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MINUTES
CITY OF FORT COLLINS
FUTURES COMMITTEE MEETING

Date: December 10, 2018
Location: CIC Room, City Hall, 300 Laporte Ave.
Time: 4:00–6:00pm

Committee Members Present:
Mayor Wade Troxell
Ray Martinez
Kristin Stephens

City Staff:
Jeff Mihelich, Deputy City Manager
Lucinda Smith (Staff Liaison)

Presenters:
Kevin R. Gertig, Utilities Director, City of Fort Collins
John Phelan, Sr. Manager Utilities Customer Connections, City of Fort Collins
Tim McCollough, Deputy Director Utilities, City of Fort Collins
Lorenzo Kristov, Electric System Policy, Structure and Market Design
John Di Stasio, President, Large Public Power Council

Additional Staff Present:
Lindsay Ex, Environmental Services
Nina Bodenhamer
Teresa Roche, ELT, Human Resources
Molly Saylor, Environmental Services
Lisa Rosintoski, Utilities
Joe Wimmer, City Manager's Office
Rhonda Gatski, Utilities

Community Members:
Dale Adamy, citizen
Dave Smalley, Platte River Power
Alan Braslau, Energy Board
Alyssa Clemsen Roberts, Platte River Power Authority
Kate Busse, DOLA, State of Colorado
Alex Kuretz, citizen
Richard M, Citizen

Meeting called to order at 4:05pm

Approval of Minutes:
Kristin moved to approve October minutes. Ray seconded. Motion passed unanimously. 3-0-0.

Chairman Comments: None

Think Tank Item 7-2018: The Future Energy Network, Fort Collins Utilities in 2050

Kevin Gertig

- Introduces John Di Stasio and Lorenzo Kristov.
- Summarizes that Staff in Utilities have taken a direction for transformational change for light and power infrastructure. Also navigating how renewable energy sources affect systematic changes in system.
    - Working with Sustainability Services to navigate transformation and navigate renewable energy and systematic changes in system
    - Staff is also engaged with local and national experts with timeline with results that fits into City Plan

John Phelan, Sr. Manager Customer Connections Utilities City of Fort Collins.

- Frames the questions that will be discussed during the meeting; What light and power infrastructure will look like with changes in energy distribution and what the role is for the City of Fort Collins.
- Purpose for the meeting is to discuss a vision for the Fort Collins Utilities electric distribution system that is based on assumptions for both future consumers and the generation and transmission system.
- As a municipal utility, there are different levers that can be used in these transformations. These include:
    - Policy
    - Research
    - Infrastructure, technology and communication

Tim McCollough, Deputy Director Utilities, City of Fort Collins

- Discusses how the outcomes the City is achieving now are based on policy decisions from 20-30 years ago.
    - Policy decisions in the late 1960s led to underground distribution of electric lines
    - This affects ability to have distribution in renewable energy sources
    - Physical layer where we see the most change—now we are looking at end device
        - Seeing larger amount of renewable energy
        - Changes in physical distribution
        - High speed connections
        - End use device solar, electrification of devices, etc.
    - Fort Collins enjoys a reliable system today and can continue to enjoy that moving forward
        - Resilient community—electric infrastructure highly insulated

John Di Stasio, President Large Public Power Council

- Begins discussion with how the energy market is changing rapidly; advances in technology are outpacing policy and regulation.
- Consumer interest and technology are important catalysts of change in the energy market
    - Consider what can be done in various communities that will benefit constituents in a meaningful way
- Many important trends that are effecting changes in the energy market
    - Trend one: loads are flat or declining
    - Trend two: lower gas prices and market prices for natural gas
    - Trend three: growth in renewable energy
    - Tend four: renewable energy sources costs have decreased
    - Trend five: retail price for electricity is flattening and staying significantly below the CPI
    - Trend six: Changes in consumer expectations
        - Polls show consumers say we should at least be as aggressive as Clean Power Plan (approximately 70%) public expects municipalities and utilities to be responsive to this
        - Other large consumers such as large corporations have corporate goals around sustainability
            - Want a certain percentage of renewables in their portfolio
            - For example, 137RE100 companies have made a commitment to go 100% renewable
        - Increase in smart technology
        - Startup companies in smart technology are emerging in the energy space
    - Trend seven: Electrification is gaining traction because of consumer interest
        - Opportunity to provide additional value in communities and help with load deficit that has been seen
        - Automakers talking about shared mobility, autonomous vehicles—it's going to change significantly. Potential for certain amount of conversion
        - Investments being made in China for EV. They are largest EV market now
    - Trend eight: new technologies
        - Artificial intelligence has the potential for machine learning to deal with complexity
            - How to use AI to manage grids?
            - This is being tested in Germany
        - Electricity use cases under development are transactive energy. Examples include:
            - Grid flexibility
            - Home automated networks
            - Access to national labs
            - Startups
- Advances in technology and consumer interest are drivers of these trends
- How do these trends relate to municipal providers?
    - Municipal providers are in a good position because they are directly accountable to consumers

- Focus on community as driver of economic development and environmental stewardship
    - Need to serve citizenry and lack of policy at federal policy puts municipal providers in a good space to provide these things in a comprehensive and innovative way
    - Partner for scale and speed—look at limitations in charter and see who Fort Collins can partner with
- More and more digitization of infrastructure creates expectation that any experience with provider would be equal to experience anywhere else. Customer service ubiquitous
- Continue to anchor to broader outcomes
    - Linking to issues of climate change, resiliency, etc., allows for anchoring to outcomes
    - There will be a need to consider different market constructs, but also need to focus on flexibility
    - Fort Collins has a unique opportunity because of the work it has already done.

Lorenzo Kristov, Electric System Policy, Structure and Market Design

- Lorenzo discusses his background working at California ISO for 19 years and developing policy around interconnection and distribution policy
- In traditional power systems, institutions and practices were designed for one-way power flows and centralized, top-down control
- Future Power systems have power going both ways and flowing in different directions
    - New policy goals, renewable generation, and cost-effective, local-scale technologies are changing almost everything
- Distribution-connected energy resources (DERs) enable the transition to a more decentralized power system
- DERs is a broad category where everything is connected at distribution
- Growth of DERs is autonomous and decentralized
    - "Behind the Meter market"
        - Customers don't care about commodity they care about services that are offered
        - Grid defection becomes more feasible—don't need to be connected to the grid
        - Leads to question about the value of the grid? Not moving electricity but allows connection to the network.
- Sustainability and resilience: think about how to start with policy objectives and move towards implementation of specific actions that impact the grid
    - Policy level—risk of more severe climate events
        - Think about sustainability—don't do more damage to systems
        - Resilience—how to adapt to damage done (near-term impacts)
        - At the local level, how are impacts managed?
    - Policy strategies to manage impacts: decarbonization, build sustainable cities
    - Planning and implementation of these strategies:
        - Electrification
        - Building resiliency hubs

- There is a need to examine grid architecture; examine the power system as a whole and determine how all the pieces fit together.
    - What is the relationship between transmission and distribution? How do we rethink that in system with lots of distributed resources?
- Considerations when examining grid architecture:
    - Shares of renewable generation on grid growing
    - Grid operators need flexibility services
    - Electrification programs and customer adoption will grow DERs and the impact
    - DERs can be sources of flexibility for the whole system
    - DERs can shape electrification demand to manage grid impacts
- There are two models of grid architecture:
    - Model one: The Grand Central model:
        - The Transmission System operator sees and dispatches DERs for system operating and real time services.
        - Distribution utility is minimal—no role in coordination.
        - Approach has significant complexity, security and scaling risks
    - Model two: Layered Control:
        - Scalable architecture for high DER
        - Distribution utility (DSO) coordinates interchange with TSO and simplifies practices at the transmission level
        - DSO coordination is flexible and reduces complexities and vulnerabilities to system
- Examine the building blocks for resilient 21st Century Electric System
    - Local power systems based on renewable energy and storage that meets community needs
    - Integrated municipal system with electricity at the core
    - Decarbonize by electrifying
    - Reinvigorate energy efficiency
    - The whole electric system: "decentralized and integrated"

Comments/Q&A:

- City has a close working relationship with Platte River, the two entities are working together on grid integration and other things to adapt to changes in the energy market.
- It is important to consider outcomes when working on energy policy. Outcomes are:
    - Balancing reliability, affordability and environmental stewardship
- Discussion of how Council members have received many questions about the renewable energy goal and if this goal will be equitable.
- Question raised on how City can manage community members' distrust or fear about costs associated with Renewable Energy goal.
    - Equity is an outcome for the City of Fort Collins, so energy plans developed will need to be anchored to equity as a community outcome
    - Even as we make a policy of 100% RE, it needs to be looked at holistically and tradeoffs need to be recognized.
- As a community, we need to define resiliency and identify risks and strategies associated with building a resilient community.

- General discussion of moving away from one size fits all mentality when considering changes to the electrical system.
    - Consider our outcomes and community values.
    - General discussion that in the future energy should cost less and be more reliable.
    - Being intentional about goals and how to meet community outcomes
    - Our future should be that it costs less and is more reliable.
- Technology and infrastructure are in place for mixed use
- City is in a good position because of its strong connection with consumers
    - This creates direct accountability
    - Should consider how we partner with stakeholders
- Discussion of how more people defect from the grid, need to be flexible and adjust operations as needed.
- Discussion about how we will need to be cost effective and have the political will to move forward.
- Education will be important to inform community members of changes the City will be making and why
- As a community, there is a need to begin with the end goals in mind and build policies and programs around that.
    - Recognize our durable partners (such as CSU) and build around partnerships
    - Think about number of companies i.e. HP, Intel, New Belgium with industrial loads who have committed to using renewables.
        - Making headway on residential loads
    - Flexibility is important—need heterogenous mix to minimize risk (more than wind and solar)
    - City is towards services which is valued by customers

Bloomberg Harvard City Leadership Initiative

- Mayor Wade Troxell reported this initiative has ended
- The City is having conversations with Panasonic as it relates to transportation systems with direct implications for EVs convergence with EVs and autonomous vehicles abilities to partner with various industries becoming more of an open platform—Panasonic initiative
- The City is in conversations with Harris corporation for UAB commerce as it relates to ability for business models to be validated in urban contexts for Cities of commerce and UABs

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Additional Discussion:
None.

Meeting adjourned by Wade Troxell at 5:51 *pm.*