

WORKSHOP 1 MEETING NOTES

July 18, 2023
12:00 - 2:00 PM
Louisville Library
951 Spruce St, Louisville, CO 80027

Agenda

Time	Agenda
12:00 - 12:15 PM	Welcome & Introductions
12:15 - 12:30 PM	What is Xcel Energy's Partners in Energy
12:30 - 12:45 PM	What is Decarbonization?
12:45 - 1:05 PM	Baseline – Where Are We Now?
1:05 PM - 1:50 PM	Where Do We Want To Go
1:50 PM - 2:00 PM	Wrap Up & Next Steps

Notes

Welcome & Introductions

- Objectives
 - The City of Louisville is in the process of finalizing an Internal Decarbonization Plan, which outlines an approach to decarbonizing Louisville's municipal buildings and fleet
 - The purpose of this effort is to develop a community-focused decarbonization plan to outline an approach to decarbonizing our homes and business and modes of transportation
 - Through this planning effort, we will craft a vision for Louisville's decarbonization future that reflects Louisville's collective values and aspirations, identifies measurable goals to help us mark progress toward that future, and identifies strategies to make progress toward that future
 - The project management team acknowledges the importance of elevating equity throughout plan development and implementation

What is Xcel Energy's Partners in Energy

- Xcel Energy decarbonization goals
 - Xcel Energy currently provides 53% lower carbon emissions than 2005, plans to provide 100% carbon free electricity by 2050
 - **Stakeholder Question:** How does Xcel Energy plan to achieve 100% carbon-free electricity?
 - In the short term, will achieve goal through decommissioning of coal resources
 - In the long term, will require more substantial investment in renewable energy, battery storage, and emerging technologies
 - For more information
 - Read: [Xcel Energy Carbon Reduction Plan](#)

- Xcel Energy is supporting carbon reductions through investment in electric vehicle technology and infrastructure
- Xcel Energy is preparing for an increased electric load associated with building and transportation electrification
- About Partners in Energy
 - Partners in Energy is a two-year collaboration to develop and implement an actionable plan to meet community energy and transportation electrification goals
 - Partners in Energy provides professional project management, facilitation, data analysis, and communications and marketing services to communities at no cost to the community
 - Outcome of this planning process will be a detailed, public-facing decarbonization action plan and roadmap, including “who, what, when, and how” implementation details
 - **Stakeholder Question:** Will this plan include an cost analysis of the capital infrastructure investment and maintenance required to achieve decarbonization?
 - A high-level financial analysis will be included, focused on building equipment replacement, and may include estimates for home wiring and panel upgrades, but will not include maintenance costs or infrastructure costs beyond the panel
 - This planning process is intended to extend a bit longer – through early 2024 – to maximize opportunities for input and engagement, from this stakeholder team, the community, and through targeted interviews
 - Will try to align with comprehensive plan outreach where it makes sense, but can also use [Engage Louisville](#) website to garner feedback
 - Louisville was an early Partners in Energy participant, completing an Energy Action Plan in 2016; the plan was successful, Louisville achieved or exceeded the short-term goals set forth in the plan
 - **Stakeholder Question:** will the Louisville Internal Decarbonization Plan be integrated with this Community Decarbonization Plan
 - The Community Decarbonization Plan will integrate key framing elements from the Internal Decarbonization Plan, but the two documents reflect different levels of detail and will not be integrated into a singular document

What is Decarbonization?

- Decarbonization is the act of reducing carbon from human activities by:
 - Reducing embodied carbon
 - Reducing the energy required to power our buildings and transportation
 - Ensuring equipment is renewably powerable
 - Ensuring electric equipment is renewably powered
- Decarbonization can occur across all sectors that produce greenhouse gas (GHG) emissions, including energy, transportation, waste, water, and agriculture.
 - This Partners in Energy effort is focused on decarbonizing three of the largest GHG emission sectors – energy supply, building energy use, and transportation (with a focus on transportation electrification)
- Building electrification refers to the replacement of any gas-powered mechanical system with an electricity-powered system (e.g., HVAC, water heaters, stoves)
 - Building electrification poses a higher upfront cost, but can provide significant efficiency improvements and enables equipment to be powered renewably

- Federal, state, Xcel Energy, and City of Louisville incentives are available to lower the upfront cost of electric building equipment
 - Electric equipment is more efficient than natural gas-powered equipment, but the higher price per unit of electricity means that operational savings may not be realized
 - It is beneficial to plan for electrification ahead of end of life, as building electrification may require special considerations, such as infrastructure upgrades, sizing, or location
- Transportation electrification refers to the replacement of any gas- or diesel-powered vehicle with an electricity-powered vehicle
 - For this effort, only Battery Electric Vehicles and Plug-in Hybrids are considered electric vehicles. Plug-in hybrids have small rechargeable batteries that provide modest range, with a back up gas-powered engine that is accessed if the battery is depleted.
 - Electric vehicles currently have a higher upfront cost than internal combustion engine (ICE) vehicles, however, electric vehicles are more efficient than ICE vehicles and electricity costs less than gas or diesel
 - Electric vehicles can produce a 50% operational savings over the lifetime of the vehicle, associated with lower fuel prices and fewer maintenance costs
 - Federal, State, and Xcel Energy incentives are available to lower the upfront cost of electric vehicles and electric vehicle infrastructure
 - **Stakeholder Comment:** when considering strategies for the longer term, need to acknowledge that technology will change (e.g., hydrogen fuel cell vehicles may become more common.)
 - Note: the majority of hydrogen currently produced is produced using fossil fuels and is not yet considered lower-emission than electricity, gas, or diesel. However, hydrogen produces no emissions when combusted.

Baseline – Where Are We Now?

- A lot of support for decarbonization through state and regional planning efforts
 - Xcel Energy just submitted next iteration of Transportation Electrification Plan, which outlines plans and programs to help incentivize residents and businesses to invest in transportation electrification
 - Louisville participates in Boulder County Regional Transportation Electrification Plan implementation subgroups
 - Recently completed a mapping effort to support the County in pursuing a grant funding opportunity that will benefit multiple communities
 - Louisville participates in Front Range Beneficial Electrification Network, a coalition of front range communities working to unify beneficial electrification efforts across the region.
 - Focused on advancing regional workforce development, unified customer communications, understanding funding opportunities, and identifying opportunities to scale beneficial electrification
- Louisville has laid the foundation for decarbonization through several community-focused plans
 - Partners in Energy Energy Action Plan in 2016 was a successfully implemented planning effort focused on energy efficiency
 - Energy Future Collaboration is a framework for collaboration between Xcel Energy and the City of Louisville to support Louisville in the pursuit of carbon-free electricity sources and transportation electrification efforts

- Council Adopted Climate Action Goals provide a measurable basis for community decarbonization
- Louisville's Sustainability Action Plan provides a framework of strategies for us to build on. Through Partners in Energy, we can begin to add the implementation details of "who, when, where, and how"
- Louisville residents generally have a high capacity for decarbonization, with fewer perceived barriers than other communities
 - Louisville is a relatively small community with fairly sustainability-minded residents
 - The community-wide household median income is relatively high and most homes are single family and owner occupied, which correlates with a higher ability to invest in electric equipment
 - Most households have access to two or more vehicles, which correlates with a higher willingness to electrify at least one vehicle
- Louisville has a diverse business community and a robust network of organizations (e.g., Boulder County Partners for a Clean Environment, Chamber of Commerce, Economic Vitality) to support businesses along decarbonization journeys
 - 6 primary business districts with wide variety of industry and sizes
 - Unlike residential sector, commercial decarbonization can vary widely from business to businesses
- Decarbonization Opportunities and Barriers
 - Stakeholders reflected on the question "What makes Louisville unique for decarbonization" and categorized their responses as either "barriers" or "opportunities". The results are as follows:
 - Barriers
 - Less stick more carrot approach to getting businesses to adopt new programs
 - Old/historic infrastructure
 - Cost of implementation
 - Danger of alienating business
 - Potential timeline and cost
 - Competing budget priorities
 - Streamline regulations and "red tape" to make it easier to make changes
 - Prioritization
 - Cost
 - Education
 - Tenant/owner split incentive
 - Need to clearly defined CBA for proposed programs to prove benefit
 - Marshall Fire Recovery will be a focus in the short-term and potentially delaying support
 - No business or resident incentives to invest in it
 - Economic inequality
 - Some backlash is building, based on recent ordinances (gas station ban, energy codes) and the constant battle over limiting growth. There is an anti-business reputation that unfortunately gets tied to sustainability initiatives
 - Opportunities
 - Outdoorsy population supportive of initiatives
 - Community organization support

- Growing capacity of city sustainability support
- Large percentage of people are eco-minded
- Incentives voter support for sustainability initiatives motivation
- Size of community
- Educated
- High level of community engagement and communication channels
- Small community, nimble. And able to make change quickly (within municipality)
- The residents political belief systems (the will of the people)
- Lots of potential space for behind the meter small scale community solar (5 MW or less – Distributed Energy Resource [DER])
- Lots of open space and vegetation that could potentially be revised to sequester more carbon than it currently is
- Louisville is a more affluent population, with an interest in the environment.
- The different climate equity barriers we face: structural, regulatory, cultural, contextual, and lack of financial incentives present an opportunity for our community to learn from and become part of the solution to climate change.



Figure 1. Barriers and opportunities activity

Where Do We Want To Go

Vision

- A vision statement gives the big picture that guides where plan is headed
- Vision statement activity
 - What is your decarbonization vision for Louisville 20 years from now?
 - Pace transition with developing technologies as new opportunities present themselves
 - Constant improvement to build energy efficiency opportunities and see results throughout the timeline toward zero carbon
 - Understand the remaining life of all carbon production equipment
 - Expansion of EV, E-bikes, E-carshare, “solo driving declines by X”
 - More Access to EV Charging
 - Less water use
 - To meet science-based targets, all equipment is electric powered
 - Buying an all-electric, high efficiency home should be a premium that realtors understand and buyers appreciate
 - Let's speed up and enhance energy management and sustainability efforts that benefit everyone involved.
 - What are core values that are important to Louisville community members?...
 - Pride in the community
 - New programs need to be fair and equitable.
 - Continuous improvement positive change better quality of life as a result
 - Transparency and clear communications that is easy to understand
 - Support for families
 - Climate change
 - Economic vitality, thriving business
 - Best small town in America
 - General sustainability
 - Future generations
 - Equity
 - Economic Vitality
 - Protecting space - no overgrowth
 - Simplicity
 - Options
 - Regional collaboration
 - Innovation
 - What metrics should be used to measure decarbonization success?
 - As simple as possible
 - Educating the key players in the value proposition
 - How many non carbon vehicles &
 - How many brick and mortar businesses are all electric
 - How many households have converted
 - Amount of non-renewable waste
 - # of Evs

- # of Charging Stations
- # of permits pulled
- GHG emissions reduction (BUT, I would want to see this based on actual reductions and not offsets/RECs)
- kWh usage
- therms reduced
- Cost
 - Incentives
 - Private investments
 - Fiscal responsibility
- Supportive policies
- Economic Viability
 - # implemented/adopted
 - \$ of support/match
- Percentage of EV ownership
- Measure metrics between residents and businesses
- Supply of EV charging stations
- % of home building that are retrofitted for EV, electrification of building systems
- Resiliency of electric system in face of disaster (i.e., can we provide renewable carbon free energy when systems fail)
- Fostering a greater sense of accountability, empowerment, and proficiency in navigating resources

Goal setting

- Goal setting is iterative process
 - Goals can be top down (e.g., “we will be carbon neutral by 2050, what do we need to do to get there?”) or bottom up (e.g., “we want 1000 residents to electrify their HVACs, what will the GHG impact of this be?”)
 - This stakeholder team will determine the level of ambition that will be used to set a top down goal, and then we will model what collective action is required to achieve that goal
 - We can adjust the goal up or down based on the outcome of the modeling, the resources available to support the goal, and any resource gaps identified
- Establishing level of ambition
 - Currently, Louisville is meeting or exceeding City Council Climate goals (e.g., maintain GHG emissions below 2016 levels and achieve 75% of carbon free electricity)
 - The impacts of Xcel Energy’s carbon-free goals alone will ensure Louisville continues to meet its goals, even with no deviation from current activities
 - Through this process, Louisville wants to identify a more ambitious goal to understand what it would take to accelerate decarbonization activities.
 - Conservative – achievable with current workforce/budget
 - Ex: Meet state goals: 50% below 2005 GHG emissions by 2030
 - Ambitious – requires additional investment, but doable
 - Ex: Superior goals: 60% below 2016 GHG emissions by 2030 and net-zero GHG emissions by 2050

- Ambitious early on and lessens as the grid greening catches up
 - Would require significant investment and for some residents and businesses to replace equipment before end of useful life
- Aspirational – needs significant adjustment in priorities
 - Ex: Boulder goal: Net zero emissions by 2035
 - Would require substantial investment and for many residents and businesses to replace equipment before end of useful life.
- Stakeholders were asked to indicate their desired level of ambition for this planning effort along a spectrum, with the examples provided above as guideposts. The results were as follows:
 - Conservative
 - Balance economic vitality and cost to implementation
 - Be on more of a steady gain goal so business can effectively adopt new technologies and programs align with state of CO
 - Between conservative and ambitious to balance costs and results
 - Ambitious
 - Similar to superior goals. Not a step in the near term, recognizing other city priorities, economy
 - Louisville should take a middle ground between conservative and aspirational. We have the know-how and motivation to dream big, but we don't want to set ourselves up for disappointment or failure!
 - For success, I think it is important to be realistic in what we can accomplish but to push the envelope b/c the effects of climate change are something that we are dealing with worldwide and needs to be addressed yesterday.
 - Aggressive, yet balanced.
 - Aspirational
 - Let's speed up and enhance energy management and sustainability efforts that benefit everyone involved.
 - If any community can do it, we can. Many communities won't, we need to be leaders. Once we get there, we need to find ways to support others.

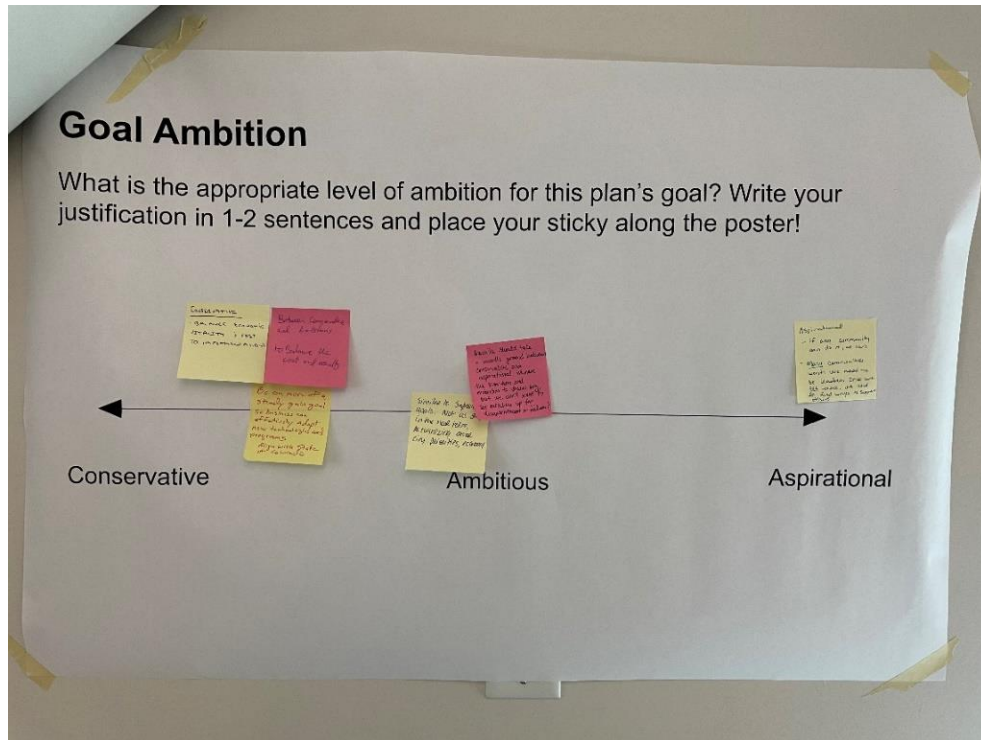


Figure 2. Level of Goal Ambition Activity

Wrap Up & Next Steps

- Workshop 2: Late August
 - Tuesday, August 29 from 11-1pm
- Look for materials ahead of Workshop 2
 - Draft vision and goal and energy and transportation trends
 - Louisville Sustainability Action Plan (read relevant chapters: climate, transportation, and energy).