DESCHARME LAKE **MICROGRID**

ABOUT THE PROJECT

We're building a solar-battery-diesel combination microgrid that will power the northern community of Descharme Lake. We expect it to be in operation by Fall 2024.

We worked with Northern Municipal Services to choose a place for the microgrid.

This is the first microgrid project of its kind for SaskPower. We'll gain valuable experience operating it, which will help us determine if similar microgrids are suitable for other locations.

WHY A MICROGRID?

Right now, power needs to travel very far to get to Descharme Lake. We currently maintain a 96-kilometre power line to the community. The line is 60 years old and costly to maintain. Along the power line, things can happen to create a power outage. A tree branch can fall on the power line, or wind can make a power pole fall over.

Microgrids work well in communities like Descharme Lake. They are less expensive than maintaining a long power line. Having the power close by also means there is less chance for power outages.

This makes the microgrid a cost-effective alternative to provide reliable power to the community of Descharme Lake. It will also contribute to reducing our overall greenhouse gas emissions.

Eventually, we'll take down the power line that brings power to you now. Before we take down that power line, we'll make sure the microgrid is working well.

HOW IT WORKS

The microgrid will be an independent system. It'll power the community using sunlight during the day while storing excess energy in a large battery for use when it's dark. For winter and other times when there is less sun, it'll have two diesel generators to provide backup power and charge the battery when it's low and the sun isn't shining. It's designed so that only one generator runs at a time. The second generator is there for backup in case the first generator doesn't start. This improves the reliability of the microgrid.

We expect over 80% of power generated by the microgrid to come from solar.

HOW WILL WE KNOW WHEN THE POWER GOES OUT?

The microgrid will have a control panel that transmits signals to let us know how the equipment is running. If the control panel sends an error signal or the communication stops, we'll know there is a problem and that power may be disrupted. We're also bringing smart meters to everyone in Saskatchewan, including Descharme Lake. These will help us pinpoint the source of any outage.

HOW OFTEN WILL THE GENERATOR RUN?

The generators will kick in when the batteries are running out of stored energy. A charge from zero to full will take about eight hours. With average community use and no sun, the batteries should last about 24 hours before needing a charge. As the batteries will continue to power the community while they are being charged, we can expect one generator to run for eight to 12 hours at a time every day or two.

WHAT MAINTENANCE WILL THE MICROGRID NEED?

Throughout the year we'll need to maintain the land around the microgrid for safety and access to it. The solar panels will need to be cleared of snow and other debris from time to time.

HOW WILL THIS CHANGE MY POWER BILL?

The microgrid won't make any changes to your power bill. You'll continue to pay based on your usage. When smart meters are installed, there will be no more estimate bills. You'll only pay for the exact power you use.

DESCHARME LAKE
MICROGRID

SAMPLE MICROGRID LAYOUT

1. Power line and poles
2. Controller unit
3. Dedicated energy source (diesel or propane)
4. Battery energy storage
5. Solar panels

New addition: microgrid