LANSING BWL

Hometown People. Hometown Power.SM

INTERGRATED RESOURCE PLANNNG UPDATE

Committee of the COW
June 30, 2020

Skipping to…..

- BWL will meet Customer energy needs
- Customer interest, perspectives and backgrounds are diverse
- Industry and technological changes are rapidly evolving
- BWL’s clean energy journey is ahead of the curve
- 2030 goal of increasing the BWL's clean energy to 50%
- Carbon Neutrality is the BWL’s future

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AGENDA

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OVERVIEW

Brief recap of the purpose, process and perspectives

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SIGNIFICANT QUESTIONS

Major considerations

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PATH FORWARD

Recommendations for the BWL's Future

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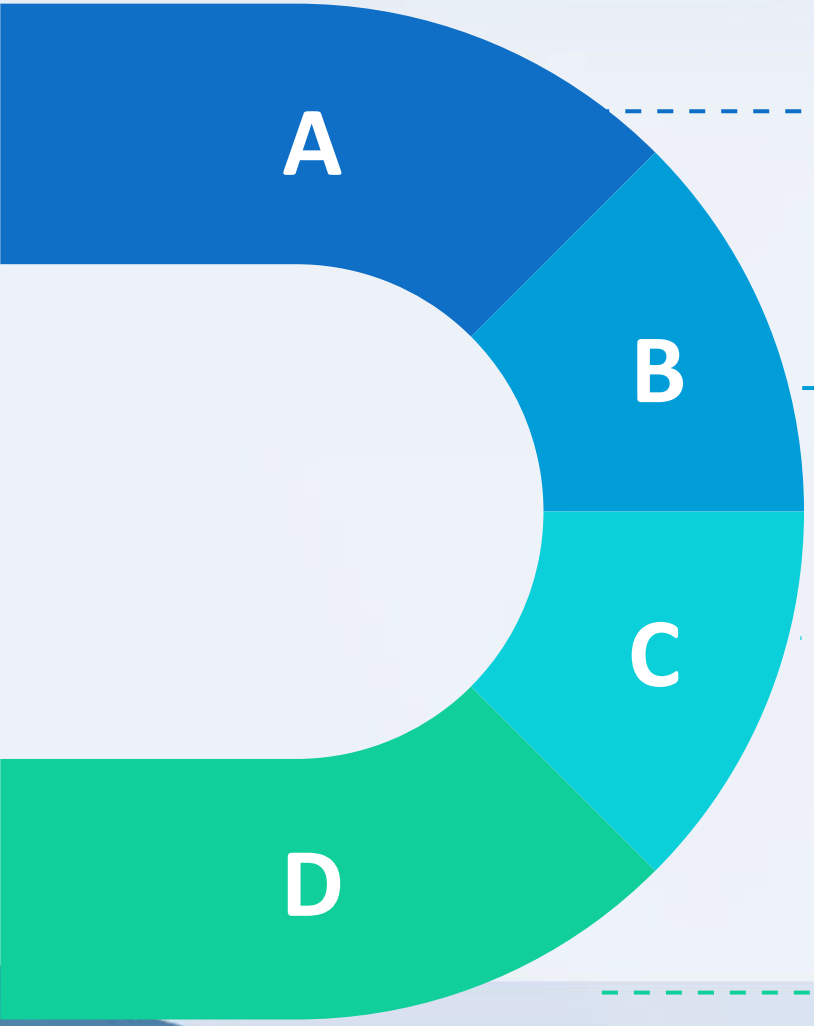
NEXT STEPS

Milestone decisions ahead

OVERVIEW

Purpose, Process & Perspectives



Purpose of an Integrated Resource Plan (IRP)

Meeting the energy needs of customers in a manner that is affordable, reliable and environmentally responsible

IRP Process

Stakeholder engagement, industry research, modeling, public open house

Make-up of BWL Customer Base

Residential and commercial customers, located within the Lansing Community, diversity of backgrounds, income, and interest

Perspectives

Forecast of future needs, technology and industry changes, increased need for climate response strategies

IRP STAKEHOLDER ENGAGEMENT

2019 Spring thru Fall

One-on-one meetings with various organizations within the Lansing Community

Winter 2019

A third-party survey firm randomly polled 400 residential customers and 300 business customers on a variety of topics related to the IRP planning goals. Customers opined priorities related to clean energy, reliability, and affordability.

Fall 2019

Five public meetings at locations throughout the service territory

Spring 2019 to date

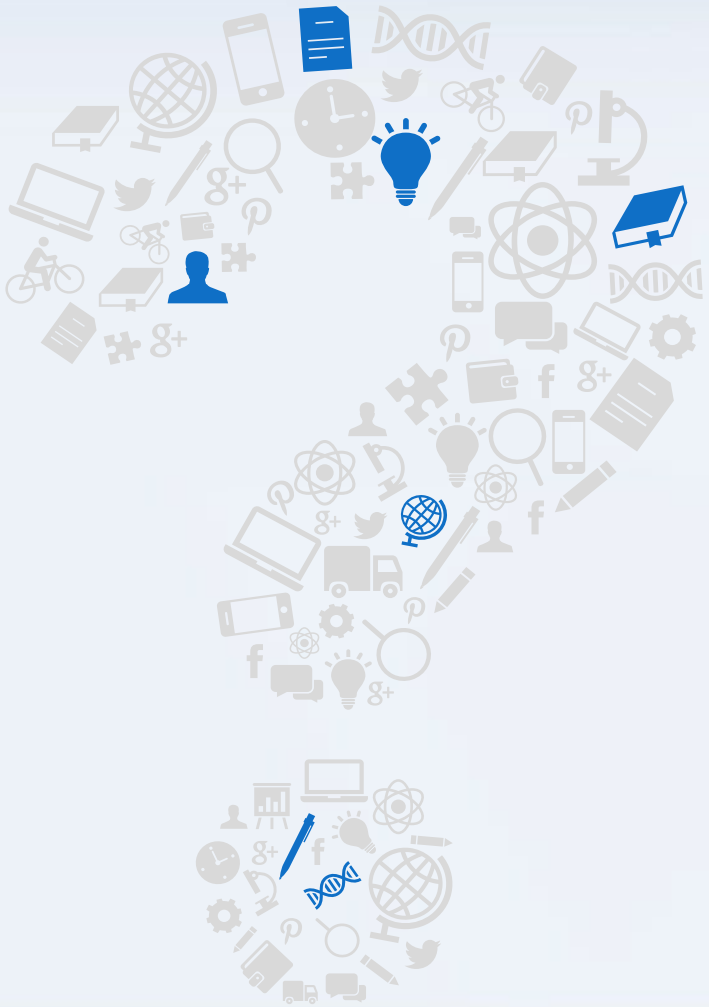
Social media, email and web links informing community of opportunities to participate and provide input

Current

We continue to receive feedback and information via online communications from member of the public on various webinars and learning opportunities.

SIGNIFICANT QUESTIONS

Major Considerations



CUSTOMER INTEREST

How can the BWL address increased customer interest in renewables & climate?

BENEFICIAL ELECTRIFICATION

What is the impact of Electric Transportation and space conditioning?

ENERGY WASTE REDUCTION

What are the BWL's energy waste reduction opportunities?

CLIMATE

How should the BWL address environmental impacts?

AFFORDABILITY

How should the BWL take advantage of the increased affordability of cleaner power?

TECHNOLOGY

What will be the impact of Technology, especially on the utility business model?

BALANCING PERSPECTIVES

Financial

- Net Present Value
- Rate Impact
- Financial Risk

Operational Flexibility

- Percentage of Dispatchable Generation to Total Generation
- Generation Diversity

Environmental

- CO_2 Emissions Reduction
- No_x Emissions Reduction
- SO_2 Emissions Reduction

CLEAN ENERGY & CARBON

How the BWL compares to its competitors – Before recommendations

2022

25% Renewable Energy

Eliminate Lansing Coal/ 80% Carbon Reduction

2025

Goal: 25% Renewable

2025

2030

Goal: 40% Carbon Reduction & 30% Renewable

Goal: Eliminate Coal 90% Carbon Reduction - 22% EE, 12% Storage, 56% Renewable

,

2040

2050

Goal: Net Zero Carbon

PATH FORWARD

Recommendations for BWL

Coal Free Lansing

A pivotal step to reduce carbon emissions involves replacing coal-based generation with cleaner and affordable solutions

Continuing the Clean Energy Journey

To join the many pioneers that have adopted clean energy goals, increasing incrementally our clean energy goal to 50% by 2030 will allow us to make progress as we transition to an evolved climate response strategy

Carbon Neutrality

This will eventually lead to the goal for 100% carbon reduction as technology such as battery storage become economically viable

50% Clean Energy Strategy

Current Strategy (Base)

- Current plan 30% clean energy in 2020, 40% in 2030, Erickson retirement 2025, 1% energy waste reduction, all other options optimized
- 2030 resource mix relies on battery storage and demand response programs

Recommended Strategy (3.0)

- 30% clean energy in 2020, 50% in 2030, Erickson retirement 2025, 1% energy waste reduction, all other options optimized
- 2030 resource mix relies on projected and increased solar investment opportunities
- Solar investments with a behind the meter and customer off-take strategy
- Technology enhancements of storage and demand response programs would be upswing

METRIC IMPACT

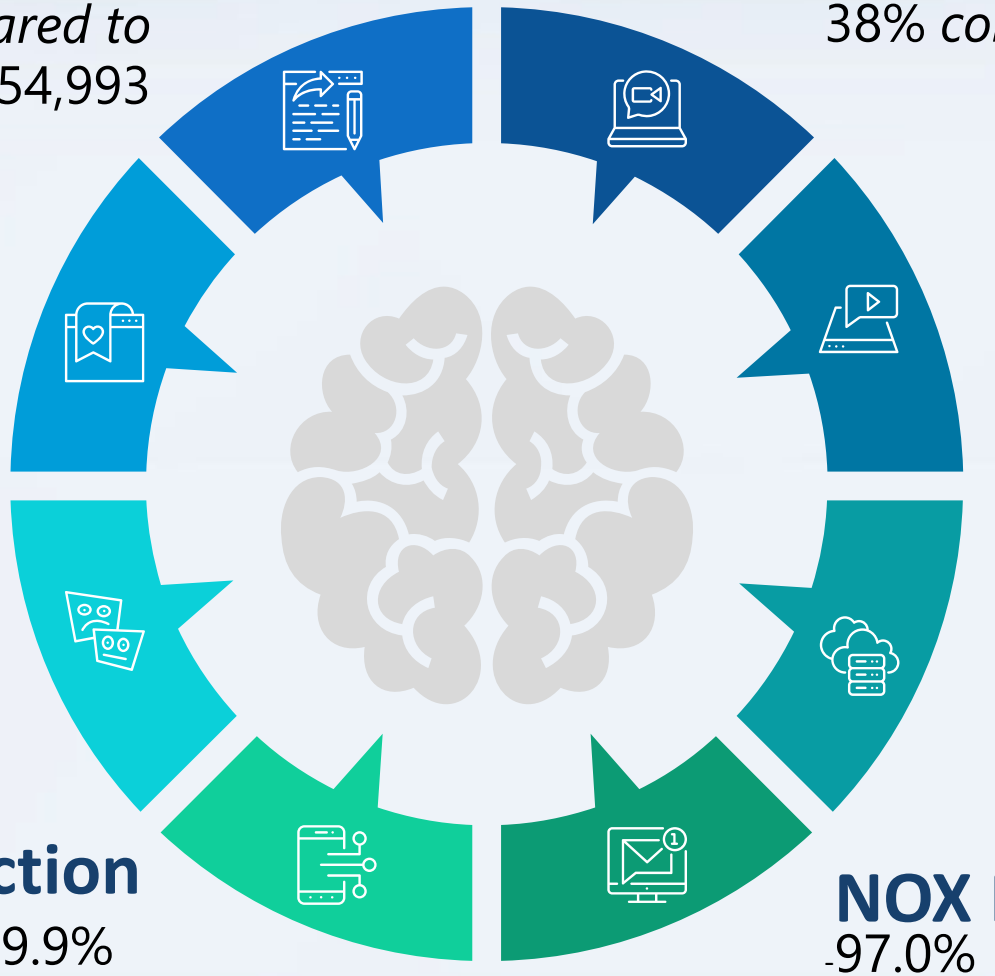
50% Clean Energy Compared to current Clean Energy Goal

Net Present Value

$1,466,070,688 *compared to* $1,468,954,993

Operational Flexibility

38% *compared to* 56%**



Rate Impact

$49.46 *compared to* $49.55

Generation Diversity

0.537 *compared to* 0.526

Financial Risk

$289,347,912 *compared to* $295,795,481

CO2 Reduction

-83.0% *compared to* -81%

SO2 Reduction

-99.9%

NOX Reduction

-97.0%

BALANCED JOURNEY

2018

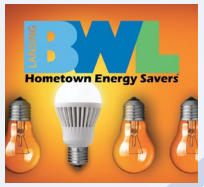
- Announced that it will be the 1st Major utility to retire its coal fired power plants by 2025

2016

- Established future clean energy goals of 30% by 2020 & 40% by 2030

2010

- Adopted net metering programs providing incentives for customers installing renewable energy options



2007

- Adopted Michigan's first renewable energy standard with plans for energy efficiency

GreenWise
RENEWABLE ENERGY PURCHASE PROGRAM

2001

- Offer customers opportunity to invest in renewable energy options

BALANCED JOURNEY

2007

- BWL contracted for 12MW of landfill gas energy

2008

- BWL constructed Cedar Street solar array (Michigan's largest at the time)

2014

- 2014 BWL contracted for approximately 20 MW of wind energy and expanded its Cedar Street Solar array to 150KW

2015

- BWL led development of 300KW community solar project allowing customers to directly invest

BALANCED JOURNEY

2016

- BWL contracted for 24 MW of solar in Delta Twp., the state's largest tracking solar array

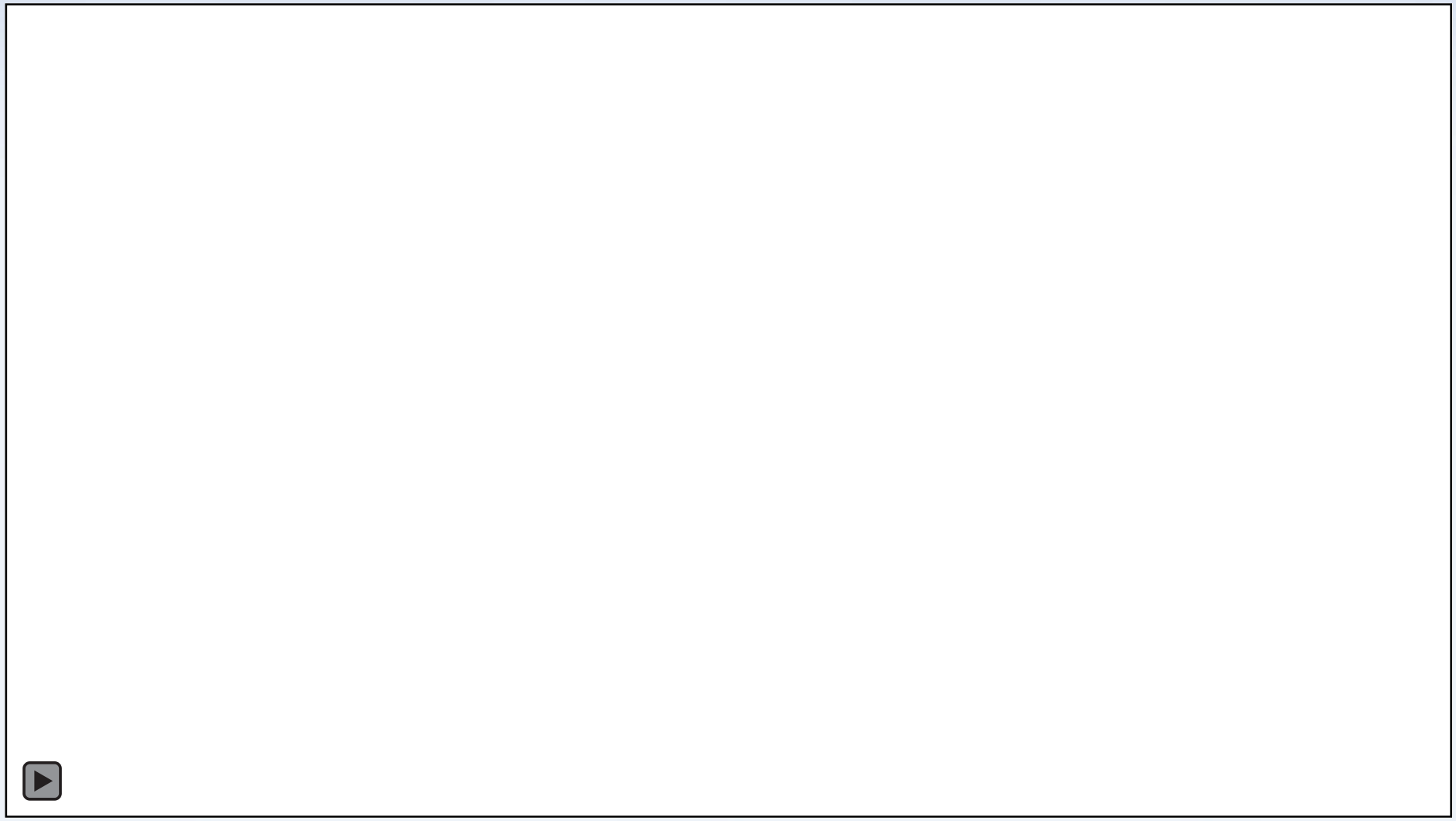
2017

- BWL contracted for an additional 10 MW of solar in Calhoun County and 80 MW in Shiawassee County

2018 & 2019

- BWL contracted for 89 MW of wind in Tuscola County (Which was subsequently renegotiated to 68 MW in 2020)

WHAT IS CARBON NEUTRALITY?



CARBON NEUTRALITY

Net Zero

- Accomplishing a net zero carbon footprint, either generation related or other company wide actions

Renewable Electric Resources

- Increasing renewable generation as a global solution
- Although technology will eventually increase reliability of renewable solution, Carbon Neutrality strategy is an integrated approach

Beyond Generation

- Mitigate or offset the remaining emissions
- Participate in a program like cap and trade
- Undertake programs that absorb carbon from the atmosphere
- Further develop Energy Waste Reduction programs to reduce customer electrical consumption

GROWING COMMITMENT

US States,
65 Countries,
And Over 100 Cities

Corporations

- Microsoft
- Google
- General Motors
- IBM
- Facebook
- Apple
- Amazon

Investor-owned and Municipal Utilities

- Consumer's Energy
- DTE Energy
- Austin Energy
- Eversource
- Seattle City Light
- Madison Gas & Electric
- PSEG
- Xcel
- Duke Energy
- Dominion
- NRG

STEPS TO CARBON NEUTRALITY

Define and Measure

Company-wide assessment that extends beyond electric generation

Target and Plan

Determine cost effective reductions that can be realized by clean energy goals, emerging technologies, and external investments such as transportation and vegetation management

Implement and Monitor

Implement a plan that is designed to reach targets of carbon neutrality and monitor the effectiveness of the plan

NEXT STEPS

Evaluate BWL Coal Portfolio

Prioritize exiting coal-based generation sooner

Carbon Reduction Targets in Strategic Plan

Climate response strategy

Develop Carbon Reduction & Offset Program

Industry contains programs and consultants that aid in measured impact

Reflect Goals in Scorecard

Sustainability balances affordability, reliability and climate responsibility

NEXT STEPS CONT….

Evolve Business Model

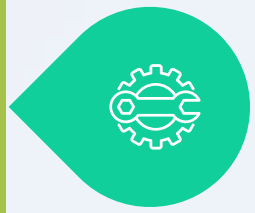
Continue to research industry changes and opportunity for the BWL to evolve its business model and customer experience

Belle River

Monitor the status of DTE's Belle River and update modeling accordingly

Grid Modernization and Resilience

Integrate T&D planning to traditional generation planning



Evaluate Transmission

Review transmission configuration in the MISO market

RECAP

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