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IDAHO PUBLIC
UTILITIES COMMISSION

IPC-E-21-21 "Study Design" Objectives and Staff Questions

Primary Objective (for this case – "study design phase"):

1. Develop a scope of a study – study to be completed by the Company that will help determine:
 - a. The dollar amount paid to on-site generation customers in the form of rates, who export energy on to the Company's grid (Export Credit Rate – "ECR").

By evaluating:

- Rate designs for ECR
 - Other PUC models
 - Other "Models" (quantitative/mathematical) for evaluating rate design
- Value of avoided cost of energy
- Value of avoided cost of capacity
- Value of cost of avoided transmission and distribution
- Value of cost of avoided line losses
- Cost to integrate customer-generation exported to the grid
- Environmental and Other Benefits
- Idaho Power profit margin by customer class and by measurement intervals (month, hour, separate channel)
- Cost of purchased power by provider type (wind, solar, hydro-generation) by measurement intervals (month, hour, separate channel)
- Recommendations regarding the timing and threshold number of customer generators when the PUC should implement a change to the ECR
- Fair method for evaluation of all customers/classes to ensure the systemic process remains fair, just, and reasonable for all customers
 - How does IPC define "fair, just & reasonable? What factors need to be considered for each fair, just & reasonable.
 - What recommendations does IPC for weighting the factors in the evaluation of fairness, justness, and reasonableness?

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- b. The proper ECR measurement interval (month, hour, separate channel).

By identifying, characterizing, and/or quantifying implementation issues of potential ECR solutions and rate designs using the different measurement intervals.

Sub-objectives of Study:

1. Identify, characterize and/or quantify problems and issues that potential ECR alternative solutions will create that will impact the Company's ability to recover costs from self-

generating customers. The evaluation should include issues across the ECR solution space and Non- ECR solutions space using the different ECR measurement intervals (month, hour, separate channel) and ECR rate designs.

2. Identify, characterize and/or quantify impacts to both participating and non-participating self-generating customers (e.g. bill impacts, subsidies) relative to potential ECR solutions. The evaluation should include issues across the ECR solution space using the different ECR measurement intervals (month, hour, separate channel) and ECR rate designs.
3. Evaluate alternatives (including the process definition, frequency of updates, timing, customers affected, magnetite of customer impacted relative to total system, etc.) for updating the ECR to ensure it remains fair, just, and reasonable for all customers.
4. Provide precise definition of terms used in the study.

Company's Objectives from Application and Testimony

1. *The Company's primary objective of the study process is to establish a sustainable on-site generation offering that limits subsidies by implementing a more equitable pricing and compensation structure.*
 - *Recommendations to modify the existing offering should focus on cost-of-service principles, while identifying the appropriate value of excess net energy to ensure equitable compensation for on-site generators.*
2. *To prepare and file a "credible and fair study" of the costs and benefits of distributed on-site generation using the most current data*
 - *What factors determine "credible and fairness to the PUC"?*
 - 2-○ *How might the PUC staff weight these factors?*

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Proposed Scope: On-Site Generation Study

Measurement Interval

1. Calculate the class revenue requirement if each of the existing customer-generators net their energy exports:
 - **Staff:** What changes can the Company expect to the revenue requirement other than the amount the Company purchases from the customer-generators?
 - **Staff:** What is the purpose for calculating the *class revenue requirement* for purposes of the developing the ECR, if each of the existing customer-generators net their energy exports by month, hour, and separate channel?
 - a. Monthly
 - b. Hourly
 - c. Separate channel
 - **Staff:** Will separate channel be split between input channel and output channel?
If not, please explain.
2. Calculate the export credit payments if each of the existing customer-generators net their energy exports:
 - a. Monthly
 - b. Hourly
 - c. Separate channel

3. Analyze bill impacts to existing customer-generators, stratified by usage, if energy exports are netted:
- Monthly
 - Hourly
 - Separate channel

Export Credit Rate ("ECR")

Avoided Energy Value

4. Provide the calculations and documentation for the avoided cost of exported energy using:
- **Staff:** In determining the ECR by evaluating the value of avoided energy cost to using meter measurement intervals by month, hour, and separate channel, please explain if this evaluation should consider the following:
 - different methods to value energy (surrogate, market, proxy, etc.)
 - value of energy during different times of the day, week, month, and or year (e.g. 12 month x 24 hour energy export profiles)
 - Different configurations of customer generators including non-exporting customers and customers with storage
 - a. Energy price assumptions in the Company's most recently acknowledged Integrated Resource Plan ("IRP")
 - **Staff:** What assumptions are currently being used from the IRP?
 - b. Market index price assumptions
 - **Staff:** Which market indexes prices will be looked at? Real-time, day ahead, 15-minute, other?
 - **Staff:** How do you translate the market index price assumptions into an ECR?
 - **Staff:** Are you going to base this price on differing hour prices?
5. Provide the calculations and documentation showing if the avoided cost of exported energy produced by customer-generators should be discounted to reflect the non-firm nature of the exported energy.
- o **Staff:** Does the IRP price include the impacts of non-firm energy? How does the IRP pricing methodologies take into account non-firm energy (if any)?

Avoided Capacity Value

6. Analyze the capacity value of exported energy provided by customer-generators. Provide the calculations and documentation for evaluating the capacity resource value and the contribution to peak.

- **Staff:** What is the most appropriate method for determining the peak need for capacity from which the avoided cost of capacity will be determined and how should it be calculated?
 - 100 peak hours?
 - Peak hours of each day?
 - Effective Load Carrying Capacity ("ELCC")?
- **Staff:** In determining the ECR by evaluating the value of avoided capacity cost using meter measurement intervals by month, hour, and separate channel, please explain if this evaluation should consider the following:
 - Using different methods to value the avoided cost of capacity (surrogate, market, proxy, etc.)
 - How to identify the Company resource investment being avoided (generation, transmission, distribution, etc.)
 - Value of avoided capacity cost based on when the Company's system or local distribution area first becomes capacity deficient.
 - Peak hours that the exported energy will avoid incremental capacity investment (ELCC, capacity contribution at peak).
 - Potential rate designs (paid for all export using capacity contribution at peak or only paid during coincident peak hours (time of generation), etc.)
 - Different configurations of customer generators including non-exporting customers and customers with storage.

Avoided Transmission and Distribution Costs

7. Quantify the value of transmission and distribution costs that could be avoided by energy exported to the grid by customer-generators.
 - **Staff:** Are transmission and distribution avoided cost of capacity evaluated separately?

Avoided Line Losses

8. Quantify the avoided line loss associated with the avoided energy value and avoided capacity value.
 - **Staff:** Since electricity is being put back on the grid at the distribution level, does distribution line losses make sense to include? Or how should this be reflected in the analysis?
 - **Staff:** How do you avoid duplicate counting of avoided distribution cost and avoided line losses at distribution level?
 - **Staff:** When was the most recent line loss study? How was this line loss study validated?

Integration Costs

9. Study methods for determining the integration costs of customer-generators. Provide the calculations and assumptions showing if the ECR should be reduced to account for integrating the customer-generator resource.

- o **Staff:** How will the Company present the methods studied? Will all methods studied be presented?
- o **Staff:** In determining the ECR by evaluating the cost to integrate customer generation exported to the grid using meter measurement intervals by month, hour, and separate channel, please explain if this evaluation should consider the following:
 - Cost of reserves needed to balance the variability of customer generation exported on to the grid
 - Different methods for determining cost of reserves (i.e. EIM, dispatchable capacity, etc.)
 - Different configurations of customer generators including non-exporting customers and customers with storage

Recovering Export Credit Rate Expenditures

10. Quantify the annual costs under varying assumed ECR values.
- o **Staff:** How does this differ from items 1 and 2 above?
11. Analyze how these costs would be allocated and recovered by rate class.
- o **Staff:** Should the cost of issuing ECRs to customer generators be recovered through the PCA? Should the PCA mechanism be modified to incorporate the cost of ECRs such as adjustments to load and energy-classified fixed production costs in the Sales Based Adjustment?

Cost-of-Service & Rate Design

12. Evaluate cost-of-service methodology and potential rate designs for customer-generators.
- o **Staff:** Please explain how different rate designs might drive different customer behavior on energy consumption and influence energy exports from customer-generators.
 - o **Staff:** From a cost recovery perspective, what are the impacts of raising the customer charge?
 - o **Staff:** From a cost recovery perspective, could a demand charge work?
 - Demand Charge by the peak hours of the month?
 - Demand at peak moment?
 - Average of demands?

Revenue-of-Service & Rate Design

Evaluate revenue-of-service methodology and potential rate designs for customer-generators and Non-customer generation class of IPC customers.

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Note: I believe there are two components to the analysis, the “cost based” portion and the revenue side of the equation. These factors cannot be evaluated independently, as the proposal may recommend changing the “timing” of measurement from the current monthly to some other form of time-measurement (hourly, separate channel) and are adding a third diminution of “peak demand”.

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Project Eligibility Cap

13. Analyze pros and cons of setting a customer's project eligibility cap according to a customer's demand as opposed to predetermined caps of 25 kW and 100 kW.
- o **Staff:** Should this be analyzed from a customer's peak demand? Other?
 - o **Staff:** Please indicate the reasoning for predetermined caps of 25kW and 100kW?
 - o **Staff:** Does the size of the cap need to consider impacts to safety and reliability of the system?

Environmental and Other Benefits

14. Evaluation of the quantifiable environmental and other system benefits provided by customer-generators.
- o **Staff:** Are there existing studies that the Company plans to use here?
 - o **Staff:** What criteria does the Company plan to use to quantify the environmental and other systems benefits provided by customer-generators?
 - o **Staff:** Are these environmental and other benefits going to be actual dollars avoided?
 - o **Staff:** In determining the ECR by evaluating the Environmental benefits of energy exported to the grid using meter measurement intervals by month, hour, and separate channel, please explain if this evaluation should consider using different methods to value benefits such as the market value of RECs, cost of carbon, avoided investment cost of environmental controls, etc.
 - o **Staff:** Does the Company have the potential to collect RECs on behalf of the customer-generators? If so, should the Company study how to allocate the environmental benefits to the customer-generators? Through an adjustment of export credits or other methods? What would a cost benefit analysis look like for RECs?

Implementation Issues

Billing Structure

15. Explain how potential customer-generators and on-site generation system installers will have accurate and adequate data and information to make informed choices about the economics of on-site generation systems over the expected life of the system.
- o **Staff:** How does the Company plan to display this information? E.g. pamphlets, public meetings?

Export Credit Expiration

16. Quantify the magnitude, duration, and value of accumulated export credits.

- **Staff:** Will the calculations from the study be based off of actual data?
 - Staff prefers using as much actual data as possible.
- **Staff:** Please explain the financial impact to the Company of the export credits.

17. Explain the need for the credits to expire.

- **Staff:** Please explain how these will be tracked if credits expire? Will these be tracked by day of credit generation, billing cycle, other?
- **Staff:** How will credits based on kWh vs. a dollar value based on avoided cost affect the need for policies regarding credit expiration?
- **Staff:** How will excess credits be handled at end of the expiration period? Will they just expire?
- a. Show how the Company does or does not benefit from the expiration of customer export credits.
 - **Staff:** If the Company collects money from the customer base for the credits awarded and those credits expire before the Company has to pay them, does this constitute a taking?
- b. How will the Company deal expired credits that have been recovered from customers? (Through the PCA or other mechanism) Show how non customer-generators are harmed or benefited from the expiration of customer export credits.
 - i. Quantify, the impact to non-customer-generators of a 2-year, 5-year, and 10-year expiration period.
 - **Staff:** Please show how credits that have been billed for are returned to customers.

Frequency of Export Credit Rate Updates

18. Quantify the impact of biennial updates as compared to annual updates of the ECR.

- **Staff:** What process, case, or mechanism (e.g. IRP, separate case, etc.) will ECR updates be determined? Will there be updates based on a regular schedule or are there specific triggers that could be identified signaling the need for a change in the ECR?