



**Renewable Taos Inc.  
2015 Annual Report  
-- November 2015 --**

**I. Introduction**

2015 was another productive year for Renewable Taos (RT). We both accomplished and learned a lot in the past year. The twins that sparked the formation of RT – climate change and the development of renewable energy – both continued on their course.

News about the climate is ominous. 2014 was the warmest year on record and 2015 will almost certainly take the record in a couple months. We are passing the halfway mark to the 2-degree C limit on global temperature increase agreed to by global leaders. Numerous extreme weather events pounded the world, again causing the most damage to those who can afford it least and have the least responsibility for the disruption. Climate change is no longer off in the future. It is now!

The good news is that renewable energy is developing more rapidly than anyone expected. Wind and solar energy are now competitive with fossil fuel energy at the utility scale, a decade or more ahead of predictions by experts just a few years ago. Battery technology that stores energy generated by wind and solar for later use is also marching ahead rapidly. Tesla will open a new factory in Nevada in 2017 more than doubling current world manufacturing capacity for lithium ion batteries.

Electric Vehicles (EVs) are developing rapidly and are common sights on the streets of California. The Tesla Model S won the highest approval rating for a car that Consumer Reports has ever awarded. The experts at Consumer Reports said they would have to revamp their rating formulas to accurately reflect the quality of the Model S. The late 2015 all-electrics boast a range around 100 miles, and both Tesla and Chevrolet have promised EVs with moderate prices and ranges of over 200 miles in 2017. It is time for car owners to plan the switchover from gasoline to electric.



While technical developments are very encouraging, the main obstacle to renewable energy is the web of law, regulation, business relationships, and private interests tied up in fossil fuels. It's no exaggeration to say that we are in the midst of the biggest technology revolution in human history, one that is vitally necessary for our own and our children's future. We're beginning to see more rapid change in this realm as well, including changes in our local energy environment that seemed impossible a few short years ago.

## **II. Highlights from 2015**

The pace of the advancement of renewable energy is picking up. Important changes have taken place in the last year, including some within our region. We're still clearing the path to a renewable energy economy, but we're making progress and a breakthrough may be only a couple of years away. Here are some highlights.

*1. Kit Carson Electric Cooperative (KCEC) released from Tri-State contract!* The most significant obstacle to expansion of renewable energy in North Central New Mexico is being removed. The Tri-State Generation and Transmission Association (TSGT) voted unanimously to release KCEC from its long-term contract at a Board meeting in November 2015.

KCEC has consistently opposed TSGT rate changes and has been winning allies among cooperatives in the TSGT system. Terms of the release include buying out TSGT equipment that serves our region. According to Luis Reyes paying off the loan for the buy-out will take around five years. After that KCEC and its members should be shielded from frequent, unpredictable price increases going into the future.

Rapidly building out the renewable energy infrastructure, primarily solar arrays and possibly some local wind farms, will keep energy prices stable and low. We are in a strong position to make the transition, and we need to build community support for renewable energy.

One very important detail that may be included in the buyout is ownership of the transmission line that runs from just northwest of Espanola to the Taos sub-



station. If KCEC can buy the transmission line at a reasonable price it will open the door to expanding solar energy for export to neighboring utilities.

RT has proposed the development of a Transition Plan, a detailed mapping of steps to local generation of 100% or more of all the energy used in the KCEC service area. We are confident that we make the transition within the next ten years, and there is a good possibility that we will be producing more energy than is consumed locally much sooner than that. It is an aggressive but practical goal.

Now is the time to urge your KCEC Board Member to get behind renewable energy.

*2. Delta-Montrose Electric Association (DMEA) wins an important victory for renewable energy this summer.* The Federal Energy Regulatory Commission (FERC) ruled that DMEA may purchase energy from local renewable energy developers without regard for contractual limits imposed by TSGT contracts.

FERC cited provisions in the 1978 Public Utility Regulatory Policies Act (PURPA) that give renewable energy facilities priority when prices are comparable. This ruling should allow rural electric and municipal utilities to rapidly adopt clean energy supplies with the effect that energy prices will be stabilized in the future. The DMEA ruling is being studied by utilities all over the country and should weaken the hold of fossil fuel electricity generators.

RT filed a supporting document with FERC prior to the ruling. We also arranged a meeting between Board members of DMEA and Board Members of KCEC here in Taos.

*3. Georgetown, Texas signed agreements to be 100% renewable by Jan. 2017.* Georgetown's municipal utility announced signing of wind and solar agreements that will provide all its energy. Officials noted that the renewable agreements will provide energy below current fossil fuel rates. The renewable rates will be stable for the next two decades. Officials noted that wind and solar are complementary energy sources and that both clean energy sources use miniscule amounts of water compared to the coal energy generators currently in use.



Several other cities announced that they either already are or would be 100% renewable in the near future, but the Georgetown municipal utility, with a couple noteworthy exceptions, is most similar to North Central NM. Georgetown recently exited from an all services contract with a transmission and generation association very similar to TSGT.

Texas energy planners have emphasized wind and renewable energy for more than a decade. They invested in transmission from renewable sites in the Texas Panhandle to population centers in central Texas. And, importantly, Texas has an open market in energy that allows excess wind and solar to be sold at auction.

4. On the state level, New Mexico is lagging behind the rest of the Southwest. The new state energy plan from the Martinez administration is insufficient. It pays more attention to nuclear energy than solar or wind. Some important breakthroughs have taken place including a transmission bridge to the Texas grid, groundwork for large wind farms in Northeastern NM, and large solar arrays around Roswell. We can expect more breakthroughs next year, but there is no political leadership supporting renewable energy in the land of the sun.

5. On the national stage President Obama has made it clear that he wants action against climate change. While the Clean Power Plan is tentative and unaggressive, if implemented it will strike a blow against fossil fuels and provide impetus for the growth of renewable energy. The leverage Obama gained in the 2009 bailout allowed us to make investments in renewable energy and gave a boost to Electric Vehicles (EVs).

6. On the world scale Pope Francis has become a powerful voice against climate change and for aggressive action. Francis calls for limiting warming to 1.5 degrees Centigrade, a really radical goal that would require transitioning to renewable energy before 2030. That is what is needed to avoid major catastrophes, so it shouldn't be dismissed as a possibility. In Pope Francis we have a powerful sitting world leader who is calling for real action.

The Paris Conference on climate change will convene later this month. It is clear that the need for action is urgent, and we can expect some aid in support of renewable energy. Massive efforts are underway all over the world, most notably in China. India is scaling up its renewable infrastructure. The Europeans are leading the way. The immediate future of clean renewable energy is bright.



### **III. Renewable Taos Activity in 2015**

RT has had a very active year with some notable successes. The report groups activities into several categories.

1. Rocky Mountain Institute (RMI), eLab Accelerator, and RT. In Fall 2014 RT applied to participate in RMI's 2015 eLab Accelerator Conference. The eLab is a part of RMI that works with utilities and communities to accelerate their transition to renewable energy.

Our application was accepted and we worked with RMI to put together a strong team that included Luis Reyes, CEO of KCEC; David Torres, Commander of the New Mexico National Guard and KCEC Board Member; Valerie Espinoza, Commissioner of the NM Public Regulation Commission (PRC); and Taos Town Council Member Andrew Gonzales. RT Board Member Jay Levine participated as a team member and RT member William Brown served as coordinator and liaison with RMI.

The team concluded that the principal obstacle to expansion of renewable energy in our area was the restrictive contract with TSGT that limited KCEC to 5% locally generated energy, essentially a cap on clean energy.

With the assistance of RMI and volunteer consultants, the team developed a constructive proposal for working around the cap – the creation of a local renewable energy utility that would aggressively develop solar resources and investigate wind and geo-thermal potential. The new utility would employ KCEC distribution and billing services, and would have a customer/service supplier relationship with KCEC.

The proposal from our team was one of the highlights of the 2015 Accelerator Conference, and we have been invited to report back on our progress in 2016. It was widely agreed that the model, if successfully implemented, would provide a path to renewable energy not just to North Central NM, but for the other 840 Rural Electric Coops and small municipal utilities bound to other fossil fuel oriented generation and transmission authorities through the country.



The Accelerator team entrusted RT with the development of a business plan for the renewable energy utility.

## 2. The Renewable Taos Project and Its Conclusions.

Following the Accelerator Conference, RT assembled a work team and began an evaluation of the practicality of the team's proposal. The project included a White Paper describing energy use in the KCEC Service Area, a Cost Study, a Legal Study, an analysis of the fit of local solar energy generation compared with the last three years of the KCEC Electricity use, an analysis of the Cost of Energy Storage, a Study of Legal Issues related to the formation of a new utility, an analysis of the Cost of doing Business as Usual, a Survey of Sites for Solar and Wind Energy installations, the development of a Business Model for the new utility, and development of a Feasibility Report.

- ◆ The work on local energy use determined that over \$100 million is spent on fossil fuel energy each year in the KCEC Service Area. The vast majority of that expense goes to pay remote providers of fossil fuel and services.
- ◆ The Cost of Energy Study concluded that utility scale solar arrays in the 20MW range are the cheapest and fastest way to transition to renewable energy. The Cost Study also concluded that there are potential wind resources in the Service Area. Finally, the Study concluded that development of geo-thermal resources in our area was potentially very valuable but required long development lead-times and risk capital.
- ◆ The Cost of Energy Study did not conclude that there would be immediate savings from adoption of renewable energy. The Business as Usual Study did not get off the ground, so we were unable to confirm our expectation that savings would begin to pile up within five to ten years.
- ◆ The Analysis of Load and Generation Profiles concluded that there is a limit to development of solar resources beyond which energy is produced that cannot be used locally. The rough figure is 32 MW nameplate solar generation. At that point, excess energy must either be sold, stored, or simply dumped.
- ◆ The Generation Analysis determined that it doesn't make financial sense to exceed the 32 MW limit by small amounts. It does make financial sense to develop significantly larger supplies of solar energy and provide it to areas



whose peak demand occurs during peak generation periods.

- ◆ The Storage Analysis determined that current costs of storage are too high for it to be used except as a way to avoid peak charges or as a method of smoothing irregularities in the distribution grid. Cost of storage is coming down rapidly, so we expect it to be an important part of local generation in the near future.

Taken together this RT Project provided us with important insights into the opportunities and problems of transitioning to renewable energy. It's especially helpful to dig into some of the detail surrounding our best guesses.

Go to the following RMI sites to see examples of this work –

- ◆ RT Project Page at RMI - [http://www.rmi.org/elab\\_accelerator\\_2015\\_renewable\\_taos\\_project](http://www.rmi.org/elab_accelerator_2015_renewable_taos_project)
- ◆ RMI Report of RT Project - [http://blog.rmi.org/blog\\_2015\\_11\\_20\\_an\\_innovative\\_business\\_model\\_makes\\_solar\\_accessible\\_to\\_all](http://blog.rmi.org/blog_2015_11_20_an_innovative_business_model_makes_solar_accessible_to_all)

While the release KCEC secured from its restrictive ties to TSGT make the renewable energy utility unnecessary, the Renewable Taos Project successfully expanded our knowledge of what needs to be done. We also concluded that it can be packaged in a way that is useful to other cooperatives and small municipals. That work will continue.

4. Community Solar Legislative and Regulatory Work. With the help of State Representative Bobby Gonzales, State Senator Carlos Cisneros, and State Senator Peter Wirth RT introduced a law that would enable expansion of community solar projects throughout NM. The legislation was tabled in both the House and Senate Committees where it was presented in the 2015 session. PNM and El Paso Electric went all out to defeat our bill.

We met with representatives of environmental groups, state elected officials, and many others in the process of getting this bill before House and Senate committees. We did a lot of face to face lobbying during the legislative session. Although the legislation failed, we gained valuable experience and made many



new allies. We decided to sit out the short 2016 session.

One of our learnings from the Community Solar Bill is that staffers within the Public Regulation Commission are either dismissive or hostile to renewable energy. We decided to take them on by asking our Commissioner Valerie Espinoza to allow us to speak before the Commission. We will do that either late this year or early next. We have determined that, contrary to statements for PRC staffers, utilities are free to develop community solar installations within their service areas. We hope to obtain confirmation of that.

We're pretty proud of this effort, and we can expect concrete results in the future. Jay Levine and John Gusdorf played the central roles in this work.

5. Education and the Panel of Local Religious Leaders. Late last year we reached out to local ministers and church officials. We wanted to encourage them to confront the moral and ethical issues involved in climate change with the expectation that they would also get behind efforts to transition to clean renewable energy.

Father Mike Olsen from St. James Episcopal Church, Chuck Doughty of the Taos Unitarian Congregation, Punya Upadhyaya from the Hanuman Temple, Deacon Jerry Quintana of Our Lady of Guadalupe, and Pamela Parker of the Taos Buddhist community spoke on the panel. Mirabai Starr, a Taos author, was the moderator and Bill Brown from RT provided a short slide show on climate change. Rabbi Paul Citrin from the Taos Jewish Center sent a message of support that was read at the event.

The discussion was titled "Rising to the Call – Faith Responses to the Climate Crisis." Around 100 people attended the stimulating event held at St. James Church. We reached a group of people who are very receptive to the need for renewable energy. The core group from the panel are continuing climate activity and sponsored a vigil on the eve of Pope Francis' address to Congress.

We also worked with UNM Taos giving presentations and setting up tables at events with materials on Renewable Energy. We gave a presentation at Cafe Scientifique and had a table at the College Career Expo.





We continued to maintain an RT website and Facebook page. You can visit them at the following links –

- ◆ RT Website – <http://www.renewabletaos.org>
- ◆ Facebook Page – <https://www.facebook.com/RenewableTaos/>

We need the people of North Central NM to understand and support our goals for renewable energy. This summer we launched a Messaging Campaign to reach our diverse population by radio, newspaper and public meetings. Our first radio spots directed at rural residents went on the air this fall. This is another activity that requires financial support.

6. Local Elected Officials and Community Leader Reach-Out. We followed up on the Joint Resolution on Renewable Energy by working with Andrew Gonzalez and Fred Peralta from the Taos Town Council. The focus of the work was formation of an official committee of the signatory of the Joint Powers Agreement. A Joint Powers Agreement is in preparation.

A regional planning committee for Utilities has been formed and RT has been asked to participate.

RT is also expected to participate in a Transition Planning Committee at the invitation of KCEC. This committee will focus on introduction of renewable energy and the technical and financial issues involved in the transition.

We regularly meet with public officials from around the Enchanted Circle. We also meet with leaders of major energy consumers like the Taos Ski Valley to encourage them to expand their use of renewable energy.

7. Electric Energy Industry Reach-Out, Intervention and Education. Members of RT regularly attend the monthly Board Meetings of KCEC. We also attend meetings of the NM Public Regulation Commission (NMPRC) and plan to make presentations there in the coming months. We attend meetings like the Clean Energy Transmission Summit and a presentation of the State of NM's new energy plan.



We attended the Western Colorado Congress 2015 Annual Conference in Grand Mesa last September and gave a report on our work with RMI. We attended the Sustainable Green Building Conference in Taos and gave a brief report which was well received.

Several RT members are also members of the Sierra Club. We worked with them on Community Solar legislation and provided some input to their planning conference for the 2016 session. We want to deepen these relationships.

We have begun to network with the NM Rural Electric Cooperative Association and the National Rural Electric Cooperative Association. We think our progress and that of other Coops like DMEA can have a big effect on the transition to renewable energy in Rural America.

We also work with the New Mexico Energy Efficiency Working Group.

We participated in a local working committee that advised KCEC on rooftop solar billing (behind the meter).

We worked with a committee from Angel Fire focused on mitigation of fire danger. Trees in the surrounding forest must be thinned to reduce fire hazard, and the resulting bio-mass may be burned to generate electricity. This is an ongoing project.

We followed up on our RT Project research into wind energy and transmission by meeting several times with Lynn Green, CEO/Manager of the Lucky Corridor LLC

## 8. Finances, Fund-Raising and Volunteers.

We take this opportunity to thank our major financial contributors:

- ⤴ Paradise Power Company Inc.,
- ⤴ Las Ebanistas, Inc. (Solluna Solar),
- ⤴ Arjuna Capital, and
- ⤴ the Bresnahan Family Fund.



Renewable Taos members also have provided significant, ongoing out-of-pocket financial support.

Renewable Taos applied for grants from the McCune Foundation, The Frost Foundation and the Taos Community Foundation. Although we were not selected, it was our first effort at grant writing, and our first contact with these funding organizations.

William Brown of Sage West Consultants has provided thousands of dollar's worth of research, reports and consultation. Megan O'Reilly of Arc Research and Analysis has also given many pro bono hours of legal research and exploration. Board members, Bob Bresnahan and John Gusdorf, have provided pro bono reports and expertise on technical and business issues. Board member Jay Levine served on the RMI Accelerator team and coordinated legislative activities. Jay also manages our website and Facebook page.

Gary Ferguson provided valuable research and assistance in energy modeling. New members Teddy Malley and Chuck Doughty provided valuable service in reaching out to the community. Diane Gledhill organized finances and our Messaging efforts. Tim and Louise Herfel have linked RT to important work being done by the Angel Fire Sustainability Committee. Many others have contributed to renewable energy locally including some who do not work through RT.

We have been meeting weekly for four years, and we keep plugging away. There is a lot to do keep North Central NM in the forefront of the transition to renewable energy.

#### **IV. Activities for 2016**

We plan to follow up on all the activities outlined above in 2016 with particular emphasis on the following areas –

- ⤴ Packaging the work products from the RT Project and making them available to other Cooperatives and Municipal utilities.
- ⤴ Working on transition planning with regional and local groups.



- ⤴ Educating about the opportunity to expand renewable energy and encouraging community support for the effort.
- ⤴ Expanding our work in the transportation sector, the primary source of greenhouse gas emissions in N.C. NM.
- ⤴ Securing financial support for our activities.

For those of you who have made it this far, thanks for your attention. Please consider ways you can help with our work.

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