CenterPoint 2022 IRP
2nd Stakeholder Meeting Minutes Q&A
October 11, 2022, 9 am – 3 pm CDT

Richard Leger (Senior Vice President, CenterPoint Energy) – Welcome, Safety Message

Matt Rice (Director, Regulatory and Rates, CenterPoint Energy) – Discussed the meeting agenda, guidelines for the meeting, discussed updates from the last stakeholder meeting including feedback, and the proposed 2022/2023 IRP and stakeholder process.

- Slide 10 Capacity Change:
  - Question: How are the capacity factors for renewable energy resources being incorporated? What are the capacity factors in the model considering projected capacity shortfall?
    - Response: When we get to the ELCC conversation, we will see how these numbers are projected. We will work to incorporate new information into our model as it is provided from MISO.
- Slide 18 Updated IRP Draft Objectives & Measures:
  - Question: Does that CO_2 include all the upstream emissions of methane?
    - Response: We are considering stack emissions. This does not include any potential upstream. We looked at this in the last IRP, and the differentiation among competing portfolio results was not meaningful. For this reason, we chose not to do a lifecycle analysis again.
  - Question: Are you going to include non-CO_2 GHG emissions in your total emissions count?
    - We will model CO_2 equivalent to capture those additional emissions.
- Slide 18 Industrial DR:
  - Question: Could we figure out a sensitivity to see if other economical Demand Response potential could be picked up?
    - Response: We will continue to have this conversation. Our team has been actively talking to our industrial customers asking what it would take to "move the needle" for participation. We do feel that 25 MW may be pushing the envelope, but we can talk about adding another sensitivity to the analysis.
- General Section Questions:
  - Question: Will CenterPoint reconsider the CTs or the decision made to extend the life of the coal plant(s)? Will the scorecard and cost risk reflect the inclusion of the CTs and the coal units?
    - Response: Yes. The measure calculations on the score card will reflect the full resource portfolio. We have made the decision to move forward with the CTs.

Drew Burczyk (Consultant, Resource Planning & Market Assessments, 1898 & Co.) – Discussed the Request For Proposals (RFP) update including the impact of the IRA on pricing for CenterPoint's RFP.

- Slide 27 – 28 IRA Updates:
  - Question: There is a conflict on October 31st. Can we move the draft results discussion on that day?
    - Response: Yes. We will update the timing.
  - Question: Regarding cost savings due to tax credits, is that for CenterPoint or the bidder? How is the savings reflected in the process?
    - Response: If the bid was a purchase option, the purchase price would remain essentially the same. Any changes to the tax credit would result in a savings for CenterPoint's customers. If we model a purchase option, we would plan on CenterPoint fully monetizing that tax credit which would result in a tax decrease. [The savings would be passed back to customers.]

Kyle Combes (Project Manager, Resource Planning & Market Assessments, 1898 & Co.) – Discussed the 2022 IRP Draft Resource Inputs, seasonal accreditation, technical assessment, and cost curves.

- Slide 34 Solar Seasonal Shapes
  - Question: Regarding the solar curve, is that fixed south facing? I would like to suggest that it would match up much better if you modeled west facing panels and bi-facial.

        - Response: This profile is actual data from the Troy solar farm which does have single axis tracking. There is always a balance or tradeoff depending on the orientation of panels.
- Slide 36 Thermal Seasonal Shapes
    - Question: Can we consider how often thermal units are offline when considering thermal units? Possibly consider MISO data on thermal units.
        - Response: MISO uses a class average EFOR (Equivalent Forced Outage Rate) for new resources. If existing resources are called on and cannot meet demand, they will get docked for that. If you have a major outage that lasts several months, that will affect your accreditation for years to come until you can prove reliability. This will be considered with the planning reserve margin. There is a distinction in the availability due to a planned or unplanned outage. We are focused on the unplanned outage in our modeling.
- Slide 40 Balance of Loads and Resources (BLR)
    - Question: Do you plan to keep Culley 2/3 online until 2042?
        - Response: Not necessarily. [We plan to retire Culley 2 in 2025.] We will consider Culley 3 retirement at different junctions, as well as a natural gas conversion. This slide includes a representation of resources without retirements included and is not indicative of our plan.
- Slide 45 Technology Assessment
    - Question: A number of the thermal bids are for existing plants, and we did not get bids for all types of alternatives. How will you create cost assumptions for those?
        - Response: A technology assessment was developed for this IRP. We will utilize costs from this assessment for technologies where we did not receive bids in the RFP.
- Slide 46 Technology Assessment
    - Question: Have we considered iron oxide batteries?
        - Response: There are a couple pilot projects we are following. We will incorporate that in future IRPs as it becomes more proven and feasible.

Michael Russo (Senior Forecast Consultant, Itron) – Discussed portfolio forecasts.

- Slide 56 Model Estimation:
    - Question: I was under the impression that Evansville is moving to LED streetlights. Is that the case and how far along are they on this plan? Why are we using 8-year-old data if we are transitioning to LEDs?
        - Response: Streetlighting sales are declining in the model, which reflects the gradual incorporation of LEDs. There are certain sections that have been replaced. Relative to other forecasts, street lighting is a very small load. Each year, we replace a set number of streetlights with LEDs as they need to be replaced.
- Slide 57 Residential Average Use Model:
    - Question: Are you taking the IRA into account in the residential model? Does the utility have any plans to promote or encourage customers to take advantage of these IRA incentives?
        - Response: Currently, we do not have a way of accounting for the IRA in the residential use model until next year when the EIA updates their model. We are still trying to figure out exactly how this process will look in the future.
- Slide 58 Residential Forecast Drivers:
    - Question: The Annual Energy Outlook (AEO) 2022 incorporated impacts of demand side efficiency, and it was prepared before the IRA. How are you thinking about that prior to the release of the AEO 2023?
        - Response: Those estimates do not include the impact of the IRA. They don't do any midterm update. This information wouldn't capture the IRA's effects until next year's release. [We are using the best information that we have available for the forecast.]
- Slide 62 Customer Photovoltaics:
    - Question: Can we see the methodology behind the Residential Payback graph?
        - Response: We can follow-up on a Tech-to-Tech call or an individual meeting.
    - Slide 69 Assumptions:
    - Question: Do you know if the assumptions for increased adoption on clothes dryers and electric water heater also captures some assumptions about heat pump variance?

        - Response: There is not a specific heat pump electric water heater in the information we receive from the federal government.

- General Section Questions:
    - Question: How do emerging technologies affect our evaluation of energy use (specifically from EVs)?
        - Response: We don't make a distinction of the vehicle and how it will be charged. We include an estimated kWh per vehicle, and we don't make a distinction as to where those kWh's come from.
    - Question: The heating efficiency on the electric side is based on resistance heating. Is that the case?
        - Response: In the AEO, there is resistance heat which has no efficiency improvement. There are efficiency improvements for air-source and ground-source heat pump. The saturations are growing faster than intensity.

Brian Despard (Project Manager, Resource Planning & Market Assessments, 1898 & Co.) – Discussed the probabilistic modeling approach and assumptions including inputs.

- General Section Question:
    - Question: How do you come up with standard deviations around the load forecast? Are each of the cases equally probable?
        - Response: We are taking the standard deviation from a mix of the various runs.

Matt Lind (Director, Resource Planning & Market Assessments, 1898 & Co.) – Discussed portfolio development including existing resources and draft alternatives resources.

- Slide 86 Existing Resource Options:
    - Question: Did you think about repowering Benton County?
        - Response: CenterPoint has a PPA for this location. Since CenterPoint does not own Benton County, the decision to repower it is out of our control.
- Slide 87 Draft New Resource Options:
    - Question: How are you coming up with the capacity for the new coal resources?
        - Response: We didn't receive a bid for coal with carbon capture from the RFP. The Technology Assessment, developed by 1898 at Burns & McDonnell will be utilized for this option.
    - Question: Regarding hydroelectric, there has never been any discussion of that. Is there any discussion that we are unaware of?
        - Response: Hydroelectric was considered in the last IRP. Hydroelectric is still an option that will be selectable for portfolio development.
    - Question: Is the long duration storage option you have included the compressed air proxy?
        - Response: Correct.
    - Question: There is a start year of 2027 for long duration storage. What made you choose that?
        - Response: Development time. Making sure it would be available. We didn't receive any RFP bids prior to that year.
- General Section Questions:
    - Question: Are you all taking into consideration the cost of OVEC to CenterPoint customers? What's the plan to get rid of OVEC?
        - Response: From a modeling standpoint, the cost associated with OVEC is included. However, under the agreement, we are not obligated to cover any additional costs. The contract doesn't provide for us to have to bear additional costs. We have evaluated the contract, but we do have contractual commitments.
    - Question: Are the costs that you are modeling include transportation of the pipeline and to the point of injection for carbon capture and storage (CCS)? Are you talking about any potential areas of injection?
        - Response: Yes, that would be the equipment to have those units capture and store the carbon emissions. Not additional pipelines. We will write that down as a topic for discussion.

Matt Lind – Discussed when draft modeling results will be presented.

Open Q&A Session

- Question: Regarding methane emissions, there's a substantial fee for those from the IRA. Have you figured this into your methane cost projections?
    - Response: We are working to get updated assumptions from multiple vendors. We will be leveraging newer gas price forecast over the next few months for inclusion in final modeling.
- Comment: Stakeholders wants to see a portfolio where there are no CTs being built in the future.
- Question: How can we sign the NDA?
    - Response: Please send an email to the IRP@centerpointenergy.com, and CenterPoint will send the NDA to be signed by the stakeholder.