



City of Boulder – Xcel Energy Partnership

Renewable Energy Working Group - Workshop

Date January 29, 2022

Location Zoom Virtual Workshop

Participants Renewable Energy Working Group

- Pat Hillmeyer
- Julie Zahniser
- George Craft
- Wayne Seltzer
- Stephanie Hsiung
- Peter Lilienthal
- Jack Vultaggio
- Ramesh Bhatt

Project Oversight Team

- Iffie Jennings, Xcel Energy
- Kerry Klemm, Xcel Energy (renewable connect discussion)
- Carolyn Elam, City of Boulder
- Matt Lehrman, Department of Climate Initiatives

Institute for the Built Environment

- Josie Plaut, Facilitator
- Tom Hootman, Consultant
- Susan Hsin, Recorder

Workshop Objectives

Working groups will collaborate to create recommendations for the executive leadership and project oversight teams.

Workshop Summary

Topic	Notes
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<p>Welcome + Introductory Remarks</p>	<p><i>Carolyn and Josie welcomed the group and provided a broad overview of where this group is headed and the objectives of today's workshop.</i></p> <p>Introductions of Working Group Members</p> <ul style="list-style-type: none"> • Pat Hillmeyer – representing single family homeowners that are interested in moving towards renewable energy on their personal funds. • Julie Zahniser – representing homeowners and hopes to be a liaison to the broader Boulder community. • Wayne Seltzer – represent homeowners that are interested investing in renewable energy to combat climate crisis; has been contacted since these meetings have started about the project's progress. • Jack Vultaggio – representing industrial campuses and customers, as well as homeowners in Boulder County. • George Craft – representing long term homeowners in Boulder. • Ramesh Bhatt – representing environmental groups and homeowners striving to be 100% renewable. • Peter Lilienthal – brings a valuable technical understanding of the energy industry. • Stephanie Hsiung – representing homeowners and renters in Boulder. • Iffie Jennings – Xcel representative on the project oversight team. • Carolyn Elam – City of Boulder representative on the project oversight team • Matt Lehrman – representing City Department of Climate Initiatives. • Tom Hootman – energy electrification sub-consultant to IBE that will provide back-up for IBE that will document complex subject matter • Emily Sandoval – City of Boulder communications representative.
<p>Webinar Recap + Feedback</p>	<p><i>After brief introductions, Josie asked the group to reflect on what they heard and what they are excited to work on based on the webinars.</i></p> <ul style="list-style-type: none"> • George – Xcel has a major investment in this project, and it seems like they are primarily the ones driving this effort. Hopes see the City of Boulder have a stronger voice in the overall plan. If we are talking about emissions in the City of Boulder, then the City must step up. • Pat – Expressed for Xcel's plans for electrification, but is concerned about the lack of employment to implement the technology. We know what the investment is from Xcel, but the City needs to play a role in reducing the soft cost of putting more

solar panels on rooftops. Hopes to see this become more of an accessible feature for Boulder residents.

- Peter – Interested in hearing the perspective of active solar panel installers in the area. It would be valuable to have an installer representative on the advisory panel. Would like some more clarification on what these soft costs are and what percentage is city-related.
 - Josie – Suggested that one action item is to host focus groups with installers to understand where they see barriers, opportunities, and gaps.
- Ramesh – There have been many obstacles and bad years that have prevented people from proceeding with solar panels installation. What has been done so far to move the partnership towards their promise to get 100% renewable energy?
- George – Expressed concern about not being informed on the progress that has been made in the past 12-14 months. Spoke on his personal experience with the installer, which was a very delayed process. He missed opportunity to produce energy because he was waiting on the installer.
- Julie – One major solar farm was destroyed in the Marshall fires, which proves that there is a need for distributed energy. Also shares a frustration of not know what is going on behind the scenes in the partnership. How many processes are happening at the same time? What is the city doing in relation to what the working groups and advisory panel is doing? Interested in the criteria of which they are working with. Interested in new generation, new clean energy projects, new programs, and community engagement, rather than buying more renewable energy credits (RECs). The community should feel informed, encouraged, and engaged, and be able to conveniently see the progress that has been made on a dashboard/website.
- Stephanie Hsiung – In order to empower homeowners to get solar on their rooftops, the costs of installation must be lowered. It was incredibly expensive to install solar and the payback period is over a decade, which many residents of Boulder County cannot afford under financial stresses.
- Wayne – Is not convinced that there is currently a plan in place and progress being made. Feeling a sense of greenwashing, and does not think this is moving the dial. We can't jump to solutions and think this is a simple problem to solve. What can be done at utility and local scales in order to improve efficiency and bring positive systemic change? What can Boulder bring to the table to solve the problem? What resources does Boulder that we could leverage in a solution? We must recognize that electricity

distribution has multiple players, and that the market plays a huge role in the success of this partnership. Expressed interest to explore other solutions instead of purchasing RECs.

- George – Unclear what “100% renewable” energy would look like and entail. Rather, the target should be focused on reducing emissions before we can jump to making 100% renewable energy a reality.
- Jack – Agreed that the ultimate goal should be to reduce emissions. Expressed excitement to see the new programs being launched recently. A decision must be made as a group to decide whether or not to proceed in RECs, otherwise it would slow down the progress towards a solution. We must think about the solution holistically because Boulder is not independent from the grid. A greener Boulder really means a greener Colorado.
- Peter – Was uninformed about all the programs currently in discussion at Xcel and feels strongly that these need to be made more transparent to the broader community. Which approach is going to provide the city with more resilience? Even though the value of RECs is not zero, but it might not be the best option. Is it really helping to develop new renewables, and to what extent? Education on RECs can improve so that everyone can be equally informed.

Josie helped the group transition out of this conversation to hear the thoughts of Iffie, Carolyn, and Matt (Project Oversight Team)

- Matt – Along with providing more information with RECs, he thinks it is also crucial for the community to understand what resilience means and how it can be achieved.

**Criteria
Evaluation
Worksheet**

For the next portion of the workshop, the group accessed a shared document on Sharepoint titled “Evaluation Worksheet.” Documents are accessible through the Xcel Energy Partnership Community Advisory Panel Sharepoint.

Activity Summary

This objective of this activity is two fold: 1) evaluate the strategic value of the Renewable Connect Program and 2) develop skills and thinking related to criteria and prioritization.

After an overview of the evaluation worksheet and criteria, much of the conversation was centered on understanding RECs and how RECs relate to the Renewable Connect Program.

Primary capture of this activity can be accessed on the shared document in the Panel’s sharepoint. Josie, Tom and Carolyn were the primary notetakers for this portion of the workshop.

The essentialized version of the conversation clarified that those who subscribe to the program pay a premium for renewable energy. Participation in the program does not mean that one's particular home is powered by renewable energy directly. Rather, the premiums that are paid do two things: 1) retire RECs for that energy and 2) place the premiums collected into a regulated fund that must be used to contribute to renewable energy production and programs anywhere in Xcel's grid. A future program, currently under development, may have a more specific and direct connection between the those enrolled in the program and the development of new renewable assets in that area/community. On some level, RECs play a role in helping to account for and track who is taking credit for renewable energy production and helping assure that renewable production is tracked and accounted for.

A 10 minute break was issued after this conversation.

Josie regrouped the working group and tried to capture the conversation with a simple diagram of the relationship between the grid mix, renewable connect, funds generated, and beneficial uses.

- Kerry – Clarified that Renewable Connect 1.0 is a 50 MW (megawatt) resource specifically for this program. It was quickly sold out when it opened and has run a waitlist since then. Xcel is proposing Renewable Connect 2.0 to add on to those resources and expand availability up to 300 MW subject to the customer contracted commitments. The revenues from this program go directly to pay for the resource costs and maintenance, and a small amount towards administration fees over the life of the program. Renewable Connect 2.0 is filed for Public Utilities Commission approval as part of the 2022-25 Renewable Energy Plan. That regulatory proceeding has started and Xcel is hopeful that it will be resolved mid 2022.
- Matt – How are going to fund new renewable projects? We must quantify what is the reduction of emissions associated with that.
- Julie – Expressed her discomfort with Renewable Connect still being in proceedings and not operations.
- Stephanie – It sounds like we are putting large value on driving more renewable generation and rather than putting our efforts towards existing renewables. Suggested 'Innovation' to be another evaluation criteria that would assess how well a solution can capitalize on opportunities with new technologies and processes. Another possible evaluation criteria is related to innovation rather than just falling back to systems that have been in place for a long time.

- Josie – Added to the evaluation criteria worksheet questions around how effective have the Renewable Connect programs been in their impacts and what results can we point to in order to measure their success.
- George – Expressed interest in exploring new, innovative strategies rather than only discussing Renewable Connect 2.0.
- Josie & Carolyn – Clarified that Renewable Connect 2.0 is a starting point for this workshop and working group to become more familiar with the evaluation criteria and process. It is not the only strategy we will be exploring or necessarily one that the partnership is explicitly advocating for.
- Julie – Are we including the social cost of carbon in terms of the money that is going to be spent? This could be labeled as a ‘cost effectiveness’ criteria, which would articulate the net impact of carbon reduction for every dollar spent towards renewables.
 - Individuals from the program oversight team confirmed that the social cost of carbon is being included in their calculations.

Josie shifted the group’s focus to practice using the evaluation criteria to assess how the partnership can move forward.

- Peter – Noticed that these criteria are not independent of each other, and there may even be instances of double counting. Might not be the worst thing since there is not any quantitative measure put in place at the moment.
- Wayne Seltzer – What is the source of these strategic values? What actions are we going to take after we are done filling out this worksheet? Have any of these strategies been shared with the City Council yet? What has been their response?
 - Josie’s response – These are goals that have been established by the city and community based on what has consistently been in the stream of discussion so far. The group is encouraged to help develop and refine these criteria and goals. The intention is that the working group will compile a list of recommendations for high strategic value initiatives that will be shared with the advisory panel and project oversight team. Through an iterative process these recommendations will become integrated into the program oversight team work plan.
 - Carolyn’s response – These are points that the City has flagged as valuable topics to discuss based on what has already been heard in the community. At the moment, they have not been explicitly discussed with the City Council.

- Julie– Expressed excitement on what the other ideas are, besides Renewable Connect, that are up for discussion.
- Jack– Weighting the solutions should be discussed in a vacuum and used universally across the criteria. Ranking the criteria should come before weighting.
 - Josie – Clarified the difference between the weighting (importance) and score (strategic value), which will be multiplied to create a combined total score. The plan is for the working group to evaluate different strategies against each other to create a prioritized list.

Josie shifted group’s focus to the feasibility criteria portion of the template.

- Wayne – If we were to decide to move forward with the whole community Connect program, which would essentially mean that the City of Boulder was buying into the whole program on behalf of the residents, would residents see a change in cost for their utility bill? The language in the strategy description is confusing.

Kerry’s response – It would be a wholesale that is billed to the community. It will not show up individual bills because it is a municipal participation.

Carolyn’s response – we are looking at ideas where we might source funding for a program like this through existing city funds (e.g., the climate fund). Anticipated cost, should the program become available and we decide to move forward, would be about \$12 million per year. This is one path to say that we have met our 100% renewable goal, but it is not our only option and no decisions have been made.

Josie wrapped up this discussion by leaving the group to think further about any questions they might have to eliminate the vagueness of this strategy before the group switches gears to another strategy after lunch.

Strategies for Local Energy Generation

Questions from the group upon return from lunch break.

- Ramesh - What are the costs associated with Renewable Connect 1.0? Would this new system follow the same model?

Carolyn – It depends on the year.

- Peter – Do we care about the impact on the system as a whole or does this only concern Boulder?

The concept is that we can strive for a system level change that could be replicable to other customers and municipalities.

Carolyn introduced the five strategies that the partnership has outlined to close the gap between what the Xcel will produce on it's own and getting to 100%.

1. Boulder's ability to generate energy from hydroelectric units.

- Ramesh – what proportion of the city's electric use comes from these hydroelectric sources?
 - Matt – relatively small at the moment, 40,000 MWh.
- Peter – do we have a cost estimate?
 - Carolyn – This has not been established because the plants are currently undergoing rehab to improve output

2. Future of Valmont - Opportunities to leverage the Valmont site, which could potentially contribute to storage or continue to drive collective ability to generate energy.

- Julie – Who owns this site?
 - Carolyn – The site is owned by Xcel currently, but the view area is owned by the City. All the land and lakes around the area are also owned by Xcel.

3. Innovations - the need to identify any future models that we can work to increase solar storage and enhance local resilience.

- Peter – Have facilities already been identified for specific uses? Is the priority list available to the public/panel at this point?

4. Zero Emissions communities and firm dispatchable power

5. Partnership – enabled local generation (residential, hydro, storage)

Breakout Group Discussions:

The group was divided into two breakout rooms and asked to work on the three ideas presented for local generation and evaluate them for strategic value and evaluation criteria. Additional notes were taken on the evaluation criteria worksheets saved on Sharepoint.

Starter Questions

- Which gap model(s) does this address – 100% renewables annually, closing the emissions gap, 24/7 renewables?
- In what way(s) does this or might this lead to a state-wide or local reduction in emissions?

- What aspects of the community's goals and strategic values would this program support? Which would it not? Can any of the identified deficiencies be address? If so, how?

ROOM 1: Julie, Peter, Ramesh, Iffie, Matt, Josie, Susan

1. Solar on Mixed Tennant/Resident Properties

- Endorsed the concept, don't see many/any downsides
- Hard to evaluate these strategies without exact numbers to look at.
- We don't have precise information about when we can anticipate having access to renewables throughout the week/month/year, but we can work towards getting it. We should apply a timestamp for the RECs being purchased, for example.
- Increases local energy, potential for equity in various neighborhoods and HOAs, and many resilience benefits with the assumption that it would fit into the larger grid.
- The more distributed the energy generation, the more reliable energy will be.
- Sounds like there is potential to make this highly scalable.
- Will this offset power that Xcel is creating elsewhere? How do we assure that these additions of solar are actually beneficial overall, not just contributing to Xcel reaching their goals more easily?
- We need to be talking about this in terms of local resources instead of local generation. It is more important for storage to be local than the generation because there is great impact for resilience. Curious to know how much of the storage will be dedicated to local. The demand is going to be non-linear and not always predictable.
- Josie – Have there been calculations done for the volume of storage needed and how much that is going to cost? What does it mean to achieve 24/7 renewables?
- Matt – Much more expensive to talk about making this effort in isolation, so we must consider how this is connected to the larger scale. Cannot really answer this question at the moment.

2. Next generation Boulder Hydro Model

- We do not have enough information right now, and this is not where the focus of renewables should be.

3. Expanding Local Storage

- Interest from the group to learn more about the storage options. We need to replace the storage with renewables, not fossils.

ROOM 2: Stephanie, Wayne, Jack, George, Carolyn, Tom

1. Solar on Mixed Tenant/Resident Properties

- Important policy to open the market for more distributed energy.
- Some concern about the future variability in net metering policy and rates and how that would impact the long-term economics of distributed solar.
- Xcel’s new net metering policy has two pathways including end of year payout for excess generation and solar banking of excess generation.
- Next steps need to include how to finance / incentivize rooftop solar for tenants in multifamily buildings.

2. Next Generation Boulder Hydro Model

- Hydro generation is a by-product of the potable water system supply for Boulder. Therefore, the generation is essentially fixed related to the water supply.
- There may be potential for nano-hydro generation within the existing system.
- There may be potential for hydro to generate hydrogen for energy storage.

3. Expanding Local Storage

- Time-of-use electricity rates will make storage more economically attractive.

Time-of-use rates are the default for Xcel’s new smart meter roll out. Customers can still opt out.

Reports from Breakout Room Discussions

Room 2 Report Back

- Discussed the mixed-tenant/residential property potential
- The rule-making needs to happen, what comes next needs to be identified
- On-going discussion about the viability of the future of net-metering, and how that may or may not factor into what we are going to invest in.
- Opportunities to use hydro-electricity to benefit the community.

Room 1 Report

- The group was in consensus for the mixed-tenant/residential net metering because of its net positive impact; will be a recommendation that we will move forward with.
- Discussed how we can define 24/7 renewables.

Closing Remarks, Next

Josie clarified that this was an initial step to gather thoughts, start hearing more about how this group is thinking about criteria and what is

Steps & Action Items

satisfactory for meeting the partnership’s goals and objectives. It might not stay in the format for future sessions, will be updating our tools and approach to be more effective in the future.

Next Steps

- Workshop notes will be provided and internal team will review strategy
- Advisory Panel meeting February 16th – share working group progress and discuss communications with public
- Building Electrification Working Group – February 12th
- Open to further ideation
- Members are free to communicate their ideas as they come

Closing Remarks

- Carolyn acknowledged the value in the conversation today, even though much of the discussion was focused on RECs. Though unexpected, it identified weaknesses of the strategy. We do not want people to be confused moving forward. We actually got further than we might have felt, even if we didn’t get through all the logistics.

Josie thanked everyone for their time and dedication to take a deeper dive into these difficult and complex topics.

Resources

Advisory Panel Website: <https://boulder.colorado.gov/xcel-energy-partnership-advisory-panel>