



Strategic Plan

Our Electricity Future

Our Mission

To provide sustainable, affordable energy that encourages living, working and investing in the Northwest Territories.

Our Vision

To reliably generate, transmit and distribute energy essential to our customers.

Our Values

SAFETY – We make safety a cornerstone in all our actions and decisions.

PEOPLE – We consider the well-being and success of every employee in all decisions

COMMITMENT – We are determined, agile and know how to keep the lights on

COMMUNITY – We work with and for all Northerners

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Introduction

Electricity is essential to modern life because it powers many of the activities we rely on daily such as lighting, refrigeration and computers. Reliability and affordability of electricity systems have historically been the primary concerns of customers, governments and utilities. However, in recent years, the environmental impact of electricity generation has become as important as those other factors.

Climate change is one of the major issues facing our planet today. Even though electricity generation is responsible for only a small percentage of the greenhouse gas (GHG) emissions in the Northwest Territories that have been linked to climate change, there is a strong desire to further reduce that impact. It is critical that actions to minimize GHG emissions do not have a negative impact on reliability or affordability, particularly in the North where electricity rates are already significantly higher than the Canadian national average.

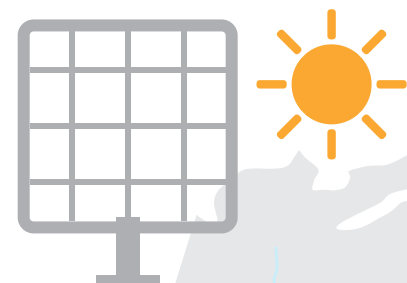
Recognizing this reality, the Northwest Territories Power Corporation (NTPC) has developed a Strategic Plan to guide its short and long-term activities. The Plan includes information about the challenges facing NTPC, how the Corporation intends to address those challenges and how it plans to provide reliable, affordable and low-carbon electricity to customers.

NTPC Overview

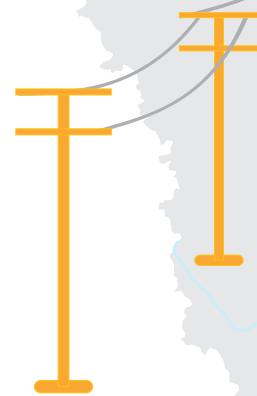
NTPC was established in 1988 and is the leading electricity supplier in the Northwest Territories. Our corporate mission is to generate, transmit and distribute clean, reliable and affordable energy to the Northwest Territories. NTPC is responsible for keeping the lights on for customers across the North. Activities of NTPC are regulated by the NWT Public Utilities Board (PUB). Capital, operational and maintenance costs are all reviewed by the PUB when NTPC submits a General Rate Application (GRA) and this information is used to set electricity rates.

NTPC generates power for more than 43,000 residents, located across 1.2 million square kilometres. Electricity is delivered to our customers through 565 kilometres of transmission lines and 375 kilometres of distribution lines stretched between 9,790 power poles. We operate two hydroelectric systems (Snare/Bluefish and Taltson) and 25 diesel plants, five solar arrays, one wind turbine, two battery storage systems, and a natural gas plant. Together these provide a total generating capacity of more than 133 megawatts (MW).

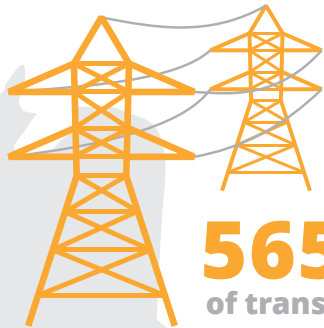
NTPC is a wholly owned subsidiary of NT Hydro, which in turn is 100 percent owned by the Government of the Northwest Territories (GNWT).



5 solar arrays



375 km
of distribution lines

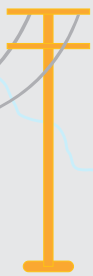


565 km
of transmission lines



1 natural
gas plant

9,790 poles



1 wind
turbine

43,000 people



spread across

1,200,000 km²



25 diesel
plants

2 battery
storage
systems



2 hydro
systems

Current Reality in the Electricity Sector

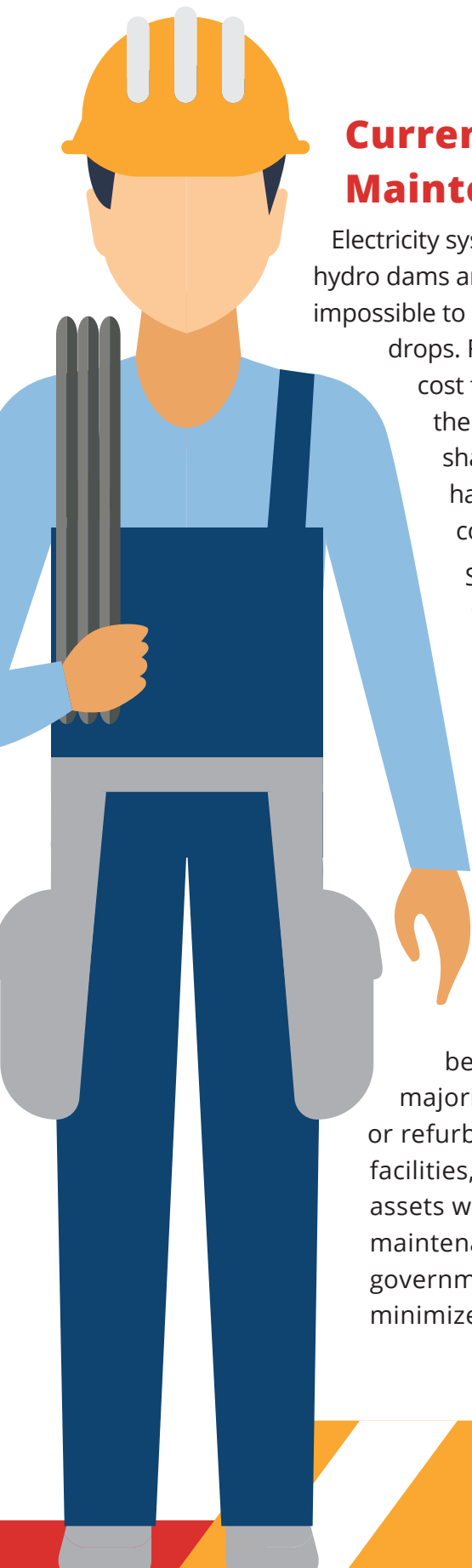
Residential electricity rates in the NWT are among the highest in Canada and significantly higher than the Canadian national average. Average rates increased by more than 55% between 2013 and 2024 and cost pressures will continue to require higher rates for customers without a comprehensive plan to address the underlying causes.

Many of the challenges we face in the North are shared across Canada as utilities and governments attempt to respond to customer expectations about the cost and environmental impact of electricity generation, transmission and distribution. At the same time, customers want improved reliability and minimal rate increases.



There are many reasons why electricity prices are high, including:

- Electricity sales have declined over the past several years while the cost of operation and maintenance has continued to increase
- Generation and transmission infrastructure is aging
 - Leads to increased operational costs and decreased reliability
 - Infrastructure is not just aging but approaching end of life without large capital investments
- We rely on costly diesel fuel for primary electricity generation in most communities and for backup power in communities served by hydroelectricity
- There is a stagnant customer base
- We have small scale, isolated and non-integrated systems, which results in limited economies of scale
- We are facing increased costs for regulatory oversight



Current Reality: Operating and Maintenance Costs

Electricity systems are expensive because assets such as diesel generators, hydro dams and power lines are costly to install and maintain. These costs are impossible to avoid and are also not reduced significantly if electricity demand drops. For example, if a community's population drops by 50 people, the cost to maintain the electricity system remains the same even though there are fewer customers drawing electricity. The costs are simply shared amongst fewer people. Since 2008, NTPC's total electricity sales have declined by 11% but operating and maintenance costs have continued to rise.

Some of the expenses that a utility such as NTPC faces are considered "controllable" in the short-term. Half of our costs are controllable to some degree. Controllable expenses include vehicle fuel, supplies and services, travel and accommodation, and salaries and wages while uncontrollable expenses include production fuel, interest and amortization (the process of paying off the capital cost of an asset).

Current Reality: Capital Costs

Capital expenditures represent a large percentage of costs facing electricity utilities. To ensure reliability and reduce the environmental impact of the electricity sector, aging infrastructure must be replaced or refurbished.

Over the next 10 years, most of NTPC's capital spending will be used for replacement or overhaul projects. This means that the majority of all capital dollars will be spent on projects that will replace or refurbish assets that are already in place. This includes hydroelectric facilities, diesel plants and transmission lines. New and refurbished assets will perform more efficiently, which will lower operating and maintenance costs, but the initial costs will be high. NTPC will work with governments and others to fund these capital projects while trying to minimize the impact on electricity rates.

Current Reality: Tackling Climate Change

According to scientists, climate change is the most significant environmental issue facing the planet today. The public and governments are demanding that many industries change the way they operate, including electrical utilities. Reducing GHG emissions from electricity generation is the primary way utilities will contribute to the effort to combat climate change.

The GNWT has developed a 2030 Energy Strategy and Climate Change Strategic Framework to ensure that the North does its part to reduce GHG emissions. One of the six Strategic Objectives that the GNWT has set is:

Reduce GHG from electricity generation in diesel-powered communities by an average of 25% by 2030

NTPC generates electricity for 29 communities using diesel fuel for primary electricity generation. Communities that are on either the Snare/Bluefish or Taltson hydroelectric systems rely on diesel fuel for backup generation.

Supplementing its diesel plant, NTPC has an LNG plant in Inuvik, which is a lower carbon generation option as LNG produces lower GHGs per kilowatt hour. A 3.5 MW wind turbine in Inuvik further reduces the reliance on fossil fuels such as diesel and LNG.

As of June 30, 2024, five other communities have utility-owned solar arrays to supplement generation from diesel. They are Fort Simpson, Colville Lake, Aklavik, Wrigley and Fort Liard.

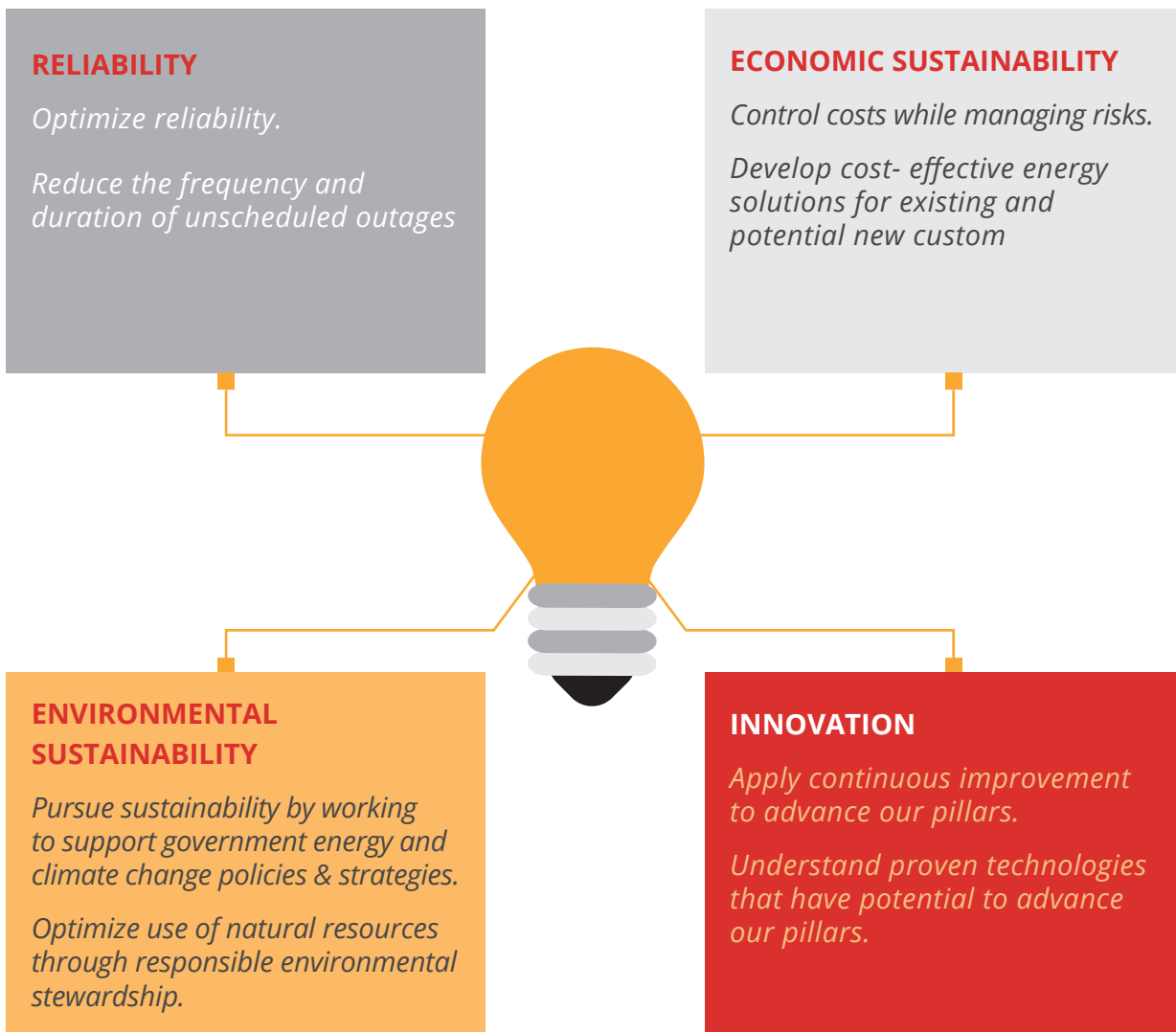
Use of diesel for either primary or backup generation has both financial and environmental costs. While providing a high level of reliability in extreme climates, diesel fuel is expensive. It also produces significant GHG emissions, even though community electricity generation as a whole represents only four percent of total GHG emissions in the NWT.

NTPC also has Power Purchase Agreements (PPA) with Indigenous organizations which own solar arrays in Lutsel K'e, Aklavik, Tulita and Inuvik. The total generation capacity of the PPA partners is 1.2 megawatts.

Building the Strategic Plan

Based on this reality, we recognized that a long-term strategy was required to ensure a sustainable economic and environmental future for both customers and for NTPC. Our Strategy (the Plan) also needed to align with the GNWT's 2030 Energy Strategy and support economic development opportunities, including the mining and other industrial sectors.

Pillars of the Strategic Plan



Ultimate Goals

The Strategic Plan sets out a path by which NTPC can achieve two ultimate goals over the next 20 years.

1. Reduce the gap between average electricity rates in the NWT and the Canadian national average

2. Achieve the 25% greenhouse gas emission reduction target for electricity generation in diesel-powered communities as outlined in the Government of the Northwest Territories' 2030 Energy Strategy

Strategic Objectives

The Plan is a living document that will be updated and revised over time as circumstances require. We have identified eight specific Strategic Objectives as well as initiatives that will support their achievement.

To reduce the gap between average electricity rates in the NWT and the Canadian national average, NTPC will focus on improving reliability, reducing costs as well as expanding our distribution and industrial customer base. At the same time, we will be reducing GHG emissions by integrating renewables into communities that are currently receiving primary power from diesel generation.

Electricity generated from these renewable sources will reduce the amount of expensive diesel fuel consumed as well as GHG emissions.

Over the next several years, NTPC will be focused on the following Strategic Objectives:

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- 1. Reduce fuel consumption***
 - 2. Reduce controllable costs***
 - 3. Investment in Core Infrastructure***
 - 4. Develop Indigenous Partnerships***
 - 5. Increase our distribution customer base***
 - 6. Increase our industrial customer base***
 - 7. Integrate renewable energy projects***
 - 8. Support the Taltson Expansion Project***

1. Reduce Fuel Consumption

Although the cost of diesel fuel is not something that NTPC can control, we can find ways to reduce the amount that is used to generate electricity. This will help to lower generation costs and reduce GHG emissions.

We will consider a wide range of options to reduce diesel fuel consumption. This may include initiatives such as:



- Switching communities to LNG where it makes economic sense
- Purchasing higher efficiency engines
- Use of emerging technologies such as variable speed generators.
- Use of different grades of diesel fuel

2. Reduce Controllable Costs

Approximately half of NTPC's annual spending on operations and maintenance is considered controllable. This puts a limit on the spending reductions that can be found but NTPC is committed to finding efficiencies in those areas in which it has some control.

NTPC recognizes that it must have an organizational structure that enables it to deliver and improve core services while moving forward on new initiatives to support growth and economic development.

Cost savings can also be found through innovation. NTPC has adopted a formal Continuous Improvement (CI) program that will streamline workflows, gain efficiencies and reduce operational and project costs.

3. Investment in Core Infrastructure

Electric utilities are foremost an asset management business. Maintaining the core infrastructure which NTPC relies on to provide safe reliable power is imperative, but assets do not last forever. As assets age, they require replacement or refurbishment, particularly as they reach the end of their design life or become uneconomic to maintain.

NTPC has recently updated and revised its Power System Plan. This plan examines each plant's critical infrastructure for condition and remaining expected life. The Power System Plan is used in developing the annual and multi-year capital plans, determining what capital projects are required both in the near term and the long term and how they can be accommodated within financial constraints.

Developing long range capital plans allows for adequate problem recognition, engineering, scoping, design and review to take place prior to construction, ensuring the most appropriate and cost-effective solution is approved and put in place.

4. Develop Indigenous Partnerships

NTPC is committed to developing positive relationships with Indigenous partners. NTPC looks for opportunities to work with Indigenous governments and organizations that provide benefits to all partners, customers, and communities. NTPC will enter into partnerships that will reduce dependence on diesel for electricity generation and reduce greenhouse gases and may provide financial benefits to our customers and partners. This includes non-utility renewable energy generation ownership and investment opportunities. Community-owned renewable generation guidelines were developed as part of the 2030 Energy Strategy and have been adopted by NTPC.

5. Increase our distribution customer base

NTPC generates most of the power used in the NWT, excluding the diamond mines which produce their own power on site. However, with a total direct customer base of approximately 9000, we are unable to achieve the economies of scale that larger southern utilities enjoy – in part, rates remain high because our customer base is too small to give us the leverage to negotiate favourable arrangements with some suppliers.

NTPC is willing to discuss franchise opportunities with other NWT communities, if they are opened to competitive bids. If we are successful in increasing our distribution customer base, we expect to see opportunities to find savings that will reduce upward pressure on rates.

NTPC will modernize distribution systems to accommodate electric vehicles, electric heat and distributed generation.

6. Increase our industrial customer base

New industries, particularly mines, provide significant economic benefits to the Northwest Territories. However, there have been few new mines opened here over the past several years. One of the reasons was generally low mineral prices but the cost of power has also been identified as an impediment to new investment.

NTPC has been building relationships with mining companies that are expressing interest in developing properties in the North. We want to be the power supplier of choice for the mining industry and will pursue opportunities that emerge from the mining and other industrial sectors.

Any profit that is made providing power to new industrial customers, either from existing generation sources or new facilities, can be used to offset upward rate pressure for our existing customers.

7. Integrate Renewable Energy Projects

To reduce GHG emissions and diesel consumption, NTPC needs to integrate more renewables and low carbon technologies into its existing community grids. This can be challenging, both technically and financially. The technical challenge comes from the fact that generation sources such as solar and wind are intermittent – this means their input to a grid can be unpredictable and puts strain on the diesel generators that form the backbone for most electricity systems in the NWT. Community electricity systems do not require additional generation capacity to meet current peak demand, but the addition of renewables will help to reduce the consumption of costly diesel fuel as well as GHG emissions.

The Federal Government's Investing in Canada Infrastructure Program (ICIP) provides funding to support electricity projects that result in reduced GHG emissions. Under this program, the Federal Government provides 75% of the funds to integrate renewable or low-carbon technologies in communities powered by diesel generation, to install new transmission lines and to overhaul existing hydroelectric dams. The remaining 25% will either be provided by GNWT or by NTPC. Several projects in the NWT have already been approved for funding. They include a wind turbine in Inuvik and an overhaul of the Taltson Hydro unit.



Federal and Territorial funding is also available for communities, Indigenous organizations and others to install renewable technologies. NTPC will work with these third parties to ensure that projects do not reduce reliability or have an unintended negative impact on electricity rates. We also want to encourage projects that maximize GHG emission reductions. We will continue to strengthen our capacity to build effective working relationships with communities and Indigenous organizations.

8. Support the Taltson Expansion Project

As part of its 2030 Energy Strategy, the GNWT has proposed that the Taltson Hydroelectric Facility be expanded. Phase One of the proposed expansion would see the generation capacity from Taltson grow from the current 18 megawatts to 60 megawatts. This phase also includes an inter-tie between the electricity grids north and south of Great Slave Lake.

NTPC is supportive of the GNWT's efforts to obtain federal funding support for the expansion of Taltson. Once completed, the generation expansion and inter-tie would improve reliability, reduce diesel consumption in Yellowknife, support industrial/mining development and reduce greenhouse gas emissions. It would also contribute to lower rates as customers would not have to pay the full capital costs for new hydro generation, which is significantly cheaper to operate than diesel generation.

Expected Outcome of the Strategic Plan

Successful execution of the Strategic Plan will enrich the lives of Northerners and contribute to an economic climate that encourages investment. It will allow us to:



- Reduce the gap between average residential electricity rates in the NWT and the Canadian national average
- Reduce greenhouse gas emissions associated with electricity generation
- Establish a sustainable financial future for the Corporation

NTPC looks forward to working with employees, communities, Indigenous organizations, new industrial customers and others as we execute on key initiatives over the next several years.





NORTHWEST TERRITORIES
**POWER
CORPORATION**

Empowering Communities

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