BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Nancy Lange	Chair
Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
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In the Matter of Great River Energy's 2018–2032 Integrated Resource Plan

ISSUE DATE: November 28, 2018

DOCKET NO. ET-2/RP-17-286

ORDER ACCEPTING 2018–2032 RESOURCE PLAN AND SETTING FUTURE FILING REQUIREMENTS

PROCEDURAL HISTORY

On April 28, 2017, Great River Energy (GRE) filed its resource plan for the years 2018–2032, including GRE's preferred plan for meeting its customers' needs throughout this period (2018 Resource Plan).

On September 8, 2017, The Minnesota Department of Commerce (the Department) and the Clean Energy Organizations (CEO), consisting of the Minnesota Center for Environmental Advocacy (MCEA), Fresh Energy, the Sierra Club, and Wind on the Wires[1] filed comments.

On October 12 and 16, 2017, GRE made supplemental filings responding to information requested by the CEO and the Department.

On November 8, 2017, the Department, the CEO, and GRE filed reply comments.

On January 3, 2018, the Department filed revised reply comments, including its revised recommended energy savings goal for this resource plan of 122.2 gigawatt hours (GWh).

On October 25, 2018, the matter came before the Commission.

[1] As of September 11, 2018, Wind on the Wires changed its name to Clean Grid Alliance.

FINDINGS AND CONCLUSIONS

I. Summary of Commission Action

In this order the Commission –

- Accepts GRE's 2018–2032 resource plan;
- Sets the due date and content requirements for the cooperative's next resource plan; and
- Sets content requirements for GRE's future resource plans.

II. Background

A. Resource Planning

A public utility capable of generating 100 megawatts (MW) of electricity and providing electricity to at least 10,000 customers, directly or indirectly, must file a resource plan or report with the Commission.[2]

To reliably provide the electricity demanded by its customers, an electric utility considers both supply and demand. The utility can supply electricity through a combination of generation and power purchases, and by reducing the amount of electricity lost through transmission and distribution. The utility can manage its customers' demand by encouraging customers to conserve electricity or to shift activities requiring electricity to periods when there is less demand on the electric system (load management).

The Commission directs public utilities to file a resource plan, containing a set of supply- and demand-side resource options that the utility could use to meet the forecasted needs of customers.[3]

Resource planning rules also direct a utility to file biennial reports on customers' projected need for electricity and the utility's plans for meeting that need, including the actions the utility will take in the next five years.[4]

The resource planning statute provides for the Commission to approve, reject, or modify a public utility's resource plan, evaluated on its ability to:[5]

- maintain or improve the adequacy and reliability of utility service;
- keep the customers' bills and the utility's rates as low as practicable, given regulatory and other constraints;
- minimize adverse socioeconomic effects and adverse effects upon the environment;

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[2] Minn. Stat. § 216B.2422.

[3] Minn. R. Ch. 7843; See also Minn. Stat. § 216B.2422, subd. 1(d).

[4] Minn. R. Ch. 7843.0300.

[5] Minn. Stat. § 216B.2422, subd. 2.

- enhance the utility's ability to respond to changes in the financial, social, and technological factors affecting its operations; and
- limit the risk of adverse effects on the utility and its customers from financial, social, and technological factors that the utility cannot control.[6]

But the Commission's decision regarding the plan of a cooperative electric association such as GRE is merely advisory.[7]

Ultimately, by integrating the evaluation of supply-side and demand-side resource options – treating each resource as a potential substitute for the others – a utility can find the least-cost plan, subject to other legal requirements and policies.

B. Other Legal Requirements and Policies

1. General Requirements

Among the legal requirements and policies influencing a utility's resource plan are the following:

- Renewable Energy Standard (RES): Minn. Stat. § 216B.1691 generally directs Minnesota utilities to acquire electricity from renewable sources to meet a growing percentage of the electricity demanded by their retail customers (or, in GRE's case, to meet the demand of the retail customers served by GRE's distribution utilities), culminating in meeting 25 percent of retail load by 2025.[8]

- Conservation Goals: Minn. Stat. §§ 216B.2401 and 216B.241 establish a goal of achieving annual energy savings of 1.5 percent of gross annual retail energy sales – though statute also provides the option of reducing this goal to 1.0 percent.[9]

- Greenhouse Gas Regulation: Minn. Stat. § 216H.06 directs the Commission to estimate the cost of complying with future regulation of carbon dioxide (CO_2), a greenhouse gas, and to use this cost for purposes of evaluating resource alternatives. The Commission has approved a range of $5 to $25 per short ton of CO_2 emitted in 2019 and thereafter.[10]

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[6] Minn. R. 7843.0500, subp. 3.

[7] *Id*. and Minn. Stat. § 216B.02, subd. 4.

[8] Minn. Stat. § 216B.1691, subd. 2a.

[9] Minn. Stat. § 216B.241, subd. 1c.

[10] See *In the Matter of Establishing an Estimate of the Costs of Future Carbon Dioxide Regulation on Electricity Generation Under Minnesota Statutes § 216H.06*, Docket No. E-999/CI-07-1199*; In the Matter of Establishing an Update 2016 Estimate of the costs of Future Carbon Dioxide Regulation ion Electricity Generation Under Minn. Stat. § 216H.06*, Docket No. E-999/CI-17-53, Order Establishing 2018 and 2019 Estimate of Future Costs of Carbon Dioxide Regulation Cost (June 11, 2018).

- Environmental Externalities: In addition to the CO_2 regulatory costs noted above, Minn. Stat. § 216B.2422, subd. 3, directs the Commission, "to the extent practicable, [to] quantify and establish a range of environmental costs associated with each method of electricity generation," and to use those costs for purposes of comparing resource alternatives. The Commission has established a low and high cost estimate for a variety of externalities.[11]

2. Requirements in GRE's 2015 – 2029 Resource Plan

In GRE's last resource plan,[12] the Commission required GRE to include the following in this resource plan:

- Provide detailed documentation of its strategies for achieving supply-side energy efficiency savings, the savings these strategies have achieved, and GRE's overall progress toward meeting the goal of saving 1.5 percent of its statewide energy sales to member cooperatives; and
- Discuss the customer composition of its individual member distribution cooperatives and the unique opportunities for conservation that certain customers may provide.

C. Great River Energy Overview

GRE provides electricity at wholesale to 28 cooperatively-owned electric utilities, which in turn serve retail customers throughout Minnesota and western Wisconsin representing about 1.7 million people. Twenty of these utilities contract to purchase from GRE all the electricity required by their customers (all-requirements members). The remaining eight utilities contract to purchase a fixed amount from GRE, and are free to seek additional supplies of electricity from alternate power sources (fixed obligation members).

In 2016 GRE required 11,716,894 megawatt hours (MWh) to meet its customer demands. Its nameplate capacity in 2016 was 39 percent coal, 36 percent natural gas, 8 percent hydroelectric, 14 percent renewables, and 3 percent fuel oil.

GRE holds a capacity surplus in excess of its load requirements and the Midcontinent Independent System Operator's (MISO's) planning reserve margin requirement for the planning period of 2018-2032.[13] GRE calculated and planned its peak load coincident with MISO's

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[11] See *In the Matter of the Investigation into Environmental and Socioeconomic Costs Under Minn. Stat. § 216B.2422, subd. 3*, Docket No. E-999/CI-00-1636 (see annual Notice of Updated Environmental Externality Values); *In the Matter of the Further Investigation into Environmental and Socioeconomic Costs Under Section 216B.2422, subd. 3*, Docket No. E-999/CI- 14-643, Order Updating Environmental Cost Values (January 3, 2018).

[12] *In the Matter of Great River Energy's 2015–2029 Resource Plan*, Docket ET-2/RP-14-813, Order Denying Motion to Compel, Accepting Resource Plan, and Setting Future Filing Requirements (October 26, 2015).

[13] The MISO planning reserve margin is currently 7.8 percent.

summer peak, which lowers GRE's planning requirements. GRE must have adequate resources to meet 90 percent of its MISO coincident peak load requirements plus 7.8 percent planning reserve margin. GRE has projected no capacity needs for the next 15 years. But through capacity expansion modeling, GRE determined that the addition of 600 MW of wind resources would be cost-effective in the 2024 to 2026 period.

GRE's members' energy needs are purchased directly from the market, not from a particular generating plant. The energy that GRE generation resources produce is sold directly into the market, not to a particular customer. Market prices thus have a direct influence on GRE's decisions about generation resources.

GRE's resource portfolio is a mix of coal, refuse-derived fuel, hydroelectric, natural gas, fuel oil, biogas, wind and solar resources. It includes 11 power plants and purchased power from several wind farms and other generating facilities, which is more than 3,300 MW of generation capability.

GRE stated that current low market prices in the area influenced its decision to retire its Stanton Station coal resource by May 1, 2017, and to add natural gas co-firing capability at its Spiritwood Station. GRE plans to decommission and demolish Stanton Station.[14]

GRE stated that it is adding significant renewable resources to its portfolio. GRE installed a 200 kW wind generator at its headquarters in Maple Grove in 2006. GRE signed a new power purchase agreement (PPA) for 300 MW of wind resources in 2020, and an additional 100 MW wind PPA beginning in 2021, bringing its portfolio to 768 MW nameplate capacity by 2021. With the addition of its existing 200 MW agreement with Manitoba Hydro, nearly 30 percent of GRE's energy generation will come from wind and hydro in 2021.

GRE also had 72 kW of solar power through a photovoltaic system at its headquarters in Maple Grove, since 2006. In 2014, GRE installed an additional 250 kW of solar generation at its headquarters. GRE and its members have also signed purchase power agreements for more than five MW of solar generation.

GRE members are also developing distributed energy resources. The cooperative's all-requirements members are entitled to undertake renewable energy development projects on their own, up to a maximum of five percent of their energy requirements.[15]

III. Merits of the Resource Plan

The Department recommended that the Commission accept GRE's 2018–2032 resource plan, but acknowledged that it was not perfect. The Department made a number of suggestions to improve various aspects of the plan for the future, including a requirement that GRE:

[14] At GRE's request, MISO reviewed the proposed retirement and found retirement would not result in violation of applicable reliability criteria.

[15] These can be member-owned facilities or PPAs and can be dedicated to community solar offerings, remain as wholesale renewable resources, or be a combination of the two.

- Make clear both the transmission impacts and the broader societal impacts of any unit retirement scenarios;
- Consider a more systemic approach to modeling, including information that makes clear the type of resource added to each scenario;
- Limit modeling such that the resulting expansion plans are achievable;
- Include some demand-side management (DSM) cost sensitivity analysis; and
- Talk with the Department about the use of levelized savings before filing its next IRP.

The CEO argued that the Commission should reject GRE's resource plan, and order additional modeling, including the retirement of its Coal Creek coal plant within the next year. The CEO asserted that GRE did not provide the Commission with a sufficient record on which to find the 2018 IRP satisfies the public interest factors established in Minnesota rules. The CEO also argued that GRE has failed to comply with the Minnesota Greenhouse Gas goals to reduce emissions.

The CEO generally recommended that GRE be required to supplement the record within the next calendar year to address the retirement of each of the cooperative's coal plants, using capacity expansion modeling and externality costs; provide a better analysis of its energy efficiency potential, as required in its 2014 resource plan; and improve its load and energy forecasts.

A. Planning and Modeling

1. Positions of the Parties

a. Planning

GRE stated that the current plan is similar in many ways to its 2015–2029 resource plan, with improvements to its market analysis and modeling. GRE described its resource plan process as beginning with an evaluation of its last resource plan, development of its Five Year Action Plan, and development of its Preferred Plan. Specifically, GRE employed the following steps in the development of its plan;

- Developed a forecast;
- Identified its supply-side resource need by using a capacity-expansion model;
- Considered a reasonable range of potential supply-side and demand-side resources for meeting those needs;
- Met the requirement of the Commission's order in its 2012 resource plan to allow its capacity expansion model to consider replacement of existing plants;
- Performed risk analyses that considered the impact of RES compliance, environmental costs, varying wholesale market prices and access, fuel prices, and varying the load forecast.

GRE performed econometric energy and demand forecasting to determine the expected high and low growth scenarios used in its capacity expansion model. GRE ran sensitivities on key variables to identify the most robust capacity action plan across a broad range of assumptions.

GRE used these assumptions to develop its Expected Values case.[16] GRE used the Expected Values case as a baseline against which to evaluate the impact of sensitivities, like energy prices and demand growth. GRE then identified its Preferred Plan which it determined to be the most robust against expected sensitivities while still meeting all requirements of its member cooperatives.

GRE's Preferred Plan includes a Five Year Action Plan, in which it would:

- add 300 MW of wind in 2020;
- add 100 MW of wind in 2021;
- continue its energy efficiency and demand response initiatives;
- increase the flexibility of Coal Creek Station's operations; and
- continue to operate all other owned generation units.

GRE's Preferred Plan also adds an additional 600 MW of wind resources beginning in 2029. In addition, the Preferred Plan includes the retirement of one of its three coal plants (Stanton Station), which the cooperative accomplished in 2017.

The Department generally concluded that GRE employed a reasonable planning approach.

b. Modeling

GRE's modeling included identification of the regulatory and legislative requirements to be considered, the development of its assumptions, the Expected Value case, and sensitivities based on feedback from external parties. GRE submitted, compiled, and evaluated rounds of test runs of the Expected Values case and sensitivity cases, and finally identified and evaluated a Preferred Plan.

GRE also updated its modeling runs to add externality costs to the increased DSM savings scenarios. GRE explained that these runs were more expensive than runs where additional DSM measures were considered without externality costs.

The Department worked with GRE to better understand the Cooperative's modeling, The agency made suggestions to improve modeling in future resource plans to add greater transparency and allow for better comparisons of the data evaluated. The Department recommended that for its next resource plan the Commission require GRE to improve its modeling of both demand-side and supply-side resources.

The CEO argued that GRE's modeling process was flawed because, among other things, GRE's modeling of DSM was flawed, and GRE did not model current wind and solar prices.[17]

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[16] GRE developed its Expected Values case using assumptions for all inputs and variables including expected load, penetration of conservation and energy efficiency, distributed energy resources, electric vehicle penetration, and compliance with the state Renewable Energy Standard.

[17] The modeling of a potential Coal Creek retirement is discussed infra at Section IIIC.

The CEO recommended that GRE consider a more systematic approach to modeling and include information that makes clear the type of resource being added in each of the scenarios used. The CEO also recommended that GRE limit its modeling such that the resulting expansion plans are achievable.

2. Commission Action

The Commission concurs with the Department that GRE has generally employed appropriate planning methods in its 2018–2032 resource plan. The Commission also agrees with the parties that GRE should continue to make efforts to improve the modeling conducted to achieve greater transparency and allow a better understanding of the steps taken and steps that need to be taken. To accomplish this, the Commission will require GRE to consider a more systematic approach to modeling and include information that makes clear the type of resource being added in each of the scenarios run.

The Commission will also ask that GRE limit the modeling conducted such that the resulting expansion plans developed are achievable.

B. Forecasting

1. Positions of the Parties

GRE's current demand and energy forecasts were developed using the same methodology as its 2014 resource plan. GRE stated that its current forecasts result in very similar growth rates in energy and demand. GRE has projected a capacity surplus for the duration of the 15-year planning period. GRE performed econometric energy and demand forecasting to determine expected high and low growth scenarios, which GRE input into its capacity expansion model.

GRE used the model to optimize the portfolio and ensure that it met its load and energy requirements. GRE stated it ran sensitivities on key variables to identify the most robust capacity plan across a broad range of assumptions. GRE has projected no capacity needs for the next 15 years. GRE attributes the primary drivers of the demand and energy growth in the forecasts to the increasing numbers of residential customers in the region and a shift from seasonal homes to year-round homes.

The CEO criticized GRE's forecasting methodology on a variety of grounds, concluding that GRE's regression analysis is unreliable as it used insufficient data points, and its energy forecast conflicts with its recent sales history (by giving equal weight to all years instead of focusing on the pattern of more recent years).

The Department reviewed the CEO's concerns, and concluded that the most significant influence on GRE's energy and demand forecasts are weather and economic factors, specifically the rate at which households in the region continue to grow. The Department noted that while GRE's modeling showed that the recession in 2007 and 2008 had an impact on sales, there is no basis to give more recent observations greater weight than older ones.

2. Commission Action

The Commission finds the Department's analysis of GRE's forecast is reasonable, and agrees that the rate of future growth of households in the region will likely have the most significant influence on energy and demand during the planning period. In its next resource plan the Commission will require GRE to include a load forecast that reflects the most current trends in its region influencing electric consumption.

C. Retirement of Coal Resources

Ordering point 5C in GRE's last resource plan required the cooperative to: "Continue to evaluate cost-effective retirement of its coal plants, and include in its coal plant retirement analysis the rate impact of various retirement dates, as well as a discussion of any decommissioning and site remediation costs."

1. Positions of the Parties

GRE stated that it has addressed this requirement by actions taken with respect to its coal-generating power plants. GRE explained that it retired its Stanton Station coal plant in 2017, due to low market prices in MISO which it expects will continue. The cooperative also modified its largest coal power plant, Coal Creek, located near Underwood, North Dakota, for more flexible operations through improved ramping capabilities which allow GRE to better adjust the plant's output in response to market signals. Further, GRE made changes to the fuel mix (natural gas mixed with coal) at its Spiritwood Station, a combined heat and power (CHP) unit located in Jamestown, North Dakota.[18] Finally, GRE stated it negotiated the termination of the cooperative's obligation to purchase 50 percent of the output of the Genoa 3 coal plant in Wisconsin.

GRE explained that it has evaluated possible Coal Creek retirement options, but stated it has no plans at present to retire Coal Creek or Spiritwood due to their valuable position in its generation portfolio. GRE stated that the modeling it conducted[19] shows that it is it is more cost-effective to continue to operate the Coal Creek than to retire it. GRE asserted that Coal Creek is dispatched more than 90 percent of the time in the MISO market, because of its low costs, high reliability, range of operation, and ramping capability. GRE described Coal Creek Station as its largest energy hedge against exposure to MISO market prices.

However, GRE anticipates that the proportion of energy coming from coal will decrease in the future. And based on past experience and the enhancements to operations at Coal Creek, GRE expects emissions to continue to be reduced through its efforts in conservation and energy efficiency.

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[18] Coal Creek Station is a 1,146 megawatt (MW) generating station that went into commercial operation in 1979 and 1980. Spiritwood Station is a 99 MW generating station that went into commercial operation in 2014.

[19] GRE conducted sensitivities testing where it forced the model to retire the Coal Creek station in four different years: 2020, 2024, 2028 and 2030. According to GRE, results of each of the retirement scenarios demonstrated higher costs than when the station does not retire. In addition, GRE reported that the net present value of the revenue requirements is highest and most costly when the plant is forced to retire in 2020.

Finally, GRE justified the continuing operation of Spiritwood, arguing that it is a new plant that only went into commercial operation in 2014; it is more efficient as a CHP facility than a conventional coal plant; and it provides a hedge for energy market prices and natural gas prices.

The CEO argued that Coal Creek Station is not economic to run, and that the rising cost of fuel puts the plant at risk of losing millions of dollars. The CEO asserted that Coal Creek's profits have been going down since at least 2014, and that GRE did not consider realistic replacement resources.

The CEO also asserted that the modeling runs done by GRE did not fairly or realistically evaluate the costs of retirement of Coal Creek. The CEO argued that the modeling in which Coal Creek is retired in 2020 included significant additions of reciprocated internal combustion engine (RICE) units to meet the deficit of capacity created by the retirement. The CEO argued, however, that RICE units are very expensive to build and operate and are typically built only in small quantities to meet peak needs where other resources are not available.

Finally, the CEO argued that the failure of GRE's resource plan to comply with state greenhouse gas reduction goals and reduce emission levels is a major problem with the resource plan. The CEO asserted that GRE has failed to take necessary action to promptly close or sufficiently address the emissions levels resulting from continued reliance on its remaining coal plants. Nor, the CEO argued, did GRE's preferred plan consider externality values and CO_2 regulatory costs of continued operation of the coal plants.

The CEO requested that the Commission again ask GRE to evaluate the cost-effective retirement of each of its coal plants, using an appropriate capacity expansion model, which must include Commission-approved externality costs and carbon dioxide regulatory costs in the analysis.

In response to the CEO, the Department stated that the retirement of Coal Creek would be unreasonable in this resource plan given that GRE would need to add more than an additional 2,000 MW of wind to its system to accommodate the loss. The Department claimed that the addition of this much wind in GRE's five year plan is simply not achievable.

The Department, however, also recommended that GRE consider a more systematic approach to its modeling.[20] The Department met with GRE and made suggestions to improve GRE's modeling in the next resource plan. The Department stated that GRE's current approach, of developing two base cases (with and without externalities and CO_2 internal costs) and running numerous scenarios, makes it difficult to assess if there were scenarios under the Expected Values conditions where retirement of Coal Creek would have been reasonable. The Department advised that to obtain such information GRE should treat a Coal Creek retirement as a scenario and run the various contingencies on that scenario. The Department noted that such an approach is commonly used in the resource plans of other utilities.

[20] GRE has used the System Optimizer Model (SOM) as the capacity expansion modeling software for resource planning purposes. GRE noted that the vendor has stopped updating the platform.

2. Commission Action

The Commission agrees with the CEO and the Department that GRE's next resource plan would benefit greatly from more transparent modeling, which would allow for better comparisons of the various scenarios considered, the runs undertaken, and the data projected. The Commission recognizes GRE's efforts in this resource plan to justify its continued use of Coal Creek and Spiritwood as perhaps economically justified, but the Commission's request in its last resource plan was that GRE more specifically evaluate the cost-effective *retirement* of the two plants for the parties' and the Commission's consideration. While acceleration of retirement, including work to alter operations as a step towards retirement, is valuable, the Commission and the parties need to evaluate what benefits would accrue from the actual retirement of coal operations, including the reduction of carbon and greenhouse gas emissions.

Accordingly, the Commission will again require GRE to evaluate the cost-effective retirement of each of its coal plants, including Coal Creek and Spiritwood, using an appropriate capacity expansion model which must include Commission-approved externality costs and carbon dioxide regulatory costs in its analysis.

D. Supply- and Demand-side Energy Efficiency Goals

Ordering point 4A in GRE's last resource plan required the cooperative to provide "detailed documentation of its strategies for achieving supply-side energy efficiency savings, the savings these strategies have achieved, and GRE's overall progress toward meeting the goal of saving 1.5 percent of its statewide energy sales to member cooperatives."

1. Positions of the Parties

GRE stated that the cooperative and its members will continue to work to achieve total savings and supply-side efficiencies equal to 1.5 percent of total retail energy savings, by continuing energy savings equivalent to 1.0 percent through member-side activities, while obtaining 0.5 percent in supply-side efficiencies throughout GRE and its members' systems. GRE stated that energy savings in the industrial class are expected to grow the most, while energy savings in the residential classes are expected to decline.

GRE stated that its supply-side efficiency programs, such as its Dryfine process, turbine upgrades and variable-frequency drive, have generated at least 0.5 percent of the efficiency goals since 2010. GRE also described its plan to consider a variety of supply-side improvements to its generation fleet over the planning period, including Coal Creek flexible operations, and plant lighting improvements with the change to LED lights. GRE also described the incentive programs for end-users to invest in equipment with greater efficiency.

Finally, GRE described its demand response efforts to modify its load curve during periods of peak demand and to shift end users to off peak electricity use to times when wholesale market prices are at their lowest. These efforts are focused on, *e.g.*, electric storage water heating and electric vehicle charging efforts. GRE also explained that it has recently installed a modern demand response management system, which allows for interconnection with load control technologies, such as smart thermostats and Wi-Fi enabled devices.

The CEO criticized the resource plan's discussion of achieving supply-side energy efficiency, stating that GRE did nothing more than list activities which were nearly the same as the supply-side measures GRE was considering in 2013, and which seem to largely be plant-related modifications. The CEO claimed GRE did nothing more than demonstrate that the sum of supply-side projects the cooperative previously executed have yielded 0.5 percent energy savings.

The CEO also argued that GRE has not demonstrated that its resource plan captures all, nor even the most, cost-effective energy efficiency. The CEO claimed that it detected problems with GRE's approach to energy efficiency savings and DSM, including:

- The level of savings modeled in DSM sensitivities were not transparent;
- All DSM sensitivities were modeled only under the assumption that GRE's long capacity position continues, which shows only a partial picture of the value of increased energy efficiency; and
- Demand response was not modeled at all.

Finally, the CEO argued that GRE's off-peak water program does not provide any near-term progress on environmentally beneficial electrification.

The Department was initially concerned about the lack of clarity regarding GRE's treatment of embedded energy savings in the forecast.

The Department raised several concerns with GRE's energy savings cost assumptions. The Department argued that GRE's proposed Electric Utility Infrastructure (EUI) savings are more expensive than demand side management. The Department also raised concerns about GRE's DSM analysis. The Department and GRE met in September 2017 to discuss possible modifications to the cooperative's future DSM analysis. The Department ultimately recommended that the Commission request GRE to provide the following in future resource plans:

- Talk with the Department about the use of levelized savings of DSM before filing its next IRP;
- Do not include EUI costs and impacts in its DSM scenario analysis;
- Provide narrative summaries and cost and energy savings projections of its EUI projects;
- Include sensitivity cost analysis for each DSM scenario by varying the assumed annual cost increases; and
- Show more clearly how different data sets relate to each other and consider using the workbook provided by the Department.

Finally, the Department initially recommended that the Commission advise GRE to include average annual energy savings of 152.7 GWh in its resource plan. However, based on its analysis of additional information provided by GRE, which estimated that the 152.7 GWh (1.25 percent) energy scenario recommended by the Department would cost $90 million more than the 122.2 GWh (1.0%) DSM scenario, the Department amended its recommendation. For this resource plan, the Department recommended the Commission approve an energy savings goal of 122.2

GWh. And, the Department recommended that GRE continue to motivate its members to exceed past energy savings achievements.

2. Commission Action

The Commission has considered the cooperative's explanation of its energy savings goals and DSM plans. The Commission finds that improvements are needed in both supply- and demand-side resources, and so the Commission will accept the parties' recommendations to advise GRE to take the following actions in its next resource plan:

- procure average annual energy savings of 122,228, 338 kWh (1.00 percent scenario); and
- Include some DSM cost sensitivity analysis, which includes the following:

    - talk with the Department about the use of levelized savings of DSM before filing its next IRP;
    - do not include electric utility infrastructure costs and impacts in its DSM scenario analysis;
    - provide narrative summaries and cost and energy savings projections of its EUI projects;
    - include sensitivity cost analysis for each DSM scenario by varying the assumed annual cost increases; and
    - show more clearly how different data sets relate to each other and consider using the workbook provided by the Department.

IV. Additional Commission Action

A. Plan Acceptance

For the reasons previously stated, the CEO asked the Commission to reject GRE's resource plan. In contrast, GRE and the Department recommended that the Commission accept it.

In reviewing GRE's resource planning, the Commission evaluated the ability of its available resource options and proposed plan as a whole to:

- maintain or improve the adequacy and reliability of utility service;
- keep the customers' bills and the utility's rates as low as practicable, given regulatory and other constraints;
- minimize adverse socioeconomic effects and adverse effects upon the environment;
- enhance the utility's ability to respond to changes in the financial, social, and technological factors affecting its operations; and
- limit the risk of adverse effects on the utility and its customers from financial, social, and technological factors that the utility cannot control.[21]

Regarding the adequacy and reliability of GRE's services, the Commission finds that GRE's resource planning demonstrates that GRE has sufficient energy and capacity–including an

[21] Minn. R. 7843.0500, subp. 3.

adequate reserve margin–to meet its customers' needs throughout the planning period without relying unduly on spot-market purchases.

Regarding the magnitude of customers' bills and GRE's rates, the Commission finds that GRE has adequately employed its capacity expansion modeling to identify and explore least-cost alternatives, given regulatory and other constraints. GRE holds a capacity surplus in excess of its load requirements and MISO's planning reserve margin for the planning period.

Regarding socioeconomic effects upon the environment, the Commission finds that GRE has implemented strategies to fulfill its current obligations under various environmental regulations, including its duty to acquire energy from renewable sources and to promote energy conservation. GRE has short term plans to add 300 MW of wind in 2020 and 100 MW of wind in 2021 In addition, GRE has set aggressive goals for the acquisition of increased renewables with a 50%-by-2030 goal.

And, while cognizant of the CEO's concerns regarding the continued operation of GRE's remaining coal plants, the Commission recognizes the present need to have these resources continue to be available. GRE has taken actions to increase the flexibility of its Coal Creek Station operations, and uses the co-fired natural gas resource at Spiritwood Station only when economic to do so.

Regarding GRE's ability to respond to changes in the financial, social, and technological factors affecting its operations, and the risk of adverse effects from these factors beyond GRE's control, the Commission finds that GRE has acquired a diverse portfolio of resources. These resources include generators of varying sizes, locations, technologies, and fuel types; power purchase agreements of varying terms; and numerous DSM programs. GRE has analyzed its Preferred Plan to see how it would perform under a variety of circumstances. GRE has elected to accelerate depreciation of its two largest coal-powered generators, thereby continuing to reduce its disincentives to retire these plants early.

The Commission continues to recognize that resource planning is iterative. Analyzing future energy needs and preparing to meet them is not a static process; strategies for meeting future needs are always evolving as technologies continue to mature. Certainly each plan inevitably leaves room for improvement in the following plan. With this understanding, and subject to the limits of the Commission's authority over electric cooperatives, the Commission will accept GRE's resource plan.

B. Next Resource Plan Filing Date

Finally, the Commission will set the date by which GRE must file its next resource plan. Under the schedule established by Commission rule,[22] GRE's next resource plan would have been due November 1, 2020. But the Department and GRE discussed an alternative date based on the following factors:

[22] Minn. R. 7843.0300, subp. 2.

- GRE has no foreseeable capacity needs in the next planning period, and that is not likely to change over the next 4 years;
- Beyond capacity resources, GRE has no new resources forecasted to enter its portfolio until the late 2020s in its Preferred Plan, and the only resources coming into its Preferred Plan are renewables;
- GRE has set a goal to increase renewables with its 50 percent by 2030 goal, and has been pursuing and securing renewable energy to meet that goal over the last year; and
- With the proposed Affordable Clean Energy (ACE) rule from the Environmental Protection Agency, the extension will allow GRE to work to understand the impacts of the rule on its portfolio and to adequately reflect that in its future modeling.[23]

The CEO objected to an extension of the due date, citing what it described as the urgent need to push to decarbonize the environment as soon as possible based on the recently-issued Intergovernmental Panel on Climate Change (IPCC) report. The CEO urged the Commission to require GRE's next resource plan by no later than November 1, 2019.

The Commission may vary its rules when (a) enforcement of the rule would impose an excessive burden, (b) varying the rule would not harm the public interest, and (c) varying the rule would not conflict with some other law.

In this case, the Commission finds that a variance is warranted. There can be no dispute that the administrative burdens of preparing and analyzing a resource plan by 2019, as requested by the CEO, would exceed the anticipated benefit. The Commission does not question the need to thoughtfully and carefully address the issues potentially contributing to anticipated climate changes, but the Commission also recognizes the trade-off involved in trying to rush the consideration and analysis of what can be done and how quickly.

Accordingly, the Commission will vary its rules and extend the filing deadline for GRE to file its next resource plan by six months, or no later than April 1, 2021, with the expectation that GRE will engage in full collaboration with the parties and the CEO, by doing more than making presentations, but also by consulting with the parties on what is to be analyzed and how.

ORDER

1. The Commission accepts GRE's 2018-2032 resource plan.

2. GRE shall file its next resource plan no later than April 1, 2021, with the expectation that GRE will engage in full collaboration with the parties and the CEO by more than making presentations, but also by consulting with them on what is to be analyzed and how.

[23] In August 2018, the EPA proposed a new rule (replacing the Clean Power Plan) to reduce greenhouse gas emissions from existing coal-fired electric utility generating units and power plants across the country. The proposal would establish emission guidelines for states to use when developing plans to limit GHGs at their power plants.

3. Advise GRE to procure average annual energy savings of 122,228,338 kWh (1.00 percent scenario).

4. In its next resource plan, GRE shall:

   A. Evaluate the cost-effective retirement of each of its coal plants, including Coal Creek and Spiritwood, using an appropriate capacity expansion model which must include Commission-approved externality costs and carbon dioxide regulatory costs in its analysis.

   B. Provide an analysis that models increased energy efficiency including the costs of both supply and demand side resources.

   C. Produce a load forecast that reflects the most current trends influencing electric consumption; and

   D. Provide a more in-depth discussion of how the distribution members of GRE handle their 5 percent renewable self-supply options.

5. For all future resource plans, GRE shall:

   A. Make clear both the transmission impacts and the broader societal impacts of any unit retirement scenarios;

   B. Consider a more systematic approach to modeling and include information that makes clear the type of resource added in the scenarios;

   C. Limit modeling such that the resulting expansion plans are achievable; and

   D. Include some DSM cost sensitivity analysis, which includes the following:

      - Talk with the Department about the use of levelized savings of DSM before filing its next IRP;
      - Do not include electric utility infrastructure costs and impacts in its DSM scenario analysis;
      - Provide narrative summaries and cost and energy savings projections of its EUI projects;
      - Include sensitivity cost analysis for each DSM scenario by varying the assumed annual cost increases; and

- Show more clearly how different data sets relate to each other and consider using the workbook provided by the Department.

6. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Janet L. Gonzalez for

Daniel P. Wolf
Executive Secretary

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