

# BIOMASS COGENERATION PLANT PROJECT

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National Summit on the Indigenous Bioeconomy

May 10<sup>th</sup>, 2023

# BIOMASS COGENERATION PLANT

## MEETING OVERVIEW

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Portrait of the community

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Context, issues, and important elements

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The Forest Biomass Cogeneration Power Plant Project

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Project benefits

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Project figures and funding

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Société en Commandite Onimiskiw Opitciwan

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Highlights

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Success factors





## YOUR SPEAKERS

Zachary Simard

Administrator & Environmental  
advisor, SCOO

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Grégoire Lemay

Administrator & Technical  
advisor, SCOO



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D'OPITCIWAN





## PORTRAIT OF THE COMMUNITY

- Population: 2 529  
(+ 615 Living outside the community)
- Electoral system under community regulations
- Council composed of 1 Chief and 6 Councilors
- Average yearly revenue: 23 804\$
- Unemployment rate: 14,4% of the working population
- Atikamekw language spoken by 98.5% of the population



## COMMUNITY ACCESS

Main access via 162 km of forest roads between the community and the main regional road (asphalt)

# BIOMASS COGENERATION PLANT

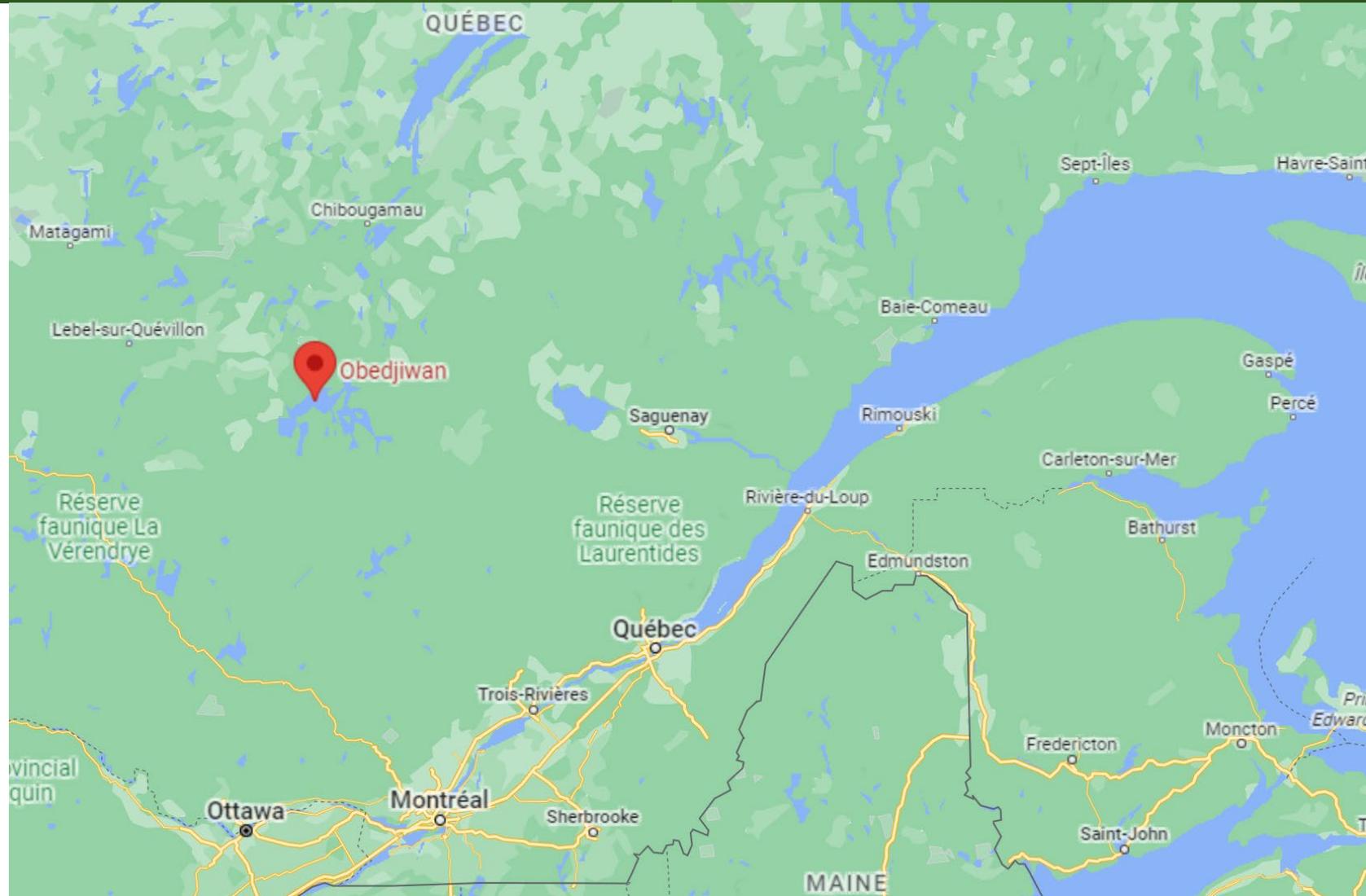
## COMMUNITY ACCESS

Distances:

Quebec: 530 km  
*(A 7.5-hour drive)*

Montreal: 626 km  
*(A 9.5-hour drive)*

Ottawa: 802 km  
*(A 10.5-hour drive)*



# BIOMASS COGENERATION PLANT

## CONTEXT

- Project of the Conseil des Atikamekw d'Opitciwan (CAO) for over 10 years
- Several scenarios studied
- Choice of forest biomass
- Project submitted to Hydro-Québec (gradually)



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# BIOMASS COGENERATION PLANT

## CURRENT ISSUES

- Local electricity grid is unstable
- 2021 – Service life reached for existing 4.9 MW thermal generation station
- Development due to limited energy availability
- Significant lack of family housing | Masterplan for the construction of 20 houses per year



# BIOMASS COGENERATION PLANT

## CURRENT ISSUES

- Industrial, commercial, and institutional sectors subject to interruptible power agreement to limit peak demand (Network removal for power management)
- Sawmill is limited in its development
- Road to Opitciwan – Access road shared with standard vehicles, over-sized transport trucks, as well as non-standard vehicles
- Dependence on fossil fuel/GHG emissions



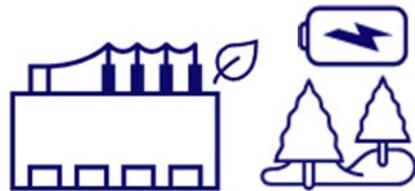
# BIOMASS COGENERATION PLANT



## CRITERIA FOR THE IMPLEMENTATION OF RENEWABLE ENERGY PROJECTS

### Renewable Energy Integration (Biomass 85% and diesel 15%)

4.8 MW forest biomass cogeneration plant combined with a thermal powerplant with investments for growth and sustainability, energy storage system and advanced automatic.



 Acceptabilité sociale et environnementale	 Réduction des émissions de gaz à effet de serre	 Fiabilité de l'approvisionnement	 Réduction des coûts d'approvisionnement
Appui du Conseil de bande et de la communauté  Création de valeur (séchage du bois d'œuvre)  Création d'emplois (nouvelle centrale)	Diminution importante de la consommation de combustible fossile de l'ordre de 115 M de litres de diesel  325 000 t <sub>eq</sub> CO <sub>2</sub>	Maintien de la centrale existante avec stockage pour optimisation d'intégration ÉR	<b>VAN Positive</b>

# BIOMASS COGENERATION PLANT

## IMPORTANT ELEMENTS

- Construction of the cogeneration plant adjacent to the sawmill
- Plant Owner = Société en commandite Omnimiskiw Opitciwan, whose majority ownership will be held by the Council (currently 100% owned)
- Installed capacity of the biomass cogeneration plant : 4.8 MW
- Existing diesel generators will be maintained as backup in case of problems – A reduction of over 85% of the current diesel consumption.
- Hydro-Québec customer: 25-year contract + possibility of 15-year extension (Contract signed on December 15, 2022 – press conference on February 2, 2023)



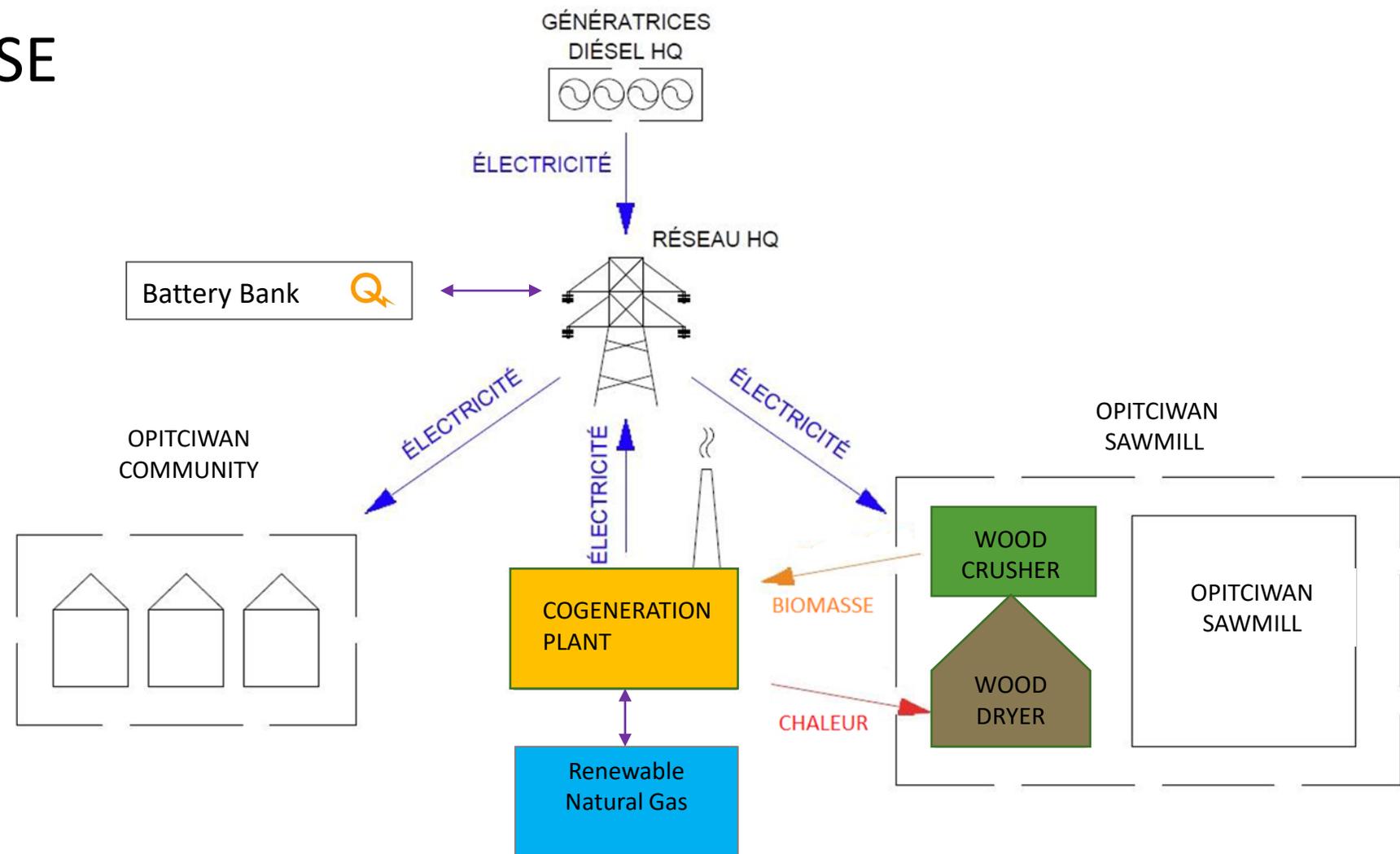
# BIOMASS COGENERATION PLANT

## IMPORTANT ELEMENTS

- Commissioning of the plant in July 2026, 3.5 years after the signing of the Contrat d'Achat d'Électricité «CAÉ» (Power Purchase Agreement) with Hydro-Québec
- The project involves the acquisition and installation of a wood kiln by the sawmill
- Use of all biomass generated by the sawmill (bark and sawdust) as fuel, at a favorable price (use of available biomass – without additional wood cutting)
- Significant reduction in the number of trucks on the Opitciwan road
- Transportation - Average trip of 500 km | 1700 trips annually

# BIOMASS COGENERATION PLANT

## USE CASE



# ECONOMIC BENEFITS

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## Construction period

- Average of 40 workers for the duration of construction (20% community residents)
- Benefits related to accommodation and procurement

## Operation Period

- Technical training for future employees
- 10-15 permanent employees

## Benefits

- Royalties generated annually over a 25-year period
- Participation in the construction of the project
- Allows to develop new projects (e.g. accommodations, greenhouses, etc.)
- New residential developments



# BENEFITS FOR THE SAWMILL

## Increased profitability

Reduced network unavailability

## Long-term financial stability

Available heating energy

## Securing current jobs

Connection to the fire system

## Consolidation of operations

Savings on bark and green wood transportation

## Construction of a Wood kiln

Savings on drying  
Job creation



# ENVIRONMENTAL BENEFITS

Significant reduction in GHG emissions from the diesel plant



According to the reference scenario (Diesel power plant)  
GHG eliminated over 25 years:  
325,000 MT in CO<sup>2</sup>  
Yearly : 13 000 MT in CO<sup>2</sup>

Dependence on fossil fuels is reduced

Reduction of transportation associated with diesel, and bark and wood transportation



-1700/year

Reduction of noises and smells coming from the diesel plant

Optimal use of forest resources



*Equivalent to the annual removal of 5000 cars from the roads*

# THE PROJECT IN FIGURES

Project cost: \$60.2 M

- Owner Investment: 10 %
- Subsidies: 65 %
- Financing : 25 %

ROI rate for developers :  
between 12-15 %



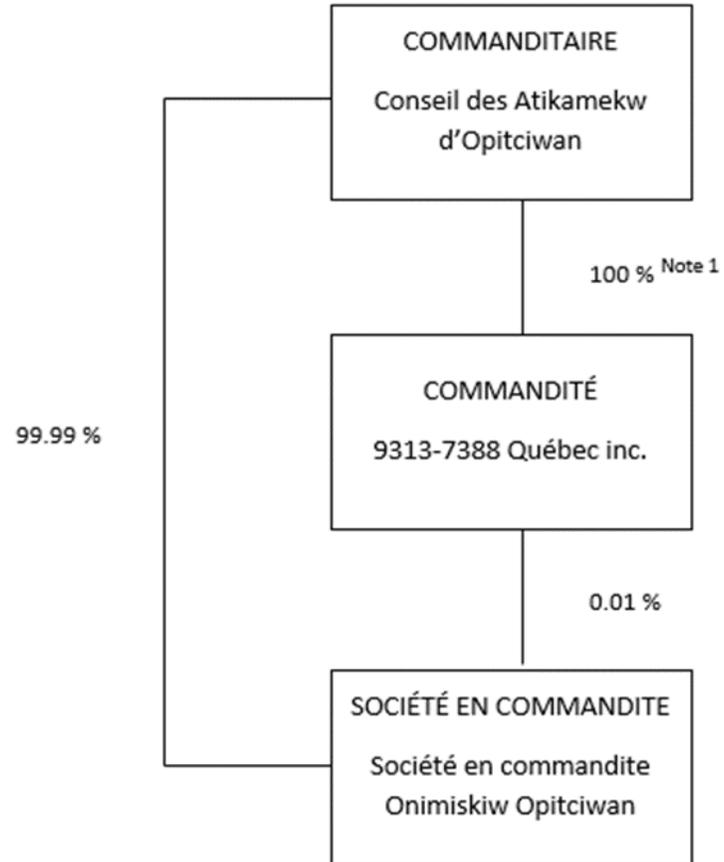
# BIOMASS COGENERATION PLANT



Société en Commandite  
**ONIMISKIW OPITCIWAN**



CONSEIL DES ATIKAMEKW  
D'OPITCIWAN



# HIGHLIGHTS



July 8<sup>th</sup>, 2021

Summit meeting between Chief Mequish and Sophie Brochu, CEO of Hydro-Québec



December 13<sup>th</sup>, 2022

Public information meeting for the  
population of Opitciwan



December 15<sup>th</sup>, 2022

Signature of the  
Power Purchase Agreement



February 2<sup>rd</sup>, 2023

Joint press conference  
with Hydro-Québec

*Régie  
de l'énergie*

Québec



Spring 2023 - Pending

Decision of the Quebec Energy Board

# BIOMASS COGENERATION PLANT

## Success factors

- Meets current and future needs
- Recognized economic/social/environmental impacts
- Common will of the community and Hydro-Québec to move towards a better environmental balance (Decarbonization of electricity production)
- Accessibility of the supply resource (forest biomass)
- Meets all the criteria of the Quebec Energy Board
- Community-led project / Support from the population
- Non-partisan / Transcends political interests (4 Chiefs)
- Opitciwan and Hydro-Québec – Working in partnership towards a common goal





MIKWETC!



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