

CLEAN RESOURCES

CLEAN TECHNOLOGY

RENEWABLE AND ALTERNATIVE ENERGY – GRID MODERNIZATION

FUNDING DETAILS

WiSDM – Automated Dispatch to Support Power Generation

To meet Alberta's power needs, there must be a continuous balance between power plant supply, and customer demand. This is achieved by power plants submitting bids to the independent system operator 24/7/365, determining when a power plant is turned on or off (dispatched). Lionstooth is developing, WiSDM, a data-enabled platform that will use artificial intelligence and machine learning as an alternative to the traditional manual dispatch process. Through demonstration and beta testing with operating power plants, Lionstooth will:

- Automate power plant optimization, including using machine learning to analyze market conditions and predict prices;
- Automate submitting price bids; and,
- Automate turning the power plant on / off.



RECIPIENT:

Lionstooth Energy



TOTAL BUDGET:

\$811,710



AI FUNDING:

\$396,990



PROJECT DATES:

**JAN 2022 –
DEC 2023**



PROJECT TRL:

**Start: 4
End: 9**

APPLICATION

Between now and 2030, over 12,000 MW of new generation will be developed in Alberta as we transition to net-zero electricity supplies. Many will be smaller projects, less than 50 MW, allowing generation to become more democratized and decentralized, increasing the number of smaller developers and new market entrants. The current labour-intensive manual processes of power plant dispatch are cost-prohibitive for these small generators, representing a barrier to entry. This is the target application for WiSDM.

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PROJECT GOALS

The key goals of the WiSDM Alberta Innovates project are:

- Enhancing power plant functionality through AI-enabled asset optimization that will utilize machine learning for market forecasting and data analysis;
- Developing the ability to automate components of the interaction with the system operator, including submitting offers, and receiving dispatch instructions; and,
- Expanding automated power plant dispatch functions, turning power plants on / off, in response to system operator direction.

BENEFITS TO ALBERTA

Successful development of WiSDM will result in the following benefits for Alberta:

- Expanded, new, and diversified high quality and skilled personnel jobs, including roles in coding, automated and physical operations, and project management.
- Reductions in barriers to entry for generation development, by lowering operating costs, and making lower-emitting natural gas and renewable projects more attractive to investors.
- Enabling power generation development in smaller increments, opening the door for non-traditional developers, including indigenous owners, communities, and new market entrants.
- Increased and democratized access to the power market, such that more than just large, incumbent, or multi-national generation owners, can take part in the energy transition.



1 Field Pilot



**2 Students
Trained**



3 Project Jobs



150 Future Jobs



**1 New
Product/Service**



**~800 kt/yr Enabled
Future GHGs**

CURRENT STATUS

MAY 2022

Lionstooth has initiated development work on the individual modules that make up WiSDM and has secured the initial location for demonstration of the technology later in the project. Progress to date has been positive as Lionstooth works to ensure the system will be compatible with regulatory and operational parameters.