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M E M O R A N D U M

DATE: September 25, 2024

TO: Mayor Arndt and City Councilmembers

FROM: Thomas Loran, Energy Board Chairperson

RE: Platter River Power Authority 2024 Integrated Resource Plan (IRP), Observations And Recommendations

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ENERGY BOARD DUTIES AND FUNCTIONS

This memorandum presents the Fort Collins Energy Board's observations and recommendations regarding the Platte River Power Authority's (PRPA) Integrated Resource Plan (IRP) as presented by its staff on August 8, 2024. This memo is in accordance with our chartered duties and functions, specifically:

(1) To advise the City Council and staff regarding the development and implementation of the Our Climate Future Plan (OCF);

(2) To advise the City Council and staff in developing City policies that encourage the incorporation of energy conservation and efficiency, carbon emissions reduction and renewable energy into the development and provision of City utility services, the design and construction of City transportation projects, and the way in which the City impacts the overall built environment within the community;

(3) To advise the City Council and staff regarding the alignment of energy programs and policies with City, ratepayer and community values and service delivery expectations.

BACKGROUND

At our regular meeting on August 8, 2024, the Fort Collins Energy Board received a presentation detailing PRPA's IRP from Dr. Masood Ahmad (Sr Manager, Resource Planning). Paul Davis (Manager, Distributed Energy Resources) presented a summary of Distributed Energy Resource (DER) integration and Virtual Power Plant (VPP) implementation, which are part of the IRP. Jason Frisbie (General Manager and CEO) also participated in the discussion that accompanied the presentation.

Driving the IRP is a Resource Diversification Policy, which includes the retirement of PRPA's Rawhide Unit 1 (coal fired power generation) with a total of 431 MW capacity. The planned date for

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Rawhide's shut down is 2028 to allow some flexibility as that substantial resource is retired and new capacity is brought online in advance of a firm deadline imposed by the state to retire all coal fired power generation by 2030. This is occurring while electricity demand is forecast to steadily increase, especially summer peak demand driven by increased air conditioning use.

The part of the IRP which has drawn the most focus and controversy is the addition of a new dispatchable natural gas fired turbine to replace the Rawhide Unit. The cost for the new gas fired turbines is approximately $250 million and will contribute to a 7-8%[i] rate increase over a four-year period.

SIGNIFICANT OBSERVATIONS

Addition of Dispatchable Resource

PRPA states that the new gas fired turbines are required to meet the specification of the Southern Power Pool (SPP) RTO West. The IRP is filed with Western Area Power Administration (WAPA). However, it is our understanding that WAPA does not require this replacement of generating capacity. Neither can we find information that the SPP requires additional capacity for a utility to join.

PRPA also asserts that the new gas fired turbine is required to meet peak demand and accommodate the variability inherent in the increased reliance on wind and solar generation. PRPA's IRP considers so-called "dark calm" situations when wind and solar generation is reduced by upwards of 90%. These "dark calm" periods can last several days and be expected to occur bi-annually or more frequently (duration and frequency are inversely related). It is our understanding that the current simple cycle "peaker" turbines can handle short periods as they currently do when dispatched during peak energy demand and when Rawhide is down for annual maintenance. However, it is our understanding that additional capacity is deemed necessary to reliably account for service during peak demand and "dark calm" situations. The IRP specifies that acceptable dispatchable technology must have, "…the ability to provide power for at least one week during dark calms (p.110)."

PRPA maintains that there are currently no viable renewable energy technologies that can cost-effectively meet the area's peak demand and "dark calm" requirements. It is our understanding that a limited number of other utilities are using various energy storage technology and geographical distribution of resources to achieve these goals. However, we recognize that they were not deemed as cost-effective, reliable options when limited to the scenarios developed by consultants chosen for the IRP.

Converting to Greener Fuel Source

PRPA has stated that the contract for the new gas fired turbines includes a provision that mandates the specified aeroderivative turbine be convertible from gas to hydrogen fuel. This transition is very important to the city achieving its climate goals. The IRP considers, "progressively converting to green hydrogen when it is economically available in large quantities (p. 111)." However, the contractual terms of what type of hydrogen will be used and timeframe of this transition are not known. Additionally, it is our understanding that converting to hydrogen will create additional

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challenges, in particular regarding hydrogen transportation and storage. This will come at a significant additional cost, above the initial investment for the new gas turbine, and should be taken into consideration given the four-year rate increase of 7-8% that is already projected.

Achieving Climate Future Goals

PRPA stated during the meeting that the new gas turbines will be "fired up" by the "market" only when less expensive renewable energy alternatives are unable to meet load demand. According to a study by ICF International [ii], the SPP currently has a challenge meeting its reserve margins. This leads us to believe that the gas turbines may be "fired up" more frequently than planned to meet the "shortfall" in other regions of the SPP. If this occurs, the rate payers should benefit from the sale of electricity to the market at a premium price. At the same time, the gas turbines will release air emissions into our local environment and may hamper progress towards achieving the city's climate goals. This makes conversion to hydrogen fuel even more critical.

PRPA claims that they will be securing additional PPAs for renewable energy to meet the area's growing energy demand. This is an important aspect of the IRP and to achieving the city's climate goals. Whereas we question the reliance on PPAs uniquely, we commend the PRPA for its continuous efforts to add more renewable energy to its energy mix and for striving to achieve its 100% renewable energy by 2030.

PRPA Planning Review

PRPA indicated that they utilized at least six third-party consultancies (Black & Veatch, APEX, Dunsky, ACES and Astrape) to conduct studies that informed the IRP. In addition, the IRP document[iii] notes that,

> *Platte River's resource planning staff actively consulted with national institutes and public power councils, including the Electric Power Research Institute (EPRI), National Renewable Energy Laboratory (NREL) and the Large Public Power Council. (p. 45)*

The consultant studies are published by PRPA on their website.[iv] Other than the brief mention in the IRP cited above, we are not aware of any disclosure of the results of third-party review of the IRP to date.

RECOMMENDATIONS

We commend PRPA for the actions they have taken so far. We recognize PRPA is in a very difficult situation being forced to retire a coal-fired steam turbine while expected to continue providing safe, reliable and affordable electricity and simultaneously achieving aggressive climate goals. This is no easy task and there seems to be a lot of misinformation and misunderstanding regarding the need, viable, cost-effective technologies, and final decision-making process.

With this in mind, we provide the following recommendations on behalf of the rate payers for the City Council to consider.

- Verify the requirement for PRPA to add additional capacity to join the market by the SPP.

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- Request more details regarding contractual obligations of the selected vendor to convert the gas turbine to a hydrogen turbine to understand the potential cost to rate payers and impact on Our Climate Future goals.
- Request PRPA provide access to any technical reviews of the IRP by any independent, respected organizations such as the National Renewable Energy Laboratory and make it available to the public.
- Request third-party review(s) of the IRP by the Colorado Public Utility Commission or the National Renewable Energy Laboratory if there are no such reviews provided by PRPA. The third-party review should seek to validate assumptions and provide assurances to rate payers that a new gas fired turbine is necessary and the best alternative to achieve Fort Collins Utility's goals of safe, reliability, and affordable electricity while also achieving the city's climate goals. These results should be published online and made available to rate payers.

As always, the Energy Board is grateful for the opportunity to provide comment and appreciates City Council's consideration.

Respectfully submitted on behalf of the Energy Board,

Signed by:
Thomas Loran
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Thomas Loran
Energy Board Chairperson

cc: Brian Tholl, Energy Board Staff Liaison
Christie Fredrickson, Energy Board Support

[i] According to City of Fort Collins Utilities rate forecast presented to Energy Board on September 12, 2024.
[ii] https://www.icf.com/insights/energy/higher-reserve-margin-southwest-power-pool
[iii] https://www.prpa.org/wp-content/uploads/2023/04/2024-Integrated-Resource-Plan.pdf
[iv] https://www.prpa.org/2024irp/information/