



Inuvik Wind Update

AEET Conference

Inuvik

June 12, 2018

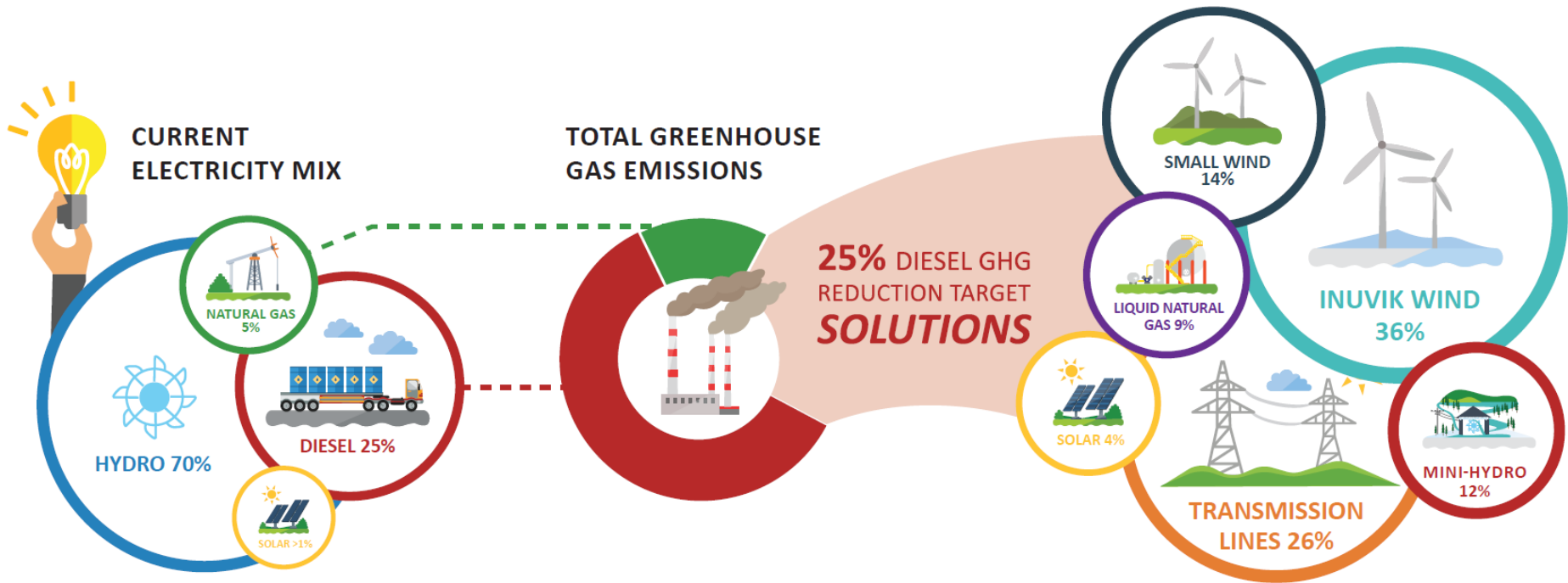


Presentation Overview

- **Beaufort Delta Energy Vision**
- **Wind Monitoring**
- **Project Benefits**
- **Engagement**
- **Project Update**
- **Next Steps**



2030 Energy Strategy – Electricity Targets



2030 Energy Vision for Beaufort Delta Region



Wind



Natural Gas



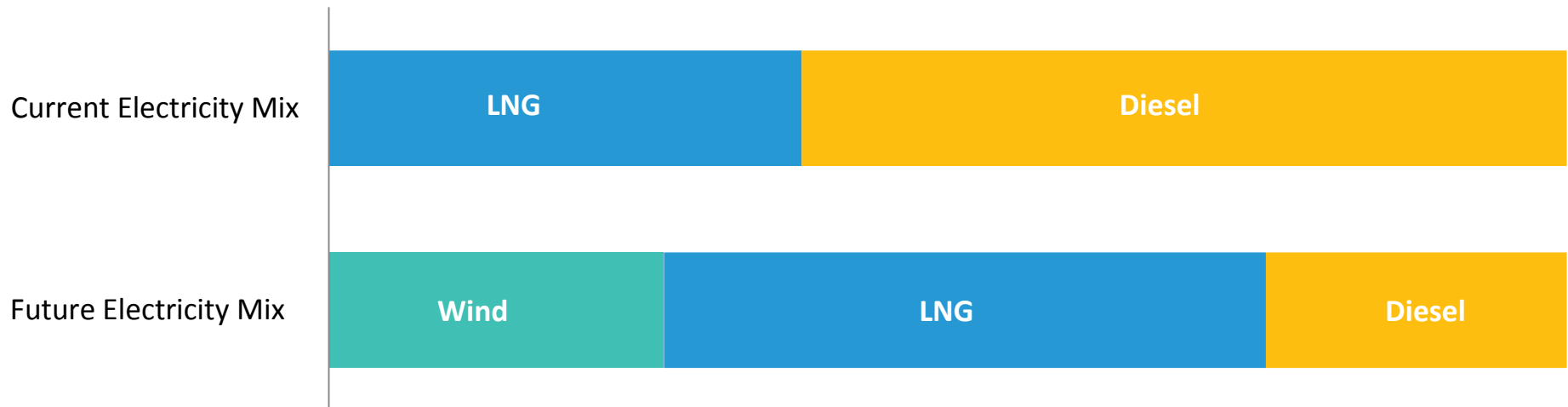
Solar



Biomass

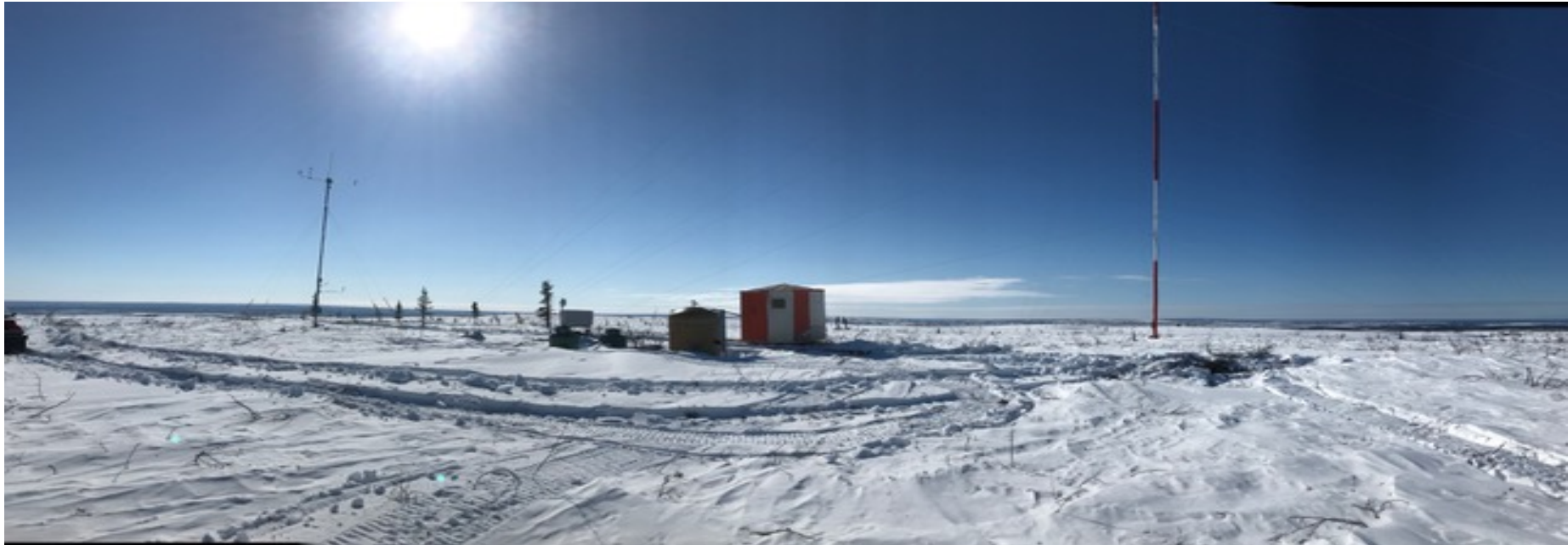
Project Benefits

- **Financial and GHG emission savings**
- **Local source of renewable energy**
- **Help stabilize power rates for thermal zone**
- **Diversify Inuvik's electricity system**



Wind Monitoring

- **Wind Data Collection at High Point – 24 Month**
 - **Lead: Nihtat Corporation - wholly owned by the Nihtat Gwich'in Tribal Council located in Inuvik.**



INUVIK WIND

Exploring Wind Energy in the Beaufort Delta



North



Inuvik

All season road

High Point



Airport



- Easily controlled to meet electricity demands.
- Fast response time.
- Considered very reliable for generation.
- Large amounts of fuel can be stored easily.

Diesel Generators

- Greenhouse gas emissions.
- Requires ongoing cost for imported fuel.
- Local noise and pollution.



- No cost for fuel.
 - No emissions.
 - Available year round.
- Cannot control wind for timing or power.
 - Cannot store wind for later use (unless batteries are used)
 - Up-front costs are high.

Wind Turbines



Strategically located to minimize noise for residents.

Noise



- Conduct engagement sessions to gain local approval.
- Avoid sites with any known cultural significance.
- Avoid blocking access to any site with known cultural significance.

Cultural



- Turbines have been known to impact birds.
- Will do study to understand and minimize impacts.
- Baseline environmental studies will be completed.

Wildlife



There are strict guidelines on all tall structures around airports. The tower cannot be located on either end of the runway, unless more than 4km away. Due to proximity to runway and height restrictions, towers need to be provided with lighting.

Air Traffic



Inuvik wind is a local source of renewable energy that can help the Northwest Territories transition to a lower carbon economy.



Wind speed at the High Point site is 6.81 metres per second at 74 metres above ground level (hub height).



A wind project at the High Point site would:

- Diversify Inuvik's electricity system.
- Displace up to three (3) million litres of diesel fuel annually (approximately 30% of Inuvik's total diesel usage to generate electricity).
- Reduce greenhouse gas (GHG) emissions by up to 3,800 tonnes per year.



Topography is relatively flat with a gradual downslope from the proposed site to the highway. Some rock outcrops are in the area. The site is in the zone of continuous permafrost.

For more information visit NWTEnergy.ca

Engagement – Since 2016

- On all phases of the program working with Nihtat Corporation owned by the Nihtat Gwich'in Council in Inuvik.
- Engagement with all stakeholders since 2016 including First Public Open House March 2018
- Traditional Knowledge and Land Use Workshop
- Environmental Baseline Programs



Geotech Borehole Map: Inuvik High Point



Project Update

- **Two Year Feasibility study (CanNor funded)**
 - **Wind Resource Assessment Complete**
 - **Performance Specification**
 - **Regulatory / Permitting**
 - **Business Case**
- **Procurement & delivery model**



Performance Specifications

- **New Wind Turbine Technology:**
 - **Heated blades for arctic weather**
 - **Cold temperature shutdown**
- **Very little excess wind**
- **Batteries to improve reliability**
- **Building on Colville Lake experience**
- **Logistics is key to Schedule**



Project Economics

- **Government subsidized and requires federal funding**
- **10-year bilateral agreement signed with Federal Government**
- **GNWT looking at formal project submission Inuvik Wind**
- **NTPC owned and operated**
- **Working with Nihtat Corporation owned by the Nihtat Gwich'in Council in Inuvik and all stakeholders**



Next Steps

- **Complete environmental baseline programs**
- **Performance specifications completed**
- **Design basis completed end of month**
- **Business case under review**
- **Permit Applications in October**
- **Permit application will inform procurement schedule**
- **Prepare to release project for bid**



**WE WOULD LIKE TO
HEAR FROM YOU!**

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