



City of Grand Island

Tuesday, April 12, 2022

Council Session

Item C-2

Presentation of Electric Utility Integrated Resource Plan

The Utilities Department is a customer of the federal Western Area Power Administration, which requires each customer to submit an Integrated Resource Plan every five years. John Krajewski of JK Energy Consulting will present the IRP he developed for GIUD in accordance with the WAPA requirements.

Staff Contact: Tim Luchsinger

Integrated Resource Plan

Grand Island Utilities
April 12, 2022

Presented by:
John A. Krajewski, P.E.



Purpose

- Develop Integrated Resource Plan (IRP) consistent with the requirements of Western Area Power Administration (Western) Energy Planning and Management Program (EPAMP)
 - Western allocation is one of GIUD's lowest cost resources
 - Compliance with EPAMP is condition of maintaining Western allocation
 - Must submit IRP every five years



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Integrated Resource Plan (IRP)

- A planning process that evaluates the full range of alternatives to provide adequate and reliable service to electric consumers
 - New generating capacity
 - Power purchases
 - Energy conservation, efficiency and other demand side measures (DSM)
 - Renewable energy resources



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Required Elements of IRP from EPAMP

- Identification and comparison of all practicable energy efficiency and energy supply resource options
- Action plan with timing set by GIUD
- Minimize adverse environmental effects of new resource acquisitions



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Required Elements of IRP from EPAMP

- Provide opportunity for full public participation
- Conduct load forecasting
- Include brief description of measurement strategies for options identified in IRP to determine whether objectives are being met



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Approach

- Prepared GIUD's peak demand and energy requirements forecast
- Compared forecasted peak demand and energy requirements to existing power supply resources to estimate future resource needs
- Identified potential DSM measures and assessed economic and technical feasibility



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Approach

- Integrated DSM options with supply resources to develop preferred plan
- Considered environmental impacts and costs for each IRP option
- Solicit public participation and incorporate comments into the IRP
- Meets all requirements of EPAMP



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Planning Objectives

- Provide reliable service to customers at low rates
- Focus on continued growth and development
- Ensure low-cost energy available to mitigate risks, such as February 2021 winter weather event
- Maintain rates that are competitive with neighboring utilities
- Maintain financial and rate stability
- Encourage energy efficiency programs



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Supply-Side Resource Evaluation

- GIUD has sufficient resources to meet its capacity and energy needs for the foreseeable future
 - Adequate local capacity during transmission outages
- Selling excess capacity may be beneficial and provide additional revenues to GIUD
- Engineering and economic assessments have identified technical or economic needs between IRPs
 - Retirement of Burdick steam units



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Demand Side Management

- Several programs were considered in the past and in this study
 - GIUD has low costs and surplus capacity
 - DSM programs not cost effective in the past or in this study
- GIUD in process of converting street lighting inventory from high-pressure sodium to LED fixtures
 - Energy savings, decreased capital cost and long lifespan make this conversion economical



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Demand Side Management

- GIUD undertaking the implementation of replacing its Customer Information System (CIS)
 - New system will integrate GIUD's Advanced Metering Infrastructure (AMI) system
- GIUD also looking to add a Meter Data Management system
 - Platform will allow customers real-time information regarding usage



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Demand Side Recommendations

- Complete the LED street lighting conversion project
- Continue promoting energy efficiency via website and customer newsletters
- Replace the CIS system and implement a new Meter Data Management system



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Supply/Demand Side Resource Integration

- Maintain existing generating capacity
- Consider short-term sales of excess capacity
- Complete LED street lighting conversion
- Continue offering low-cost energy efficiency information via website
- Replace the CIS system and implement new Meter Data Management system



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Environmental Impacts

- GIUD complies with state and federal environmental regulations at its facilities
- New projects would include emissions control technology as required to help reduce environmental impacts
- Demand side management through no cost or low-cost methods helps reduce energy usage and emissions



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Two-Year Action Plan

- Maintain existing generating capacity
- Consider short-term sales of excess capacity
- Consider changes in resources, such as additional renewable energy purchases
- Complete LED street lighting conversion
- Continue providing energy information via website
- Implement the planned CIS and Meter Data Management system



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Five-Year Action Plan

- Continue two-year action plan
- Assess economic and technical feasibility of implementing time-of-day rates or other retail rate incentives with the new CIS system



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Public Process

- This presentation and public hearing is designed to solicit public input
- Provide information and gather input from groups and individuals with an interest in Grand Island's IRP
- GIUD will continue to solicit public participation as it implements the IRP



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Contact Information

John Krajewski
JK Energy Consulting, LLC
74408 Road 433
Smithfield, Nebraska 68976
Phone: 402-440-0227
Email: jk@jkenergyconsulting.com



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