

# The Lansing Board of Water & Light



## Delta Energy Park: The “Project”

# Project Overview

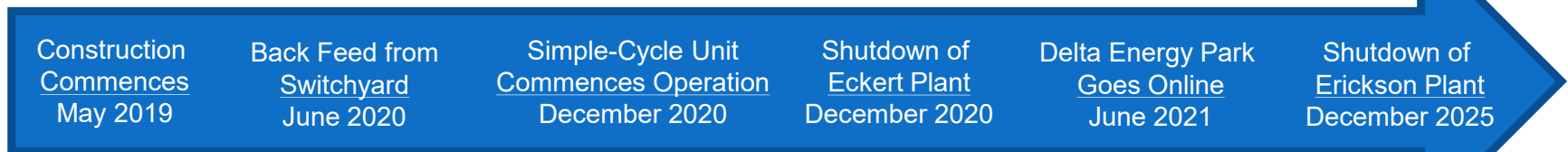
- **Natural-gas-fired, combined-cycle generating facility**
  - Three combustion turbines, each rated at 55 MW
    - Siemens Energy SGT-800
  - One steam turbine generator rated at 85 MW
  - Auxiliary equipment and systems: Heat recovery, air inlet filtering, closed-cycle cooling, exhaust stack, distributed control system, emission controls, noise controls
- **Commercial Operation Expected:** June 9, 2021
- **Location:** Delta Township, Michigan
  - Adjacent to BWL's existing Erickson Power Station
  - Approximately 8 miles west-southwest of BWL's REO Headquarters
  - 90 acres of land with access/utilities easements
- **Total Capacity:** Nominally-rated at 250 MW
- **A combination of proven technology and modern efficiency**

# Project Overview

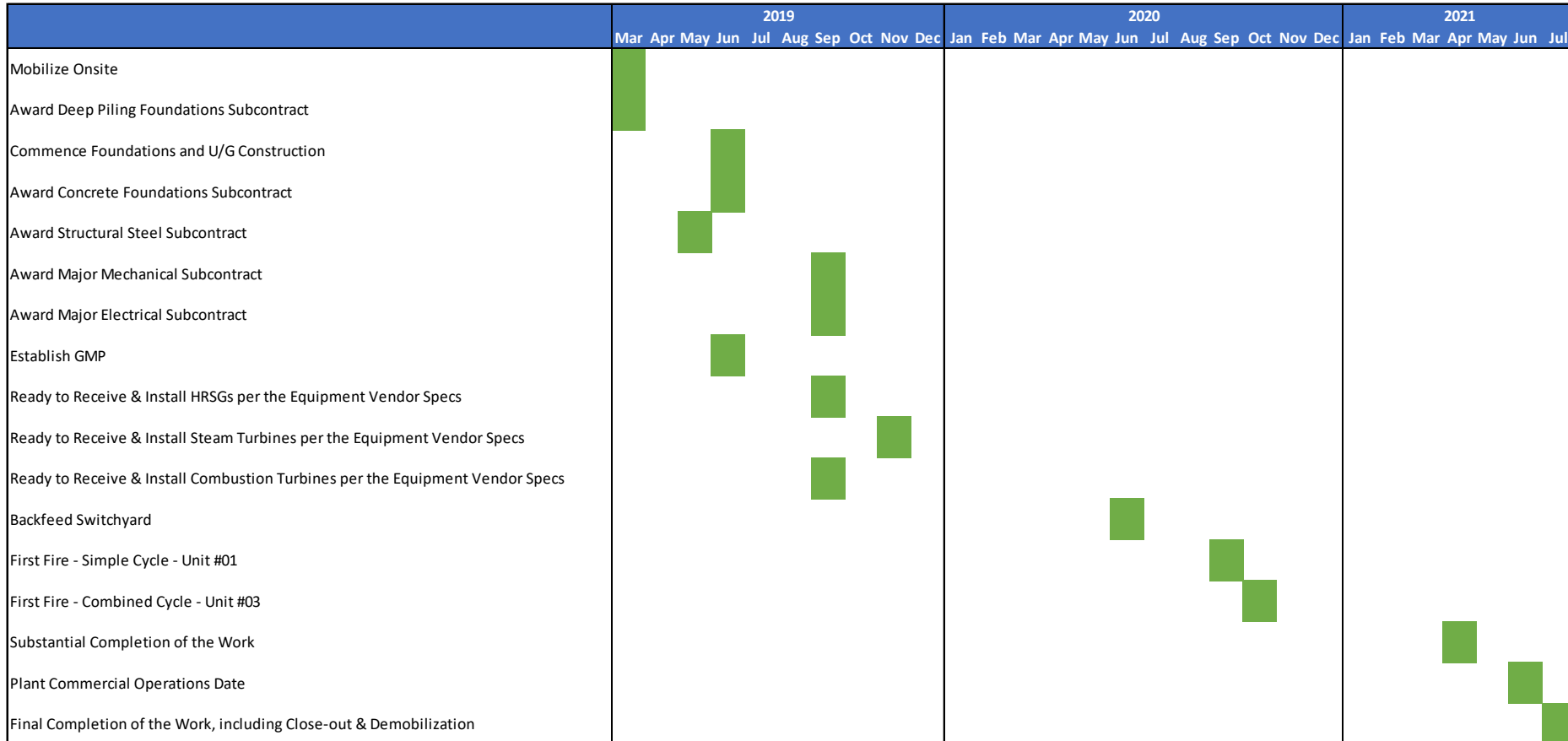
- **Advantages of switching to natural gas**
  - Greenhouse gas emissions approximately fifty percent (50%) lower than coal
  - Diversified fuel sources reduce coal dependence
  - Ability to replace both of BWL's existing coal plants (Eckert and Erickson)
  - Puts BWL on target to meet its goal of reducing greenhouse gas emissions by twenty percent (20%) between 2005 and 2020
    - More ambitious than the seventeen percent (17%) reduction required by the EPA's Clean Power Plan
- **Heat rate estimates demonstrate improved efficiency**
  - Simple cycle: 8,555 LHV
  - Combined-cycle average: 6,310 LHV



## Project Timeline



# Project Milestones



# Key Contractors

Delta Energy Park Project

Owner's Representative

Owner's Engineer

Design Engineering

Transmission Line Contractor

Construction Manager



- Hired November 2016
- Provides comprehensive management and coordination of all construction project activities
- Project experience
  - BWL Cogeneration Plant
  - MSU T.B. Simon Power Plant
  - Genesee Power Station
  - Belle River Power Station



- Hired February 2017
- Designed over 150 combustion turbine, combined-cycle and cogen units since 1957
- Project experience
  - City of Tallahassee Hopkins Station
  - RICE Energy Center
  - Westside Energy Station (MN)
  - Hillabee Energy Center Combined Cycle



- Hired November 2018
- Leading engineering and design firm with a track record of over 100 years
- Project experience
  - Plum Power
  - Shepard Energy Centre
  - Grand River Energy Center



- Contracted December 2018 for installation of natural gas transmission line



- Hired January 2019
- *Lansing Power Constructors*, a joint venture between Barton Malow and Clark Construction
- Project experience
  - Calpine Otay Mesa
  - Holland Energy Park
  - Canyon Power Project
  - St. Clair Compressor Station

# Major Hardware & Warranties

| Component   | Manufacturer                        | Warranty  |
|---|-------------------------------------|---|
| Three Combustion Turbine Generators                               | Siemens Energy                      | The earlier to occur of (a) four years after delivery of the last major component of Goods or (b) for a period of two years after the date Equipment Performance Tests (or equivalent) are completed after the Goods furnished under this Contract are installed, subject to actual completion occurring within 180 days of the scheduled completion date |
| One Plant Control System  | Siemens Energy                      | Three years after completion of delivery of the Goods or for a period of two years after the Equipment Performance Completion date, or equivalent, in which the Goods furnished under this Contract are installed, whichever is the later to occur, subject to actual completion occurring within 180 days of the scheduled completion date               |
| Two Heat Recovery Steam Generators                                | Vogt Power International            | One year after the Project facilities' Commercial Operations Date or thirty-six months after delivery of the last major component of goods, whichever occurs first  |
| Two Generator Step-Up Transformers                                | Pennsylvania Transformer Technology | The lesser of sixty months from erection or sixty-six months from date of shipment  |
| Three Condensate Pumps and Four Feedwater Pumps                   | Torishima Pump Manufacturing        | Three years after delivery or for a period of one year after the Project facilities' commercial operations date or equivalent in which the Goods furnished under this Contract are installed, whichever is the later to occur. All warranty obligations of the Seller shall cease to exist four years from date of delivery of the Goods                  |
| One Steam Turbine Generator with Wet Cooling Tower Heat Rejection | Doosan Skoda Power                  | One year after the Equipment Performance Completion or thirty-six months after delivery of the last major component of Goods, whichever occurs first  |

# Transmission, Distribution, Interconnection & Permits

- **Permits:** BWL has already obtained all major approvals applicable to early construction
  - MI EGLE\* Permits
    - Air Permit to Install—Issued December 2018
    - Wetlands Permit—Issued March 2019
    - Soil Erosion and Sedimentation Control Permit—Issued March 2019
  - Pipeline Agreement—Completed December 2018
  - Delta Township Permits
    - Special Land Use—Issued March 2019
    - Site & Grading—Issued May 2019
- **Switchyard:** Two-phase commission
  - Phase one:
    - Connect the new substation to the existing Wise Road transmission line. The line currently connects substations at the Erickson Plant and Wise Road
    - Connect a tie line jumper from the new substation to the existing Erickson substation. This connects the Erickson substation to the Davis, Canal and Willow substations via the new substation and the existing Wise Road line
  - Phase two:
    - Connect the new substation to the Davis transmission line. This will replace an existing connection between the Erickson Plant and the Davis substation
    - Connect a second tie line jumper from the new substation to the existing Erickson substation. This results in four feeds to each substation

\* As of April 22<sup>nd</sup>, 2019, the State of Michigan entity formerly known as the Department of Environmental Quality (DEQ) was reorganized as the Department of Environment, Great Lakes, and Energy (EGLE)

# Risk Management & Other Factors

- **BWL's Energy and Risk Management Program was implemented in 2013**
  - The program is reviewed and updated annually, with the most recently approved revision dated September 2018
- **BWL's primary objectives for energy risk management and power sales are to:**
  - Secure power supply that is adequate to meet expected retail load while maintaining sufficient reserves and minimizing cost
  - Minimize the risk of wholesale price volatility to better manage costs and budgeting
  - Optimize BWL resources and assets through wholesale transactions that minimize cost to retail ratepayers
  - Minimize the risk of high energy input costs (i.e. coal and natural gas purchases) for retail power and steam load customers through contract pricing protection
  - Minimize BWL's operational and financial exposure to counterparty default by performing financial analysis on current and prospective partners for energy transactions
- **Operational integration of Delta Energy Park**
  - The combined-cycle portion of the plant will operate continually during the week and as economically needed during the weekend
- **Role within the region**
  - BWL will register the new power plant as a behind-the-meter resource in the MISO market
  - BWL plans to dispatch the unit economically—against its own load requirements and within the MISO market
- **Staffing Expectations**
  - The Delta Energy Park facility will utilize 20 full-time BWL employees



# Delta Energy Park Project: Conclusion

**Decision to build Delta Energy Park is the result of**

- Environmental awareness
- Community input
- Market forces
- Prudent planning

**BWL has already implemented**

- A team of internal and external experts experienced in managing successful natural gas generation projects
- All major contracts with necessary performance guarantees, warranties, and insurance measures
  - Natural gas, gas pipeline, construction, and generation components
- Risk management processes, procedures and updates

**BWL expects Delta Energy Park to be**

- Exceptionally efficient
- The next step in reducing environmental impact
- A long-term source of baseload power supply
- The best fit for BWL's financial future

# Delta Energy Park Project: Disclaimer

**This presentation contains “forward-looking statements.”**

Forward-looking statements include all statements that do not relate solely to historical or current fact, and can be identified by use of words like “may,” “believe,” “will,” “expect,” “project,” “estimate,” “anticipate,” “plan” or “continue.” These forward-looking statements are based on the BWL’s current plans and expectations and are subject to a number of known and unknown uncertainties and risks, many of which are beyond the BWL’s control, that could significantly affect current plans and expectations and the BWL’s future financial position and results of operations. These factors include, but are not limited to, (i) changes in economic and fiscal conditions, and (ii) the outcome of pending and any future litigation. As a consequence, current plans, anticipated actions and future financial position and results of operations may differ from those expressed in any forward-looking statements made by or on behalf of the BWL. All forward-looking statements are expressly qualified by the cautionary statements contained in this paragraph. Neither the BWL nor the City of Lansing undertakes any duty to update forward-looking statements.