



# 2030 Energy Strategy & Action Plan

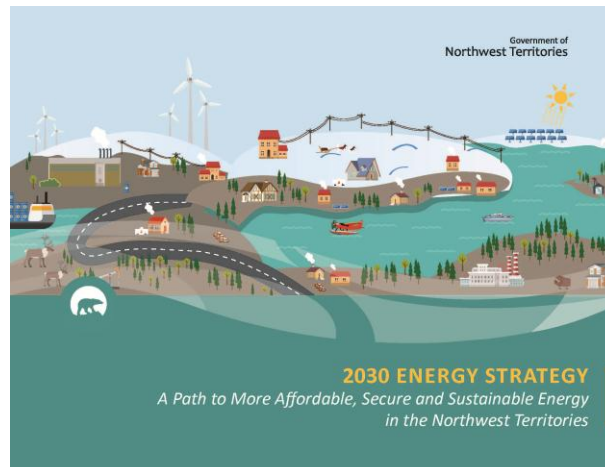
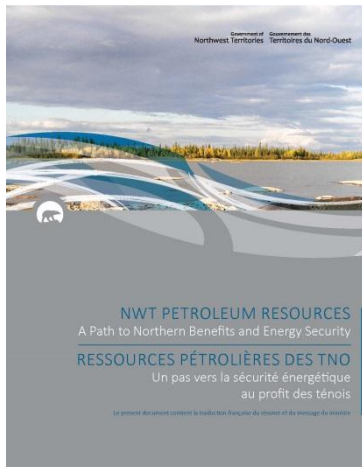
2018.06.12

AEET Conference – Inuvik NT



# Presentation Overview

- NWT Context
- GNWT Priorities - Energy & Transportation Corridors
- 2030 Energy Strategy + Action Plan
  - Energy Literacy / Participation Model for Diesel Communities
  - Remote Diesel Solutions / Taltson Hydro Expansion



# NWT Context



44,000 residents

33 communities

0.2% of Canada's GHG Emissions

Few roads, transmission lines

Resource driven economy

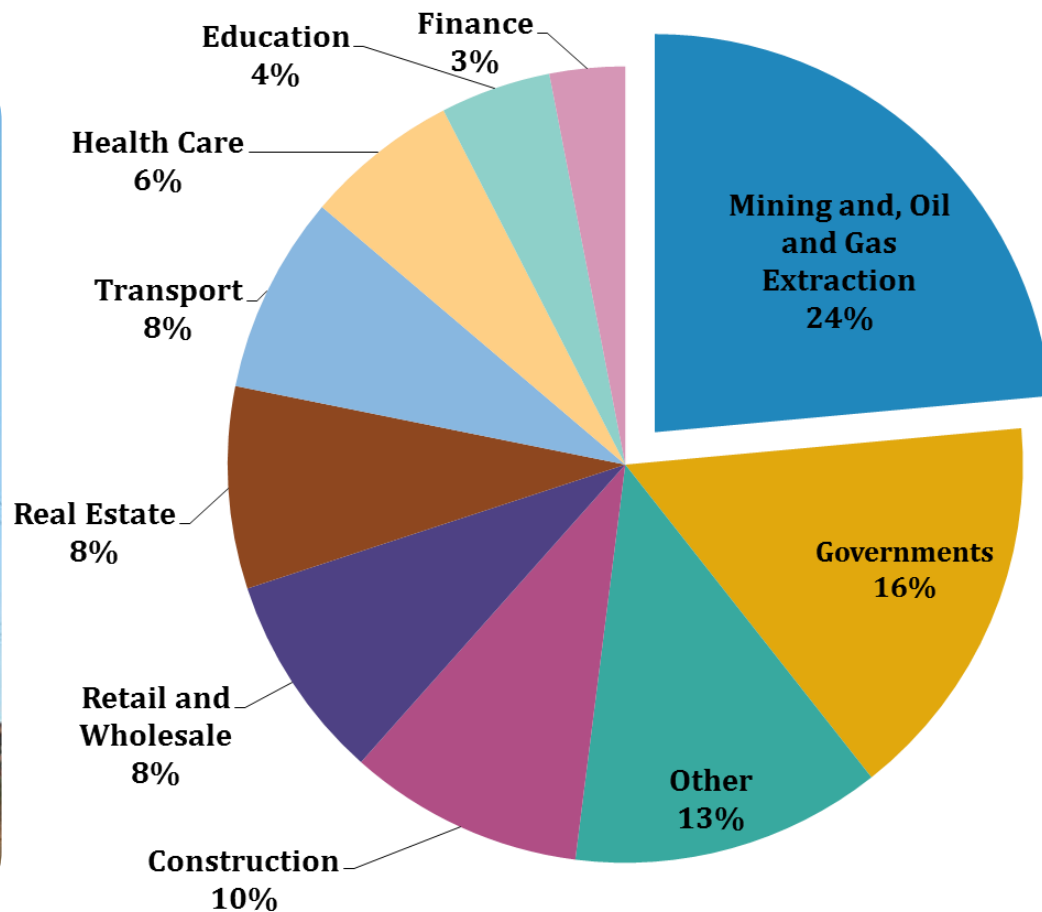
8 hydro power communities

25 off-grid (diesel) communities

Heating from fossil fuels / biomass  
(wood pellets / cord wood)

# NWT Context

## NWT GDP - 2016



# NWT Legacy Hydro Snare & Taltson





# 2030 Energy Strategy

## 8 Guiding Principles:

- Secure, Affordable and sustainable
- Indigenous and Community Engagement
- Transparent , accountable

## 6 Strategic Objectives

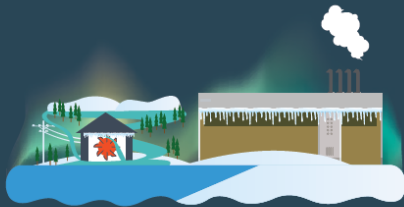
- Working together to find solutions, engagement
- Electricity (25%)
- Transportation (10%)
- Heating (40%)
- Energy Efficiency (15%)
- Long Term Vision



# Working Together to Find Solutions

## Northern Energy

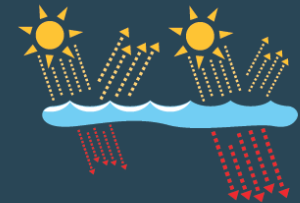
SUPPLEMENTARY TEACHING MATERIALS  
LESSON PLANS FOR EXPERIENTIAL SCIENCE 10, 20, 30



Northern Energy



Renewable Energy



The Albedo Effect  
and Feedback Loops



Wind Power  
and Your Community



Renewable Energy  
and GHG Mitigation



Calculating Your  
Travel GHG's

# Working Together to Find Solutions

## Small scale

(<15kW)
















- own it, net meter

## Mid Scale 15.1kW+

- Own it, sign PPA with NTPC

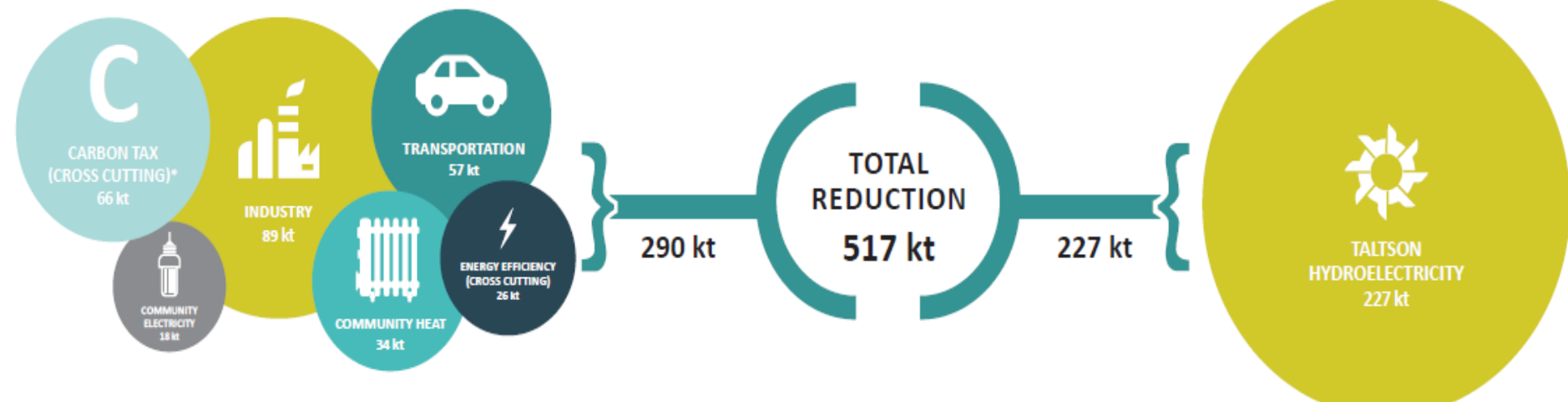
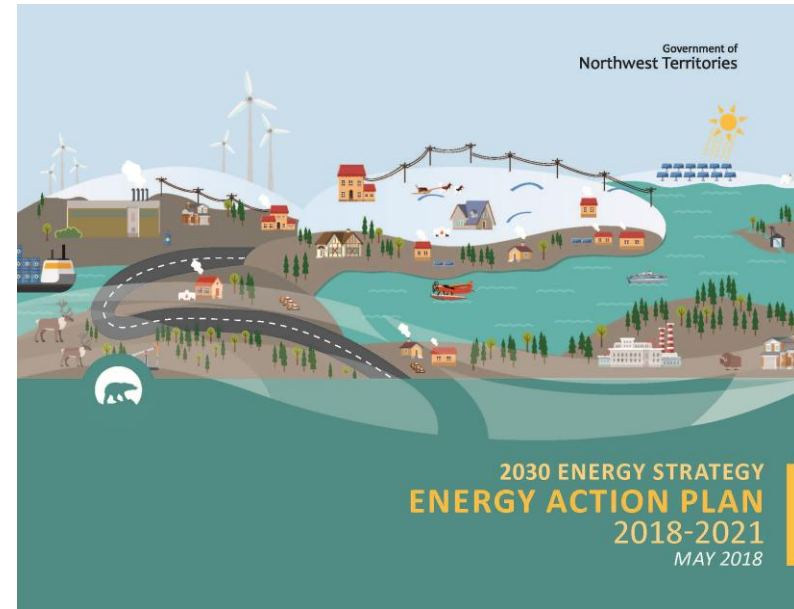
## Larger Scale

- Partner with utility, Low risk lender option

	SMALL-SCALE RENEWABLES ON BUILDINGS	MID-SCALE RENEWABLES DIRECT TO GRID	LARGER-SCALE RENEWABLE PARTNERSHIP
CATEGORY			
PARTICIPANTS	 Residents/Business/Community & Indigenous Governments	 Indigenous & Community Governments	 Indigenous & Community Governments
OWNERSHIP	Direct-Ownership	Community-Ownership	Partnership with utility
SCALE	 Up to 15 kilowatts	 More than 15 kilowatts	 Larger Scale New Renewable Capacity
FUNDING	 Self-financing + Potential Government Grants	 Self-financing + Potential Government Grants	 Partner Financing
REVENUE POTENTIAL	 Net Metering: displaced electricity costs and energy credits	 Payment for the reduced cost of diesel	 Low-risk interest
DETAILS AND LIMITATIONS	<ul style="list-style-type: none"> <li>• Renewable Community Capacity Limit</li> <li>• Net Metering Guidelines</li> </ul>	<ul style="list-style-type: none"> <li>• Renewable Community Capacity Limit</li> <li>• Upfront connection agreement</li> </ul>	<ul style="list-style-type: none"> <li>• Negotiated terms and contract</li> <li>• May be subject to regulatory oversight</li> </ul>

# Action Plan Funding Sources

- ECCC Bilateral - 4 years (proposed)
- INFC Bilateral – 10 years (approved)
- \$178M - 3 year rolling action plan



# GHG today vs. Actions to 2030

*Figure 1: Northwest Territories Greenhouse Gas Emissions in Kilotonnes for 2016 and 2030 based on GNWT Actions to meet the Pan Canadian Framework Target*



# Action Plan Implementation

- ECCC Funding over four years:
  - A Government Grant program
  - Large Scale Commercial/Industrial Grant program
  - Enhancements to AEA programs
  - NWTHC efficiency upgrades
  - Energy retrofits to GNWT vessels
  - Active reforestation for carbon sinks



# Remote Diesel – A Mix of Solutions



**BIOMASS COMBINED  
HEAT AND POWER**



**NATURAL GAS**



**ENERGY STORAGE**



**ELECTRIC THERMAL  
STORAGE**



**SMART GRIDS AND  
DISTRIBUTED GENERATION**

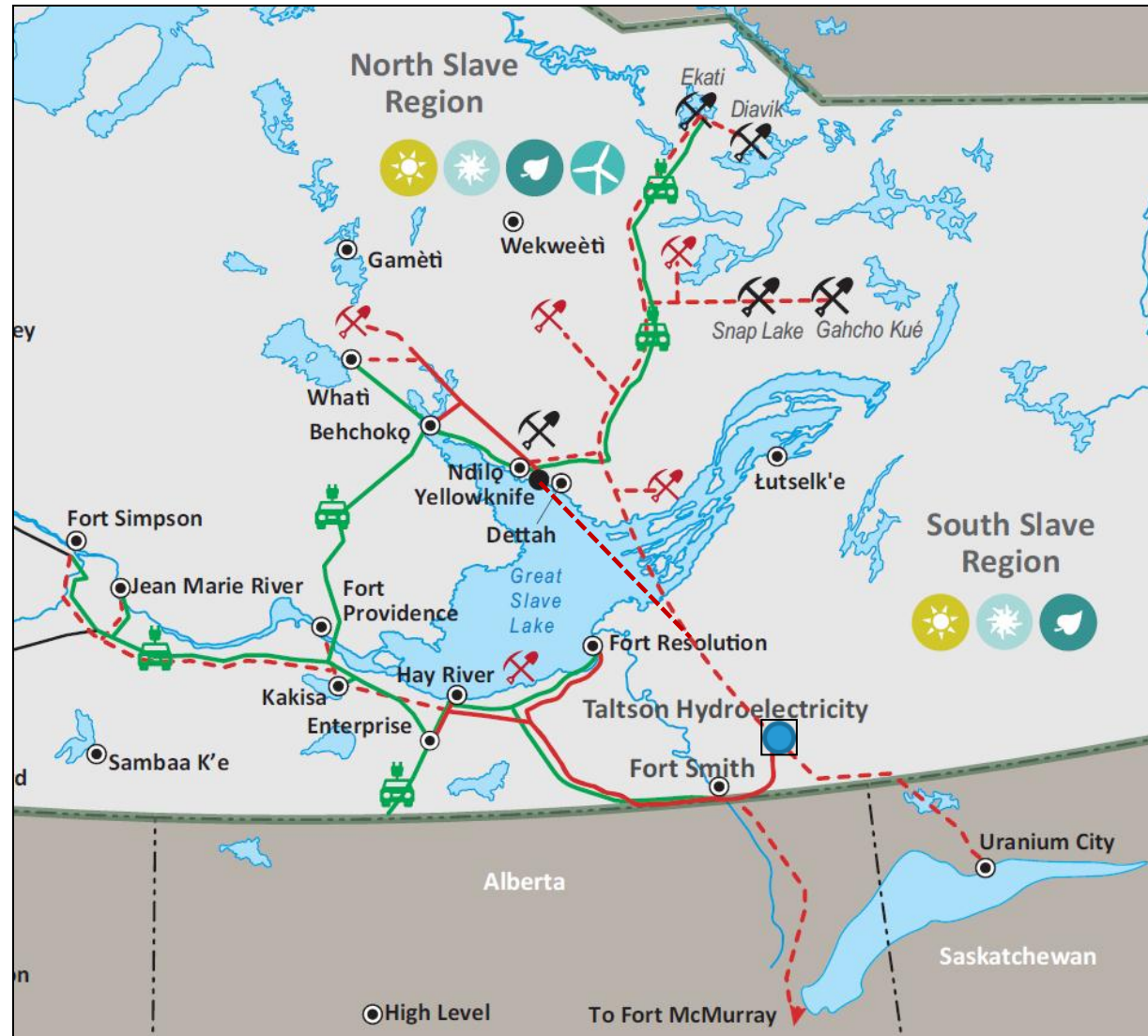


# Taltson Hydro Expansion

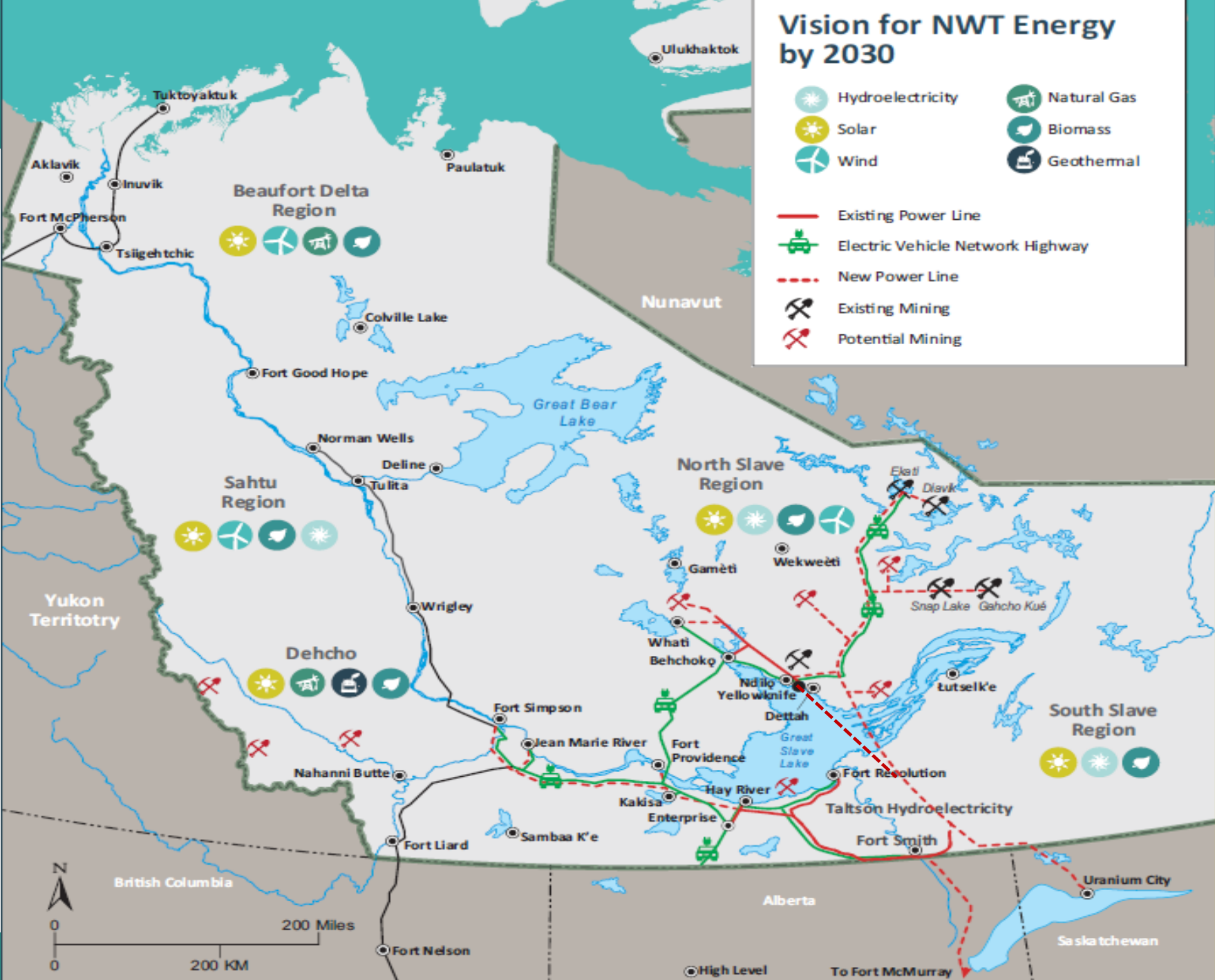
60 MW Taltson  
hydropower expansion

Connecting islanded  
hydro systems

Transforming industry  
(mining) and  
transportation  
emissions



# Vision for NWT Energy by 2030



- Hydroelectricity
- Solar
- Wind
- Natural Gas
- Biomass
- Geothermal

- Existing Power Line
- Electric Vehicle Network Highway
- New Power Line
- Existing Mining
- Potential Mining