2024 Integrated Resource Plan
IRP Summary

Our Priorities

Reliability
Providing industry leading performance

Affordability
Delivering power at competitively low rates

Sustainability
Managing our resources wisely

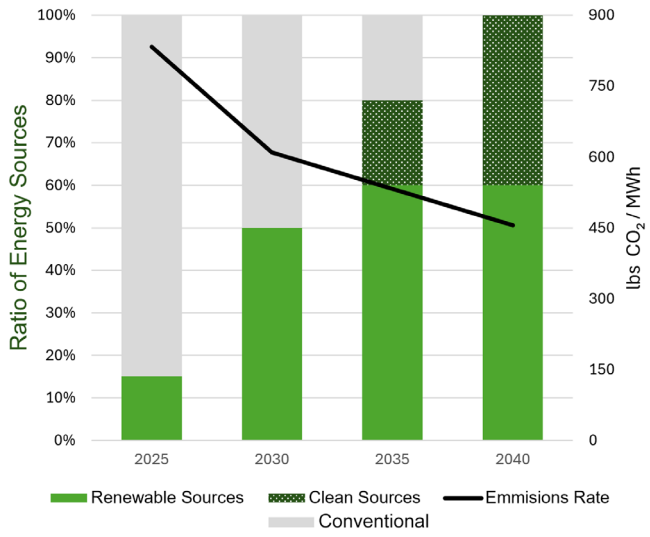
What is an Integrated Resource Plan (IRP)?

An IRP is a planning tool that identifies the best combination of resources to meet a utility's forecasted energy and demand requirements while balancing the needs of its customers.

What was special about this IRP?

IRP's are built around variables that represent many possible futures. The 2024 IRP specifically assessed pathways to compliance with Holland's Community Energy Plan (CEP) as well as the State of Michigan's Renewable Energy Standard (RES) and Clean Energy Standard (CES) amidst significant load growth, changing market conditions, and technological advancements.

Compliance Targets



This graph shows the targets defined by Michigan's renewable and clean energy standard as well as the emissions rate reduction necessary to achieve the goals of the Community Energy Plan.

New Resource Options

A variety of energy resources and ownership models were considered to address forecasted load growth and retirement of existing assets in HBPW's portfolio. Screening for commercial availability, market maturity, and compliance with clean energy legislation narrowed the IRP model's new resource options to the following technologies:

RENEWABLE
- Solar
- Wind
- Battery*

CLEAN
- Nuclear
- Natural Gas w/ CCS**

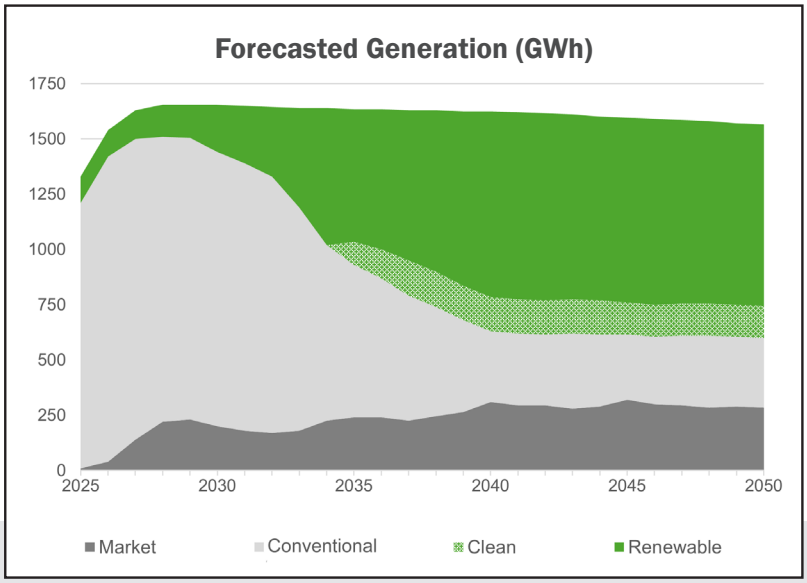
CONVENTIONAL
- Natural Gas
- Market Energy

*RES/CES classification dependent on energy source used to charge battery. **CCS = Carbon Capture and Sequestration.

IRP Results

Generation Forecast

To meet near-term demand growth and comply with Michigan's new clean energy legislation, the IRP recommended significant additions of wind and solar to the utility's electric portfolio in the coming decades. The intermittent nature of renewable resources will require the utility to build resources with an overall capacity well beyond forecasted peak demand to achieve RES and CES targets and ensure that energy is always available when it is needed.



The Forcasted Generation Graph shows our community's forecasted generation needs in gigawatt hours (GWh).

- **Market energy** is purchased from non-BPW resources. Conventional sources refer to natural gas or coal.
- **Clean energy** refers to sources that emit little or no carbon.
- **Renewable resources** of energy are those that are naturally replenished and emit little or no carbon.

Sensitivities

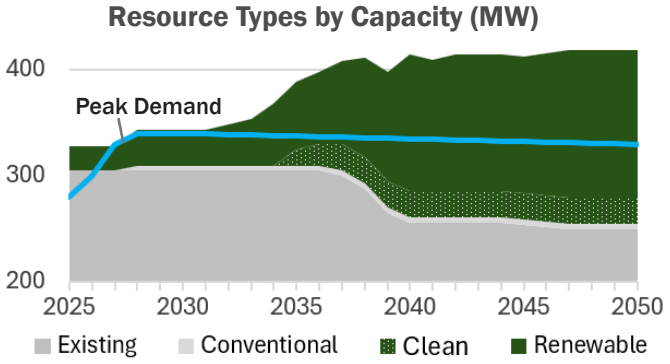
In addition to the IRP's baseline assumptions, further analyses were conducted to explore the impact of changes to key variables in the model. These sensitivities helped HBPW to understand cost and strategy implications for compliance with Michigan's clean energy legislation, variable load growth, new tariffs and/or loss of Inflation reduction Act (IRA) tax incentives, and lack of resource availability in the market that would require new assets to be built and owned by the utility directly.

Scenario	Total Cost	Resource Additions		
		Renewable	Clean	Conventional
CEP w/o RES or CES	▼	▼	▼	▲
High Load Growth	▲	▲	▼	▲
Low Load Growth	▲	▲	▼	=
Tariffs & loss of IRA Incentives	▲	▼	▲	=
Limited Resource Availability	=	▲	▼	▼

This chart indicates the impact of each sensitivity on baseline assumptions. Arrow direction and sizes represent the expected increase or decrease in cost and resource additions.

Resource Types

Holland Energy Park and the 48th St. Peaking Facility will continue to serve as critical resources, maintaining reliability when wind and solar assets aren't producing power. New dispatchable technologies including natural gas generation with carbon capture and sequestration or battery storage were also advised to supplement renewables and ensure a well-balanced portfolio.



This graph reveals the mix of resources that the IRP recommended adding to BPW's existing portfolio to meet future energy and demand needs.

Next Steps

- **Evaluate** near term opportunities to expand HBPW's portfolio with resources that were identified across all IRP scenarios including solar, wind, natural gas, and battery.
- **Use** our findings to support the Strategic Development Team's cyclical review of the CEP.
- **Continue** to provide our customers with opportunities to join us in our efforts through the elective renewable energy rate, energy efficiency programs, and educational opportunities.
- **Revisit** the IRP process in 3-5 years to measure performance and adapt to changing conditions.

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