

# BOULDER XCEL PARTNERSHIP ADVISORY PANEL MEETING AGENDA

**May 9, 5:30-7:30pm, online meeting**

## **Agenda**

- Welcome (5m)
- Updates & Dialogue with Xcel Executives (30m)
- Building Electrification Recommendations (25m)
- 100% Renewable Recommendations (25m)
- Next Quarter Look Ahead (15m)
- Advisory Panel Terms (5m)
- Wrap up (5m)



# BUILDING ELECTRIFICATION WORKING GROUP RECOMMENDATIONS

## 1. Develop Multifaceted Commercial Electrification Strategy

### Short Description (how the concept works and target audiences)

Advance a comprehensive program to incentivize, support, and require commercial building energy efficiency and electrification, focused on interventions at time of replacement for mechanical equipment that is currently fueled by gas including boilers, furnaces, and appliances.

### Key Shift (current state to future state)

Move commercial building stock, including multifamily buildings, away from natural gas space heating, water heating, and cooking to all 100% electric sources for space heating, water heating, and cooking.

### Key Metrics (how to measure success)

- 5% reduction in commercial fossil gas 2025
- 30-35% reduction in commercial fossil gas by 2030

### Biggest challenges and how to address

Barrier	How to address
<b>Capital Cost &amp; Loss of Operating Revenue</b> (disruption to lost operations)	Develop commercial rebates program, provide free assessments and electrification plans including cost/paybacks.

<b>Increased Utility Cost</b> (all electric is currently more expensive/time of use charges)	Lock in more affordable rates; bundle with solar to help fix rates; better forecast future gas and electricity rates. Consider how time of use pricing might be part of the solution.
<b>Complexity &amp; Myths around Technology Solutions</b>	Educate designers/engineers and contractor base; provide technical assistance, create peer-to-peer learning opportunities, identify early adopters / champions
<b>Emergency / urgent decision-making</b>	Regulations, proactive turnkey solutions; messaging get ahead of the curve, requirements on the way
<b>Split Incentives</b>	Understand leverage points and strategies that address split incentives. Begin with a commercial forum that includes advisory panel members and a residential customer journey mapping.
<b>Gas Industry Resistance including lobbying and advertising (i.e., AGA)</b>	Acknowledge that there is a conflict of interest for Xcel in decreasing and eventually eliminating natural gas sales. Clarify how Xcel is managing this conflict of interest. Identify internal champions in Xcel and help support and strengthen the conversation about switching from fossil gas toward 100% renewable sources. Engage in education and marketing efforts to counter industry lobbying through a joint effort between Xcel Energy & City staff.

## Initial Steps / Activities

- Building Energy Reporting, Performance and Data Collection:** Evolving Building Performance Ordinance (BPO) 2.0, which is the next iteration of Boulders building performance ordinance. Understand energy use and identify key opportunities based on what the data reveals. Out of the ~4,000 C&I buildings in Boulder, which ones are most worth targeting (owner-occupied, gas HVAC, high fossil use, etc.)
- Regulate Change:** Set more stringent building codes and performance standards, with a focus on low-to-no emissions (CO2 and other pollutants) requirements.
- Provide More Technical Assistance Programs:** Upgrade existing Xcel Energy commercial energy audit programs to provide proactive assessment, engineering and technical solutions to building owners with in-depth energy analysis, technology options, financing, and capital planning purposes. Consider how the Partnership can make programs proactive, possible costs share on analysis, employ preapproved service providers.

- **Develop Commercial Electrification Rebates & Incentives:** Explore pathways to develop commercial rebates and incentives through a 2023 pilot program, cost impact studies, a status programs (labeling), and forums to dispel myths & misconceptions. Explore how C-PACE might be more appealing to building owners.
- **Target Multifamily Renovations:** Look at proactive interventions to provide analysis to target properties that are candidates for upcoming rehabs. Get into capital improvement plans and identify needed incentives.
- **Explore Private Sector Turnkey Solutions:** Catalyze proactive turnkey commercial real estate solutions including opportunity analysis, financing, design, installation, etc.
- **Explore Split Incentives:** Take a deep dive to understand leverage points and strategies that address split incentives (i.e., where tenants pay for utilities and owners pay for upgrades) for multifamily and commercial leased spaces. Begin with a commercial forum that includes advisory panel members and a residential customer journey mapping.
- **Prioritize and track commercial electrification progress:** City staff develop a clear roadmap that prioritizes and tracks progress on the 4,000 commercial and industrial buildings.

## Alternatives / Longer-Term Ideas

- **RFP:** for provider similar to Denver / Ithaca (loan loss guarantee, buy down private cost of capital, need financing and address supply chain issues).
- **Explore BlocPower model:** Identify turnkey solutions that break down financial barriers to electrification, taking the challenging decisions out of the equation, and enabling easier adoption.

## Additional Notes

- Review RMI studies

## 2. Expand Residential Electrification Programs

### Short Description (how the concept works and target audiences)

Grow awareness and motivation for owners, HVAC contractors, and retailers to purchase and install electric appliances and heat pumps proactively and/or at time of replacement.

### Key Shift (current state to future state)

Move building residential building stock away from natural gas space heating, water heating, cooking to all 100% electric appliances.

### Key Metrics (how to measure success)

- 15% reduction in residential fossil gas by 2025
- 85% reduction in residential fossil gas by 2030

### Biggest challenges and how to address

Barrier	How to address
<b>Upfront Cost</b>	Rebates and financing (in place); city backed volume purchases; create rebates to support panel upgrades; tariff on-bill financing program
<b>Complexity of electrifying residences</b>	Explore ways to simplify the process through turnkey solutions and providers to reduce complexity for homeowners and property owners.
<b>Misconceptions / Myths</b>	Create education forums, peer to peer learning, champions
<b>Emergency / urgent decisions</b>	Regulation, availability of appliances, contractor awareness, availability of equipment, financing, insurance
<b>Lack awareness</b>	Targeted education collateral, events focused on health risks of gas, climate benefits, state of the technology, and availability of incentives and financing.
<b>Split Incentives</b>	Update SmartRegs; provide other incentives to landlords.

## Initial Steps / Activities

- **Target A/C Replacements:** Incentivize A/C replacements to be cold climate (air source or ground source) heat pumps. Can we identify where there are end of life A/C units and proactively target neighborhoods or homes? Inventory past building permits for A/C replacements or new construction that are 12-15 years old and target them for electrification education. Loosen current EnergySmart eligibility requirements to incentivize any heat pumps over A/C.
- **Assess Current Programs & Financing:** Assess effectiveness of incentive and financing programs including low-interest on-bill financing (e.g., RENU and how we tie into that?).
- **Grow homeowner and installer education programs** (events, mailers, etc.)
  - Build awareness for personal health and climate benefits.
  - Dispel myths and misconceptions about heat pumps and gas stoves.
  - Provide information about costs, payback, rebates, incentives and financing options.
- **Explore City-Backed Volume Purchases:** Explore city-backed volume purchases of electric appliances including heat pumps, water heaters, and range ovens to bring down costs.
- **Add Electrification to Low-Income Home Weatherization Programs:** Explore expanding low-income residential weatherization programs to include electrification.
- **Support Contractor Adoption:** Continue contractor education programs & provide list of approved installers.
- **Regulate Changes:** Set more stringent building codes and performance standards, with a focus on low-to-no emissions (CO<sub>2</sub> and other pollutants). Require building codes (reference Denver's codes that sunset dates for gas appliances), set performance standards, phase out gas options for retrofits.
- **Change Rate Structure:** Explore changing electrical rate structure to better support electrification such as shifting to focus more charges on use and moving away from flat service/facility fees to better capture benefits of reducing gas use.

## Alternatives / Additional Ideas

- Develop a turnkey net zero and electrification package that includes home energy efficiency, electrification, solar, and financing
- Encourage contractors to package home electrification with solar installations
- Explore branding and messaging and education around electrification – (e.g., rethinking your utility bill), understanding the shift from gas to electric, increasing awareness about the health reasons for electrification.

### 3. Address Service Upgrades for Electrification

**Short Description** (how the concept works and target audiences)

Explore regulatory and/or legislative solutions to support service upgrades (e.g., transformers, panels) associated with building and transportation electrification.

**Key Shift** (current state to future state)

Instead of placing the financial burden for transformer upgrades related to building and transportation electrification on individuals and businesses, make legislative and/or regulatory changes that allows for such upgrades to be part of the rate base or paid for through funds generated from other funding sources including Xcel’s shareholder investment. Seek alternatives, such as non-wires and on-site generation and storage, to mitigate the need for infrastructure upgrades.

**Key Metrics** (how to measure success)

New regulation that allows transformer and other infrastructure upgrades related to building and transportation electrification to be financed through funding sources other than the “next person on.” The grid infrastructure cost of electrification is shared equitably and not disproportionately shouldered by late movers.

**Biggest challenges and how to address**

Barrier	How to address
Regulation	Develop the requisite understanding and political will to change the legislation.
Cost	Through distribution system planning and pilots, inform electrification planning and investment strategies.
Oversized Grid Capacity	Enhance incentives or solutions for non-wires alternatives and behind-the-meter storage/load management.

**Initial Steps / Activities**

- Analyze the expected service capacity constraints that would be realized based on the state’s GHG roadmap
- Develop business case for a rate-based solution

- Develop and implement legislative and/or regulatory strategy
- Identify opportunities for grid capacity optimization, including technology solutions that allow us to optimize existing capacity.





# RENEWABLE ENERGY WORKING GROUP RECOMMENDATIONS

## Values and Goals

The city and Xcel should follow the criteria identified below, developed by the Renewable Energy Working Group, when developing initiatives, assuming projects and measuring success toward renewable energy activities.

**Urgency & Action:** Move quickly to identify and act on policies, programs, and strategies to meet Boulder's emissions reduction and renewable energy goals.

**Authentically Additive:** Projects resulting in the addition new resources beyond what Xcel would otherwise do on their own, either locally or potentially at a remote location, but is not achieved exclusively through the purchase of RECs.

**Quantifiable and Traceable:** Projects must demonstrate quantifiable emissions reduction for Boulder's electricity consumption.

**Local Benefits:** Projects should lead to meeting Boulder's goals of increased local renewable generation, as well as contribute to resiliency.

**Equity:** All projects should be accessible and affordable for all community members and evaluated by their effects on the economically disadvantaged among us.

**Scalable:** Projects should have the potential to be scalable and replicable beyond Boulder; demonstration of best practices that can be modeled for and adopted by others (e.g., like the Ithaca model).

## Recommendations for Action

### **Short Description** (how the concept works and target audiences)

The city and Xcel develop must develop a clear roadmap that shows how they will work together to achieve zero emissions electricity by 2030 for Boulder that is bound by the values and goals identified above. The plan will include both utility-scale and local (residential, commercial, and municipal), renewable generation and storage, demand-side management strategies, and other zero emissions technology. The Project Oversight Team will work on developing this roadmap and would bring this back to the Advisory Panel for further consideration and input.

### **Key Shift** (current state to future state)

Based on Xcel’s forecasted resource mix there is gap to the community’s goal of zero-emissions electricity without a clear path for closing that gap. A clear roadmap will outline how local generation and system-level changes will close that gap.

**Key Metrics** (how to measure success)

- Establish a clear baseline of Boulder’s share of currently forecasted load and grid resources, including local generation and storage resources, for now through 2030
- TBD Targets:
  - Emissions reduction equivalent to or greater than baseline forecasted 2030 emissions (defined as after 2021 ERP additions)
  - Local, emissions-free generation and storage in excess of baseline
- Other community benefits beyond emissions reduction
  - Enhanced resilience for the city operations and the community at large
  - Financial responsibility for rate payers taking into account equity considerations

**Biggest challenges and how to address**

Challenges	Description	Solutions to prioritize in the partnership work
<p><b>Zero emissions electricity requires systemic change</b></p>	<p>Historically “100% renewable energy” has been tied to REC (Renewable Energy Credit) attributes and calculated on an annual basis. To achieve zero emissions electricity, we must move toward a system that is fossil-fuel-free 24/7 based on reduced fossil-based electricity and added renewable energy (RE) generation and storage, demand side management (DSM) strategies irrespective of who owns the REC attribute.</p>	<p>Encourage increased local renewal generation, storage, DSM and inter-community cooperation; add utility-scale renewables, utility-scale storage and/or other zero-emissions solutions resulting in 100% zero emissions energy from 100% zero emissions capacity.</p> <p>Do not let goal of 100% RE/emission requirements impede adopting strategies that provide significant emissions reductions.</p> <p>Enable system-wide emissions reduction equal to or greater than Boulder’s estimated 2030 GHG emissions from electricity consumption.</p>

Challenges	Description	Solutions to prioritize in the partnership work
<b>Rate of renewable energy generation is too slow</b>	Historically, the utility has been slow to add renewable generation to its system.	<p>Increase incentives and breakdown barriers to increase distributed generation.</p> <p>Support projects that go beyond what is currently forecasted in the ERP.</p>
<b>Closing the gap becomes increasingly challenging the closer you get to zero</b>	The sun doesn't always shine, and the wind doesn't always blow, meaning storage, demand-side management, innovative time of renewables rate structures and other innovative zero emissions technologies are required.	<p>Advance longer-duration storage solutions, which could include implementing pilots, co-funding projects and/or exploring regulatory changes (e.g., to better leverage microgrids).</p> <p>Explore micro-grids and non-wire alternatives (e.g., storage, demand response, load shifting, time of renewables rate structures, etc.) to better leverage local resources and a direct load to when cleaner resources are available.</p>
<b>Barriers to individual adoption of local generation and storage</b>	<p>Currently, there are supply chain, workforce, regulatory, utility approval, and cost challenges associated with achieving our local renewable goals (i.e., solar panel import tariffs, delays in scheduling new installations).</p> <p>Many, including renters, have little control or influence over capital investments such as renewable energy installations.</p>	<p>Process efficiencies that reduce/eliminate hard and soft costs and approval barriers.</p> <p>Community education and outreach.</p> <p>New incentive models with an eye towards under-represented customer types (e.g., multifamily tenants, multitenant commercial properties, campuses, low-income subsidies).</p>
<b>Behind the meter disincentives to Xcel</b>	Adoption of behind-the meter solar, storage, and load management is currently available only to affluent	Develop models that leverage behind-the-meter technologies to

Challenges	Description	Solutions to prioritize in the partnership work
	customers and reduces electricity sales for Xcel.	have the greatest benefit for all utility customers.

### Immediate Recommended Action Items that the City and Xcel Should Pursue:

- **Develop the Roadmap to Zero Emissions Electricity:** Develop a clear plan of action that outlines the strategies, timeline, and resource needs necessary to achieve zero emissions electricity through 100% firm zero emissions capacity and 100% zero emissions energy for Boulder by 2030.
  - Complete development of baseline model based on Xcel's Electric Resource Plan based on the best information available today. The baseline model can be updated in the future if what is implemented materially changes the baseline.
  - Update local generation targets based on what is necessary to close the gap
  - Identify discreet projects that would be advanced through the partnership
  - Define key milestones, measures of progress and go/no-go decision points
  - Develop financial model to forecast necessary community and utility investment
  - Identify and secure any necessary sources of revenue to advance identified projects
- **Drive local, emissions-free generation:** Pursue multiple pathways to advance local renewable energy installations.
  - Provide immediate and robust education and awareness to potential solar adopters (residential and commercial) around declining tax credits and current residential and commercial incentives.
  - Host a “solar hack-a-thon” with local installers, city and utility officials, and building owners to identify barriers and solutions to expedite local solar installations, including developing sustainable models for off-site solar and master metering. Identify ways to reduce soft costs. Explore why financial tools, such as C-PACE is underutilized.
  - Expedite the renewable energy production and storage installations on city-owned property (potentially including open space) and buildings.
  - Explore barriers to market segments with currently low adoption rates, to include multifamily residential properties, rentals, affordable housing and multitenant commercial, and promote solutions at legislative and local community level.

- Explore public private partnerships to develop local renewable generation for customers that do not have market options available to them.
- **Develop System-level Solutions that Accelerate Grid-Wide Emissions Reduction:** Develop new program models (i.e., Zero Emissions Communities) that add utility-scale renewable generation and energy storage to increase emissions reduction above and beyond Xcel business as usual on the scale of Boulder's annual electricity emissions.
  - Complete financial, emissions and engineering analysis to provide comparative information to facilitate community engagement to identify one or more priority solutions.
  - As applicable, advance concepts through the necessary regulatory and legislative processes.
  - Enable community action and improve customer agency: Explore strategies including possible emissions reductions for making publicly available and easily accessible real-time renewable energy production information with the aim to facilitate Boulder consumer decisions about when to use electricity.