricity and of reaching 100% emission free electricity is limitations in our transmission grid.

We need to bring wind electricity from Eastern N.M. where wind is plentiful and reliable directly to the Kit Carson service area. One possible option is building the Lucky Corridor Transmission line, a win-win for wind electricity and everyone on the Taos community. Getting wind electricity to Taos does not have to wait for the Lucky Corridor, as there are other options. But **there is no escaping the conclusion that we need more and smarter transmission**. That is an absolute requirement for making significant progress toward 100% clean electricity. The NM legislature is focusing on grid modernization, among other related subjects.

By the end of 2021 or early 2022, KCEC will have come close to reaching the goal for 100% daytime summer local solar electricity generation.

Local daytime summer solar generation will have a peak of about 40 megawatts. Because it is locally generated, the community will save the normal transmission cost of around 2 cents per kilowatt hour. Given our pattern of usage solar will reached a natural limit when the sun is shining, we will likely at some points in time produce more solar electricity than we can consume. That excess electricity must be stored, wasted, or sold to other regions. There are no technical barriers to such sales. We need to overcome the contractual barriers in allowing two-way transmission on the large 345kV transmission line leading from Taos to the Chili substation 18 miles south of Ojo Caliente.

We can add more demand for electricity by electrifying transportation, the heating and cooling of our buildings, and agriculture and industry.

That must be our goal if we are serious about eliminating global warming. EVs are simply better than gaspowered transportation. There is a strong argument to be made that EVs are already cheaper. The cost of the electricity that powers cars is equivalent to \$1/gallon, so fuel costs are already cheaper. EVs are much easier to maintain. The motors are simpler, and maintenance and repair are a fraction of the cost of maintaining internal combustion engines. And all the EV costs are falling dramatically. We need aggressive goals in all these sectors.

On the national level, the Green New Deal (GND) proposed by presidential candidates Sanders and Warren³ are the first proposals for the U.S. to adequately address both the scale and the urgency of the climate crisis.

³ The *Green New Deal* was first launched by Senator Edward Markey and Representative Alexandria Ocasio-Cortez and championed by several 2020 Presidential candidates. Among many others, it is supported by the Sunrise Movement, a youth activist group, Sierra Club and 350.org.

The GND aims to reduce carbon emissions to zero by 2030. We should do the same in North Central New Mexico. In fact, there are even more benefits for zero carbon emissions in our region than in most other parts of the country because we have such a rich supply of both wind and solar electricity. Developing those resources is the best path to enriching our community.

At the global level, the COP-26, while disappointing in many ways, provides some guidance on ways forward. Of particular interest to New Mexico is the Global Methane Pledge, which commits signatories – including the US – to reduce overall emissions by 30 percent by 2030, compared with 2020 levels. The US government published a "blueprint" of how it intends to meet the goal.

In summary, Renewable Taos wishes to dedicate all its efforts to ensuring a sustainable future for northern New Mexico. We recognize that without similar efforts at state, regional, national and international levels, our little "island of tranquility" will not be able to sustain itself in the future. That is why we will work with all individuals, organizations and government entities to ensure a healthy, equitable future for all.

Appendix C. Organizational History

Organization Foundation

Renewable Taos was co-founded on October 28, 2012 for the purpose of advancing the transition from fossil fuel-derived electricity to locally-generated emission-free electricity in Taos County and North Central New Mexico. Founding members included Mary Emery, Gaia Mika, Jay Levine, William Brown, John Gusdorf and Bob Bresnahan.

John and Bob met with energy activists and officials and politicians in Taos and Santa Fe to gain an understanding of the current state of affairs in renewable energy in N.M. Based on the information gathered in these interviews they recommended that advocacy for accelerating the transition to emission-free electricity focus on the Kit Carson Electric Cooperative (KCEC) which at that time was among the top five rural utilities in per capita solar electricity deployment. They joined with the other founding members to launch Renewable Taos, Inc., in 2014. John's modeling. KCEC consolidates the energy decisions and the electricity purchases of 99% of households and businesses in its service area. Gasoline, diesel, natural gas and propane will be replaced by electricity over the next decade. Kit Carson will be even more at the center of the transition as we ELECTRIFY EVERYTHING.

During the first phase of its existence beginning in 2013 RT adopted a number of core strategies in support of its goal of transitioning to 100% emission-free electricity. These strategies remain central to RT's work.

- RT focuses its work in North Central New Mexico in roughly the service area of Kit Carson Electric.
- RT's goal of 100% emission-free electricity applies to all sectors of the economy that emit Greenhouse Gases including Traditional Electricity, Transportation, Building Space and Water Heating, Agriculture, and Industry. RT's initial focus has been on Traditional Electricity, but that will expand to Transportation and Buildings in the coming five years.
- Kit Carson consolidates the electricity purchasing power of 29,000 households, commercial establishments and businesses, thus it has been and will continue to be the focus of our work.
- RT has emphasized local generation of solar electricity. Local energy infrastructure jobs and tax revenues that improve the local economy. It also leads to savings on transmission fees and reduces line losses by generating electricity close to its point of use.
- Building community support for the transition to clean electricity is central to RT's work. Examples include a series of lectures, the Joint Resolution for Renewable Energy which RT circulated to local governments and core community groups, and the annual EV Expo.

Data on energy use and greenhouse gases emissions for the Town and County of Taos, NM was used to demonstrate that emission-free electricity was both practical and economical for Taos and vicinity. They worked through electricity economics and determined that the costs being paid by Taos area citizens for fossil fuel electricity could readily support a transition to clean, emission-free electricity.

Taos at one time could arguably claim to be the solar capitol of the world. Starting in the 1970s solar photovoltaic panels were installed on many homes in Taos County, and many homes employed passive solar heating systems. Since 1991, radio station KTAO's transmitter has been completely solar powered. It was during this period that Taos became known as a leader in emission-free electricity. The first sizable solar array was installed at UNM-Taos in 2008. The first rooftop solar array was installed behind the meter and connected to the Kit Carson grid soon after. The first MW sized solar array tied to the Kit Carson grid was installed in 2010. The first community solar array in New Mexico was launched in the summer of 2012. Since then Taos remained a leader in rural renewable electricity generation, but has lagged behind communities that produce much or all of their own clean renewable energy.

The fledgling organization quickly attracted a core group of people to focus on a renewable electricity future. The group began meeting weekly in early 2013, and later that year achieved status as a 501(c)(3) organization under the name Renewable Taos, Inc.

RT produced its first Annual Report in November 2013. Since then, Annual Reports continue to communicate our organization's intentions, accomplishments and perseverance in our Vision and Mission. Our work is

further detailed in our weekly agendas, newsletters, social media, website, action alerts, technical reports, fact sheets, press releases and other information.

With few exceptions, RT has met weekly since 2013. A core group of 10-15 people have set and pursued an ever-evolving agenda on all aspects of emission-free electricity technology, economics, and policy. Currently, RT is supported by 100 members, and interacts with many partner organizations throughout New Mexico and the West.

When Renewable Taos was founded the primary constraints that prevented the addition of more solar arrays to the KCEC distribution grid was the utility's long-term agreement with Tri-State Generation & Transmission Association. Tri-State was firmly in the camp of coal-fired electricity generation.

Organization Achievements

2011-2012 Renewable Taos, Inc. founded. Began meeting in Taos with other like-minded individuals with concerns about climate change and how Taos can achieve a 100% renewable Taos. We consciously decided to include all energy consumed in Taos County -- electricity, home and office heating, business energy and transportation.

2013 Organized the Renewable Taos Lecture Series on renewable energy, climate change and sustainability. Initial interactions with Kit Carson Electric Cooperative, Inc. (KCEC). Co-sponsored events with Positive Energy, PPC Solar and SolLuna Solar. Conducted regional outreach to NM counties and other Rural Electric Cooperatives (RECs), federal and state officials, and the NM Congressional Delegation. Supported the first Community Solar Project in NM using solar photovoltaic (PV) panels.

2014 Completed sponsorship of the *Joint Resolution on Renewable Energy*, that was passed unanimously (one abstention) by the Town of Taos, Taos County, KCEC, Town of Red River, Village of Questa, and other municipalities. Renewable Taos became a non-profit corporation with 501c3 tax-exempt status from the IRS. The Renewable Taos Lecture Series continued at KTAOS that included a display of Chevy Volts and a Tesla Model S.

2015 RT participates in the Rocky Mountain Institute (RMI) eLab Accelerator to help the transition to renewable energy. KCEC released from the contract with Tri-State Generation and Transmission Association (TSGT) in November. Paying off the loan for the buy-out will take about five years. RT proposes the development of a Transition Plan with detailed steps to lo generation of 100% or more of all the energy used in the KCEC service area. Outreach continued with elected officials and religious leaders, and UNM-Taos.

2016 RT began a monthly newsletter. Continued research on utility-scale solar arrays and transmission lines around the KCEC service area. Began promotion of a regional market for renewable energy. Bob Bresnahan, an RT founding member, was elected to the Board of KCEC. RT worked with the NM Public Regulation Commission staff on the issue of tariffs on behind-the-meter, rooftop solar installations.

2017 RT established a relationship with the National Renewable Energy Laboratory (NREL) in partnership with KCED around the transition to renewable energy. RT contributed to the development and launching of the KCEC Solar Plan that includes 35 megawatts of solar arrays, sufficient for 100% of grid electricity on sunny days. An open house for the Lucky Corridor Transmission Line Project was held. Presentations were given at several symposia and conferences.

2018 RT held the first Taos Electric Vehicle Expo, an educational event that included several forms of e-transportation. KCEC installed additional solar arrays to power 600 households.

2019 RT held the second Taos Electric Vehicle Expo. In partnership with KCEC and the Town of Taos, the first three EV charging stations were installed in downtown Taos.

2020 A new lecture series, *Riding the Blue Marble Together* began in March. RT participated in *Earth Day on Taos Plaza* on April 22. Additional events planned include the 3rd Taos EV Expo in late September. Due to the pandemic, all in-person meetings were moved to on-line. KCEC began the 21MW Plus Storage projects.

2021 RT held the third EV Expo with 30 cars, 300 people and installed EV charging stations at the Taos Public Library. RT gathered details and served as a clearinghouse for Earth Day activities, including working with Taos County, Amigos Bravos and other organizations. The development of this Strategic Plan was completed.

Appendix D. Renewable Taos Core Values

A full transition to emission-free electricity is essential to sustaining our traditional way of life in Taos County and our surrounding region. Making the transition in concert with others around our planet is urgent and necessary to the health of our people and the land, air, water and life that surround us. In accord with these imperatives, we believe the following:

- Our climate crisis is solvable and urgent; emission-free electricity is a powerful solution for our climate crisis; and we need the fastest possible solutions to this crisis.
- A transition to 100 percent renewable electricity is achievable within a few years.
- Our economic future is dependent upon locally owned and managed emission-free electricity generation.
- Our nearby communities in New Mexico and Colorado face the same climate and energy issues we face, and will be our partners in confronting these issues together.
- Everyone in our communities at all levels of income is entitled to and should benefit from equal access to clean, emission-free electricity.
- Our precious water resources are threatened by dirty energy systems, and our waters will be protected if we use renewable energy.
- Our current energy demands rely on exploiting the lands, waters, and resources of others at great distances from where we live. We can serve our electricity needs in perpetuity with renewable resources primarily derived from local lands while using the grid as a backup.
- Building a emission-free electricity future strengthens our community bonds, our local economy, and our relationships with all neighbors in our region.
- The integrity, stability, and beauty of our region are treasures that can be protected by our actions.
 We have the responsibility of stewardship of our lands, waters, wildlife and domesticated animals for our descendants and ourselves.

Based on these values, we believe that it is a grave mistake to continue consuming electricity from fossil fuel sources, namely, coal, oil and gas, that threaten human health and security, and that damage all other living systems on our planet. Therefore, all of us must work together with all possible haste to create emission-free electricity systems for the people of our region.

Appendix E. Acronyms and Definitions

Acronyms

BTM	Behind the Meter
EDD	NM Economic Development Department
EMNRD	NM Energy, Minerals and Natural Resources Department
EV	Electric Vehicle
GND	Green New Deal
KCEC	Kit Carson Electric Cooperative, Inc.
NGO	Non-Governmental Organization
PNM	Public Service Company of New Mexico
REC	Rural Electric Cooperative
RETA	Renewable Energy Transmission Authority
RT	Renewable Taos, Inc.
SIC	NM State Investment Council
SIO	NM State Investment Office
SLO	NM State Land Office
TU	Taos United

Definitions and Descriptions

Energy: Energy includes gasoline, diesel, natural gas, propane and wood, as well as electricity. The ultimate goal must be to supply all energy from renewable, carbon free sources. The emphasis in this plan is on electricity because the technologies to supply electricity economically exist today, and can be developed in this decade. These include shifting transportation energy to electricity with electric vehicles, and shifting from propane and natural gas to heat pumps for heating and hot water. This will make it possible to supply more of the total energy renewably.

Electricity: Electricity is about 15% of all energy use in Taos County. KCEC's transition to renewable electricity is well under way. With the completion of the Solar Plan in 2021-22, approximately 30% of all electricity will be supplied by PV arrays within the coop. Getting much beyond that will require wind energy, storage, and the ability to export (sell) electricity to other utilities through existing and new transmission lines.

<u>Net-Zero Energy</u>: There are energy uses that can't be made completely renewable in the next decade. These include some transportation, industrial and agricultural uses. But Taos can produce an amount of renewable electricity that is greater than the energy it uses for all purposes, thus achieving net-zero Energy. This can be done by building large PV arrays within Taos County. It may also require the ability to export electricity to others. Residences and businesses can also be net-zero by producing enough renewable energy to cover all their needs.

Exporting Electricity: At present, the laws and contracts concerning the transmission of electricity from one utility to another do not allow KCEC to export (or sell) electricity to others. This is a major impediment to further development of renewables. New legislation and changes to regulations may allow this in the near future.