Northwest Territoriesmi
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MEETING EDE 124-19-22

STANDING COMMITTEE ON ECONOMIC DEVELOPMENT AND ENVIRONMENT

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THURSDAY, DECEMBER 8, 2022
COMMITTEE ROOM A
9:00am

AGENDA

1. Prayer
2. Review and Adoption of Agenda
3. Declarations of Conflict of Interest
4. In-Camera Matters

   a) 9:00am – Committee business
      i. Draft Report on Contaminated Sites
      ii. Food Security
      iii. Arts Program Review
      iv. Energy Initiatives

   b) Confidential Correspondence:
      i. 2022-10-14 – Minister of Finance
      ii. 2022-11-02 – Minister of ECE
      iii. 2022-10-26 – SCOSD
      iv. 2022-10-14 – SCOSD
      v. 2022-11-18 – Minister of ENR
      vi. 2022-11-21 – Minister of ENR
      vii. 2022-11-23 – Minister of ITI
      viii. 2022-11-23 – Minister of INF
      ix. 2022-11-25 – Minister of ITI
      x. 2022-11-28 – Premier
      xi. 2022-11-28 – Minister of INF
      xii. 2022-12-02 – Minister of ITI

5. Public Matters

    a) 10:30am – Public Technical Briefing on the 2030 Energy Strategy with staff from the department of INF and staff from Arctic Energy Alliance

6. In-Camera Matters

    a) 1:30pm – In-Camera briefing with the Honourable Shane Thompson, Minister of Lands
    b) 3:00pm – In-Camera briefing with the Honourable Shane Thompson, Minister of Lands

7. New Business
    a)
    b)

8. Date and Time of Next Meeting: At the call of the chair.

9. Adjournment

Government of
Northwest Territories

Energy Strategy and Arctic Energy Alliance Technical Briefing

Standing Committee on Economic Development and Environment

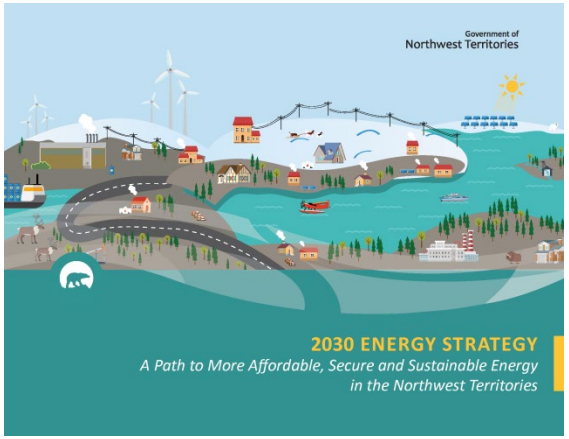
December 8, 2022

PRESENTATION OVERVIEW

- 2030 Energy Strategy
- Scale of the Issue
- NWT Emission Trends
- Energy Strategy Investments to Date
- 2019-2022 Energy Action Plan Results
- New 2022-25 Energy Action Plan
- Energy-Economy Modeling and 2050 Pathway Work
- 5-Year 2030 Energy Strategy Review
- Arctic Energy Allaince

2030 ENERGY STRATEGY

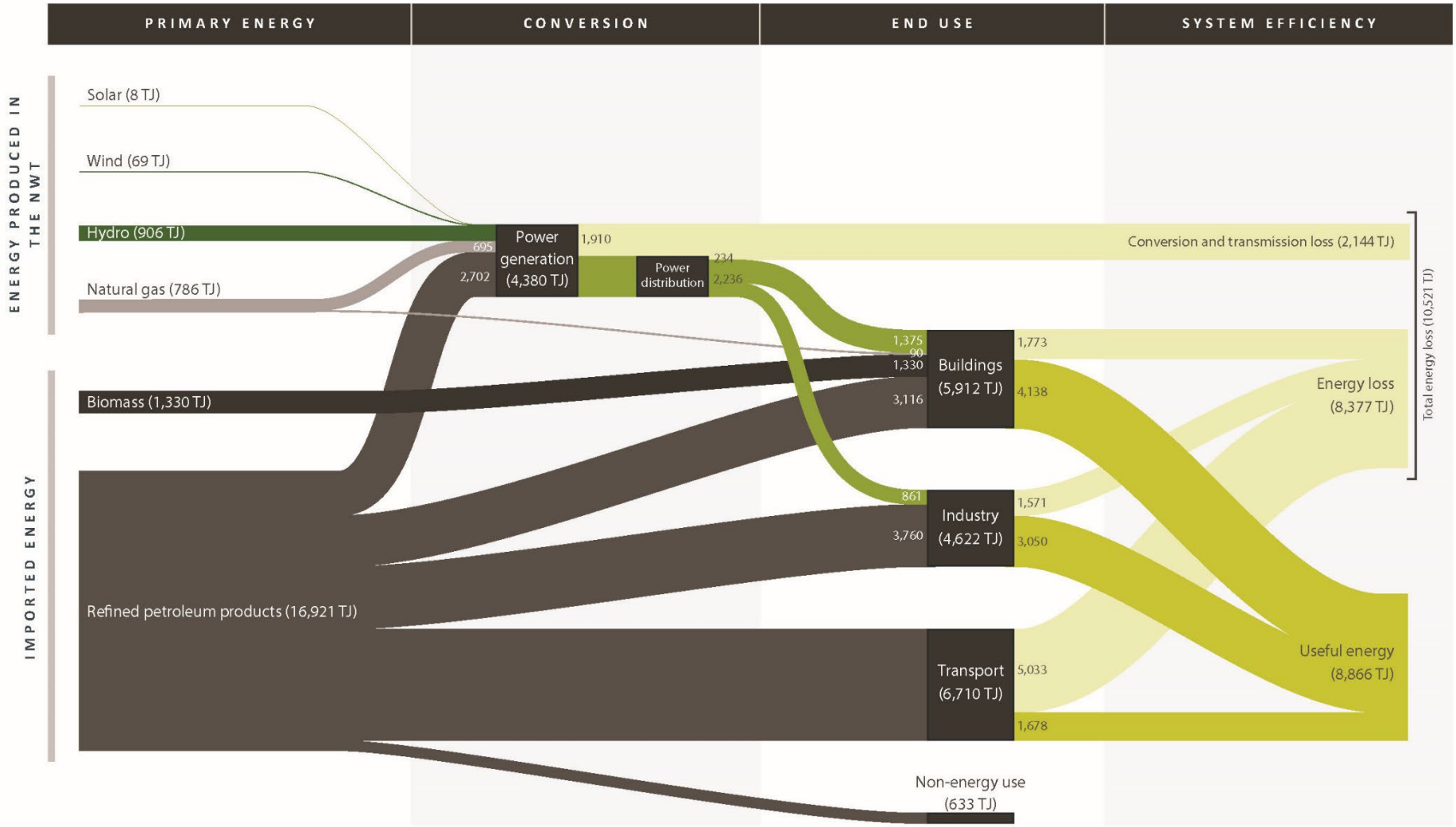
The overarching goal of the Strategy is to guide the development of affordable, secure, and sustainable energy for transportation, heat, and electricity in the NWT.



Six Strategic Objectives:

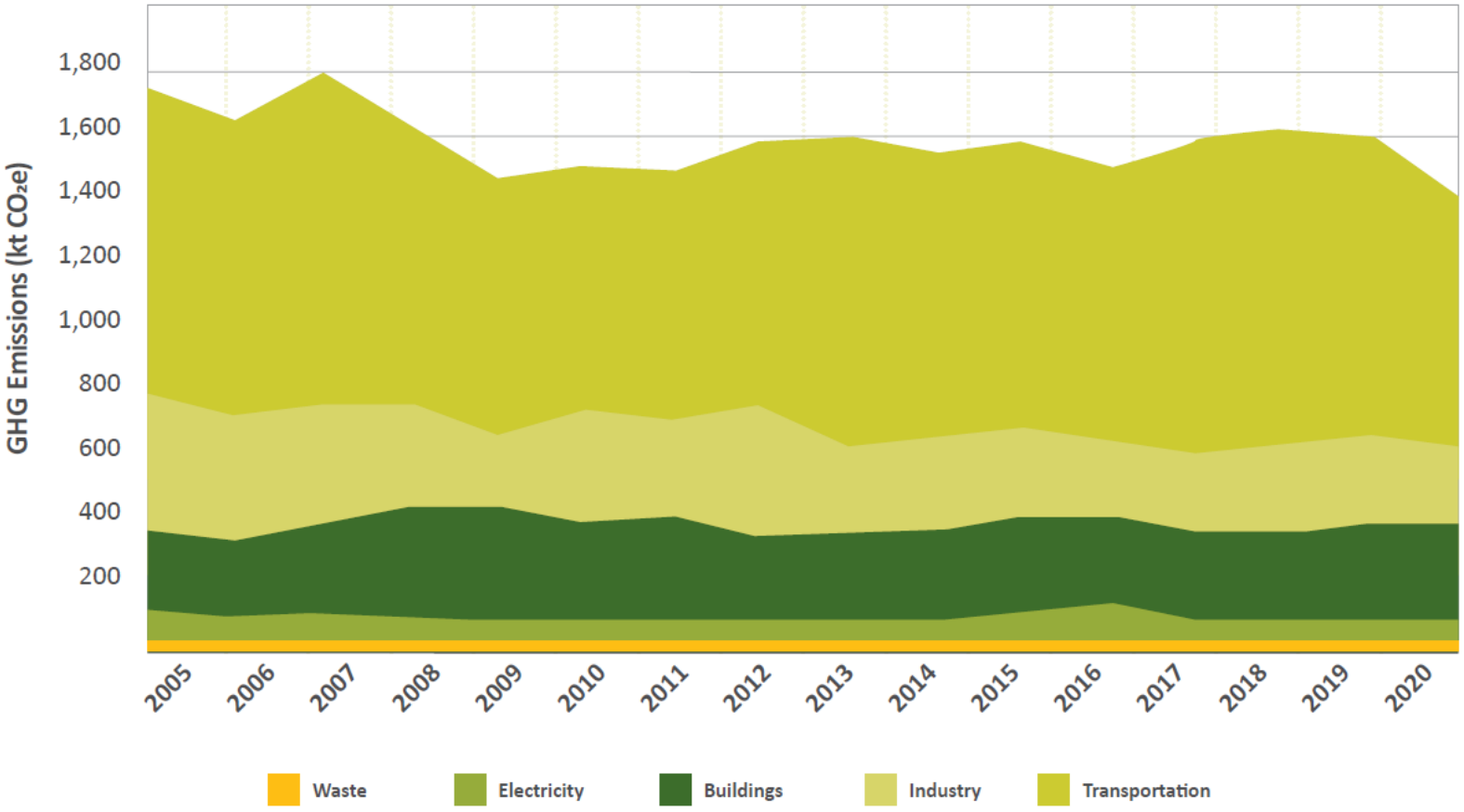
- Work together to find solutions: community engagement, participation and empowerment.
- Reduce GHG emissions from electricity generation in diesel powered communities by an average of 25%.
- Reduce GHG emissions from transportation by 10% per capita.
- Increase the share of renewable energy used for space-heating to 40%.
- Increase residential, commercial and government building energy efficiency by 15%.
- A longer-term vision: develop the NWT's energy potential, address industry emissions, and do our part to meet national climate change objectives.

THE SCALE OF THE ISSUE

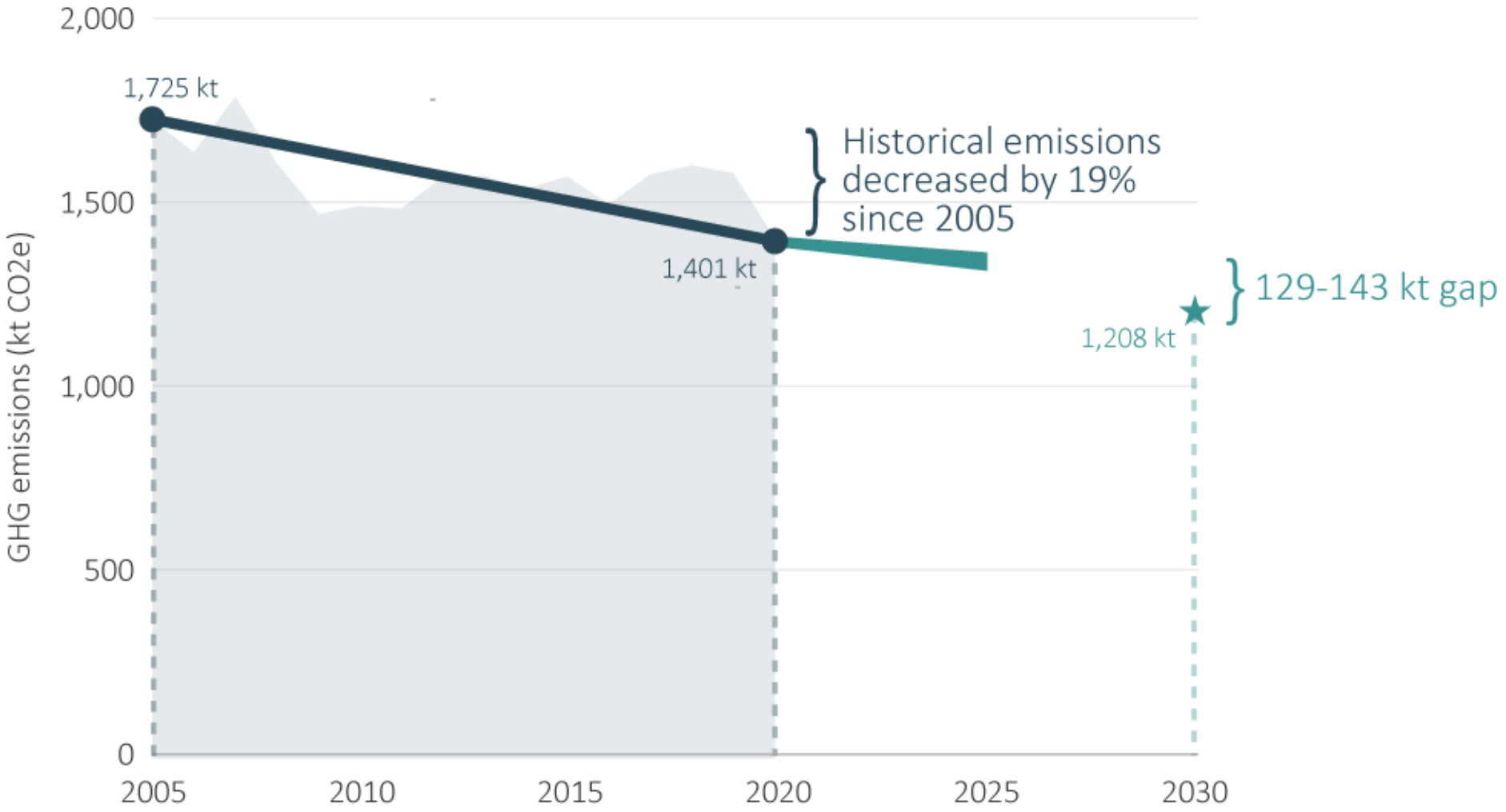


SCALE OF THE ISSUE

Figure 5. NWT Greenhouse Gas Emissions between 2005 and 2020



NWT EMISSIONS TREND AND TARGET



ENERGY STRATEGY INVESTMENTS TO DATE

STRATEGIC OBJECTIVE	2018-2019	2019-2020	2020-2021	2021-2022
1. Working Together	N/A	$103,000	$807,000	$585,000
2. Electricity		$12,444,000	$21,480,000	$36,287,000
3. Transportation		$421,000	$530,000	$823,000
4 & 5. Energy Efficiency and Space Heating		$9,379,000	$10,368,000	$12,480,000
6. Long Term Vision		$3,492,000	$4,872,000	$2,716,000
Total	**$21,000,000**	**$25,837,000**	**$38,007,000**	**$52,891,000**

ENERGY STRATEGY RESULTS

	2018 (Actual)	2019 (Actual)	2020 (Actual)	2021 (Actual)	2022 (Forecast)	2023 (Forecast)	2024 (Forecast)	2025 (Forecast)
Emissions Reduction (kt)	3.8	7.4	11.1	12.8	22.2	34.0	46.3	50.6
Fuel Savings (M of L)	1.4	2.7	4.1	4.7	8.2	12.6	17.1	18.7
Millions Saved (@$1.50/L)	$2.1	$4.1	$6.1	$7.1	$12.3	$18.8	$25.7	$28.0

- Funded initiatives under the Strategy will result in about 51 kt of GHG emissions reduction by 2025
- The represents annual fuel savings of 19 ML or about $28M (@$1.50/L) in 2025.
- This represents a cumulative $104M in fuel savings over 8 years
- We are also investing in NTPC capital plan resulting in about $120M in electricity rates savings by 2030

NEW ACTION PLAN FUNDING BY OBJECTIVE

Strategic Objective	Number of Initiatives	Funding ($1,000)			Total ($1,000)	GHG Reduction in 2025 (t CO_2e)
		2022-2023	2023-2024	2024-2025		
1. Working together	10	$3,185	$975	$2,150	$6,310	3,297
2. 25% Electricity	13	$14,060	$37,500	$93,600	$145,160	12,100
3. 10% Transport	11	$512	$1,502	$ 250	$2,264	525
4. & 5. 40% Heat & 15% Energy Efficiency	23	$8,380	$8,500	$7,375	$24,255	16,126
6. Long-term Vision and Industry	11	$6,325	$9,745	$ 250	$16,320	-
Total	68	$32,462	$58,222	$103,625	$194,309	32,048

NEW ACTION PLAN FUNDING BY SOURCE

Source of Funding	Funding ($1,000)			Total ($1,000)	GHG Reduction in 2025 (t CO_2e)
	2022-2023	2023-2024	2024-2025		
CARF	$3,800	$3,800	$3,800	$11,400	6,596
GNWT Core	$1,800	$1,890	$1,750	$5,440	-
GNWT-LCELF	$5,775	$3,275	-	$9,050	8,639
GNWT-NRCan	$212	$212	-	$424	-
GNWT-ICIP	$12,500	$27,000	$54,000	$93,500	10,100
New GNWT Core	$375	$1,830	-	$2,205	859
NEW FEDERAL FUNDING	-	-	$5,475	$5,475	3,854
ICIP	$500	$9,400	$38,600	$48,500	2,000
CIRNAC (TALTSON EXPANSION)	$4,000	$6,765	-	$10,765	-
CIRNAC (other projects)	$2,050	$2,550	-	$4,600	-
Housing NWT/CIRNAC/NRCan	$1,450	$1,500	-	$2,950	-
Total	$32,462	$58,222	$103,625	$194,309	32,048

1. WORKING TOGETHER

Select Initiatives:	Support community-led energy projects
	Continue communications and outreach
	Policy direction to PUB to address community renewable self-generation caps
	Continue GHG Grant Program for Government until 2024
	Re-invest in a GHG grant program aimed at governments and communities in 2025

2. 25% ELECTRICITY

Select Initiatives:	Update net-metering policy and clarify support to IPPs
	NTPC hydro asset overhauls
	Advance 2 community LNG projects
	Complete Inuvik Wind Project
	Initiate construction of Fort Providence T-line
	Advance Whati transmission line

3. 10% TRANSPORT

Select Initiatives:	Do a trial of renewable diesel
	Develop and launch level II EV charging station rebate program
	Continue to work with the federal government on emissions reductions in the transportation sector
	Support transportation initiatives through the GHG Grant Programs
	Advance the EV fast charger corridor

4. & 5. 40% HEAT & 15% ENERGY EFFICIENCY

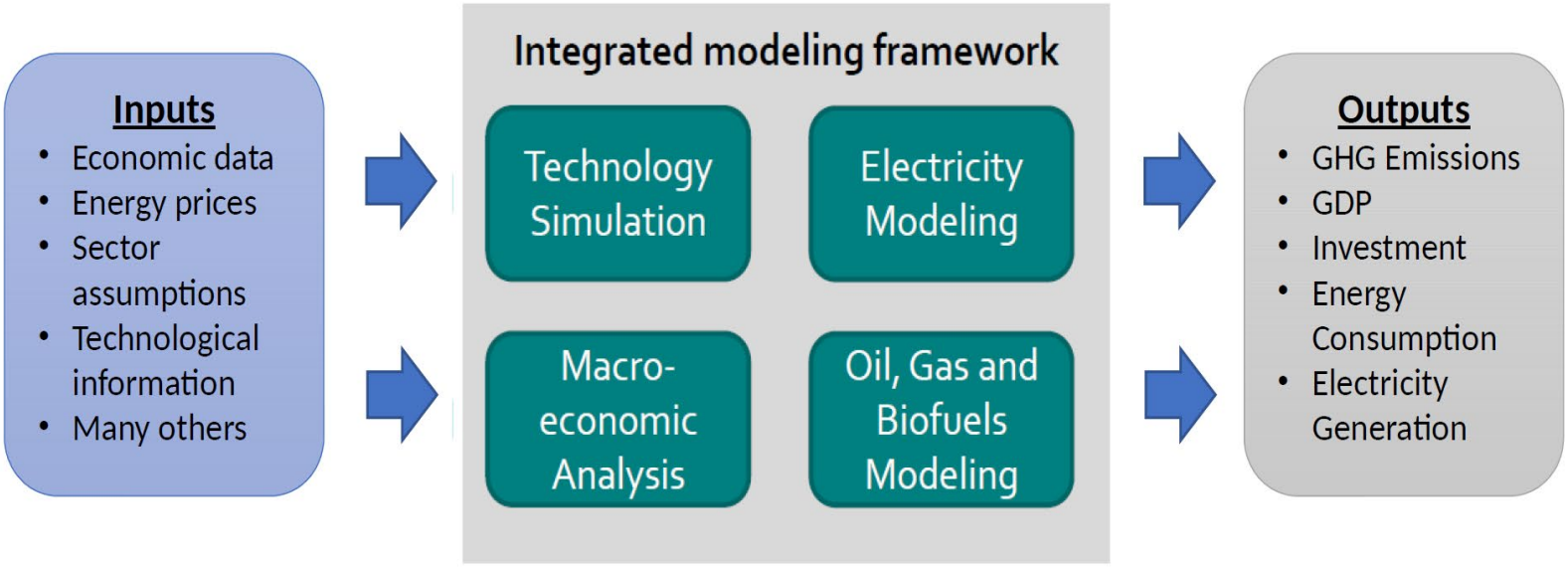
Select Initiatives:	Continue core AEA and CARF programs
	Continue enhanced AEA programs until 2024
	Review energy efficiency program as part of Energy Strategy Review
	Continue GHG Grant program for Building until 2024
	AEA and GHG grant replacement programs in 2025 under re-capitalized LCELF

6. LONG-TERM VISION AND INDUSTRY

Select Initiatives:	NWT Hydro potential and transmission study
	5-year review of the 2030 Energy Strategy
	Develop 2030 and 2050 GHG reduction pathways
	Advance the Taltson Expansion Project
	Hydrogen potential study
	Assess the potential for electrification and future electricity demand and infrastructure needs

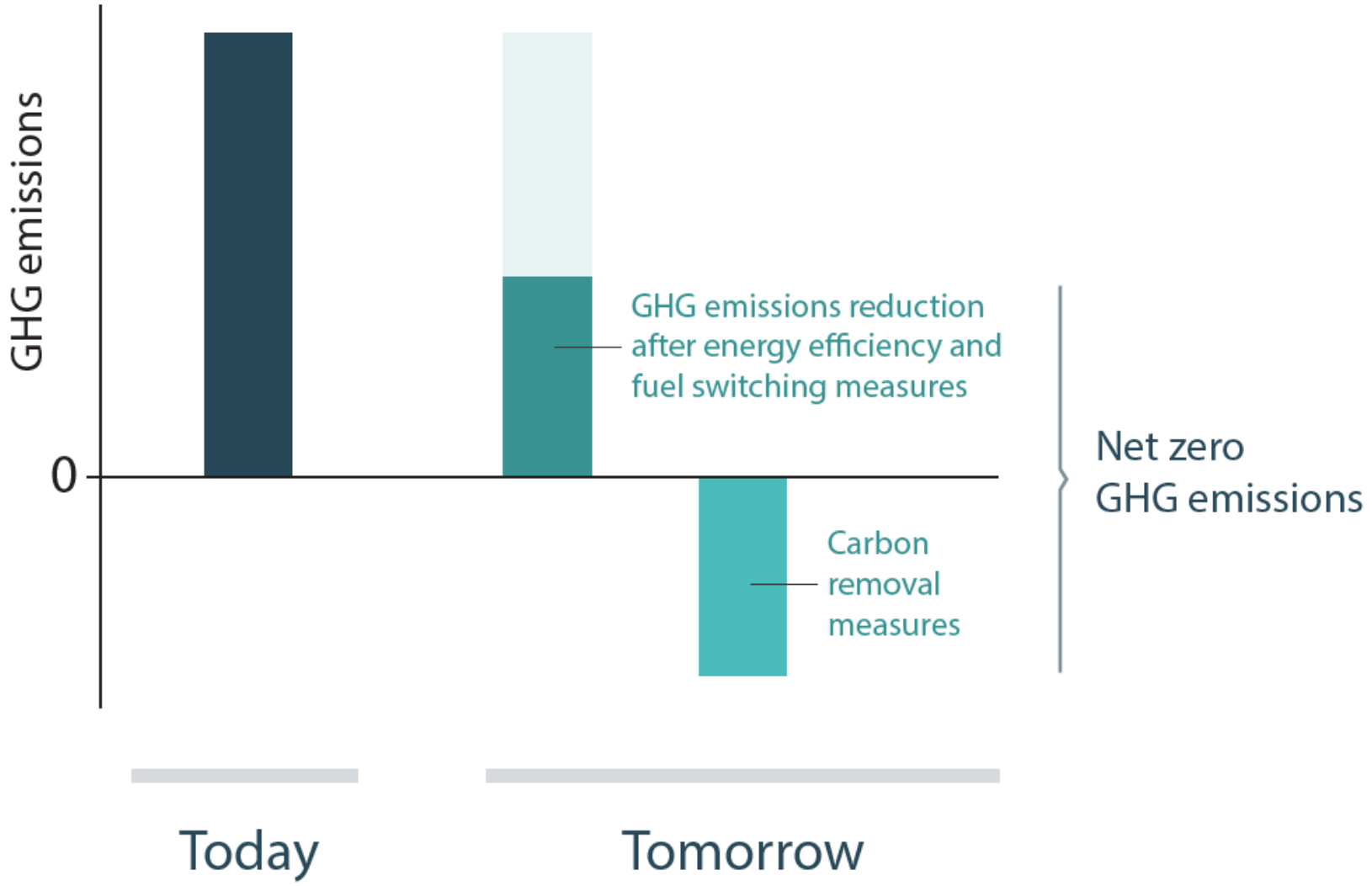
ENERGY-ECONOMY MODELING AND 2050 PATHWAYS

Navius Research energy-economy general equilibrium model



navius research

NET-ZERO PATHWAYS - WHAT DOES THIS MEAN FOR US?



NWT NET-ZERO PATHWAY WORK

End Use Measures

- Electrification
- Energy efficiency and conservation
- Fuel switching: biofuels, hydrogen

Zero Emission Electricity

- Firm renewables: hydro
- Intermittent renewable: solar, wind, batteries
- Alternative energy: nuclear, hydrogen

Carbon Removal

- Carbon capture and storage
- Direct Air Capture
- Nature based solutions
- Carbon offset produced elsewhere

5-YEAR ENERGY STRATEGY REVIEW

The GNWT committed to review the 2030 Energy Strategy after 5 years. This means 2023.

The world has changed significantly since 2018

Initial steps:

- Develop the process of the review and frame the issues
- Use Navius results to start a conversation about pathways and targets

The review will certainly seek public, stakeholder and Indigenous government input.

ARCTIC ENERGY ALLIANCE

The Arctic Energy Alliance (AEA) delivers programs and services to help Northerners conserve energy, become more energy efficient, and adopt alternative sources of energy

AEA's programs are central to meeting the 2030 Energy Strategy's goals and objectives

2021-22:

Budget of $6.8M

$1.8M in direct rebates

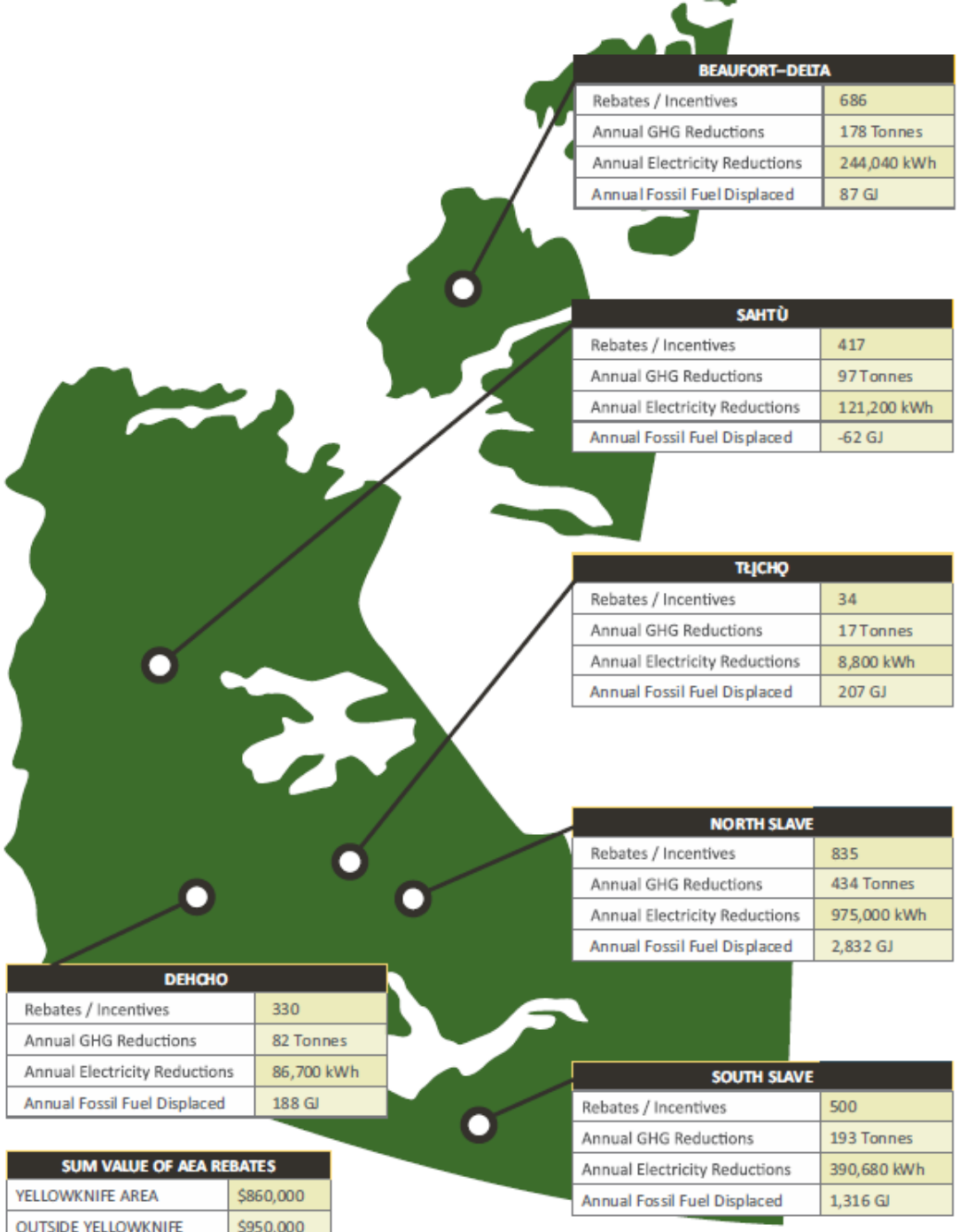
Remainder to provide programs and services in 6 regional offices

AEA 2021-22 FUNDING SOURCES

Programs (2021-2022)	Allocated Budget ($)	Actual Spend ($)
GNWT base and core funding	2,740,000	2,738,000
LCELF supplementary project funding (LCELF top-up)	1,804,000	1,034,000
LCELF new project funding	2,026,000	669,000
GNWT – Infrastructure one-time funding for EV Incentive program	100,000	69,000
GNWT – Environment and Natural Resources funding	42,000	42,000
GNWT – Anti-poverty funding	43,000	43,000
Total	6,755,000	4,595,000

NEW ENERGY ACTION PLAN AEA FUNDING

New Action Plan Funding for the AEA	2022-23	2023-24
Electric Vehicle Rebate Program	$100,000	$200,000
Additional Energy Auditing Capacity	$75,000	$150,000
Low Income Program to address Energy Poverty	--	$200,000
Community Energy Planning Support	--	$200,000
Youth Energy Mentorship	--	$50,000
Electric on-the-land vehicle rebate	--	$20,000
Electric Bicycle rebate	--	$10,000
Total	$175,000	$830,000



BEAUFORT–DELTA	
Rebates / Incentives	686
Annual GHG Reductions	178 Tonnes
Annual Electricity Reductions	244,040 kWh
Annual Fossil Fuel Displaced	87 GJ

SAHTÙ	
Rebates / Incentives	417
Annual GHG Reductions	97 Tonnes
Annual Electricity Reductions	121,200 kWh
Annual Fossil Fuel Displaced	-62 GJ

TŁ̨CHǪ	
Rebates / Incentives	34
Annual GHG Reductions	17 Tonnes
Annual Electricity Reductions	8,800 kWh
Annual Fossil Fuel Displaced	207 GJ

NORTH SLAVE	
Rebates / Incentives	835
Annual GHG Reductions	434 Tonnes
Annual Electricity Reductions	975,000 kWh
Annual Fossil Fuel Displaced	2,832 GJ

DEHCHO	
Rebates / Incentives	330
Annual GHG Reductions	82 Tonnes
Annual Electricity Reductions	86,700 kWh
Annual Fossil Fuel Displaced	188 GJ

SOUTH SLAVE	
Rebates / Incentives	500
Annual GHG Reductions	193 Tonnes
Annual Electricity Reductions	390,680 kWh
Annual Fossil Fuel Displaced	1,316 GJ

SUM VALUE OF AEA REBATES	
YELLOWKNIFE AREA	$860,000
OUTSIDE YELLOWKNIFE	$950,000

SELECT AEA PROGRAM RESULTS

ENERGY EFFICIENCY INCENTIVE PROGRAM

2,528
rebates provided.

LED lighting continues to be the most popular eligible product.

1,436
LED Rebates

478 more than last year.

Combined, the energy efficient products purchased will save the NWT **550 tonnes** of greenhouse gases annually — more than any other AEA program this year.

SELECT AEA PROGRAM RESULTS

ALTERNATIVE ENERGY TECHNOLOGIES PROGRAM

65 Rebates provided

The **65** systems that the AEA's clients installed are expected to save roughly **320** tonnes of greenhouse gases a year.

The average system is expected to pay for itself in less than five years.

DEEP HOME ENERGY RETROFIT PROGRAM

Completed **26** home energy evaluations, and provided **10** final rebates worth **$91,000**, plus an additional five interim rebates valued at **$23,000**.
Five post-retrofit evaluations were also conducted under the program.

Combined, the **10** clients with completed projects are expected to save **480 GJ** of heating fuel a year — equivalent to the energy contained in 1,000 propane cylinders for home barbecues.

SELECT AEA PROGRAM RESULTS

COMMERCIAL ENERGY CONSERVATION AND EFFICIENCY PROGRAM

Provided **30** rebates

The average client project will pay for itself through energy savings in just over three years.

Combined, annual electricity consumption avoided by all clients' projects is roughly 100,000 kWh more than the amount of annual electricity used in the community of Nahanni Butte.

SELECT AEA PROGRAM RESULTS

COMMUNITY WOOD STOVE PROGRAM

Completed a two-year project that began in 2019-2020 and began a new project.

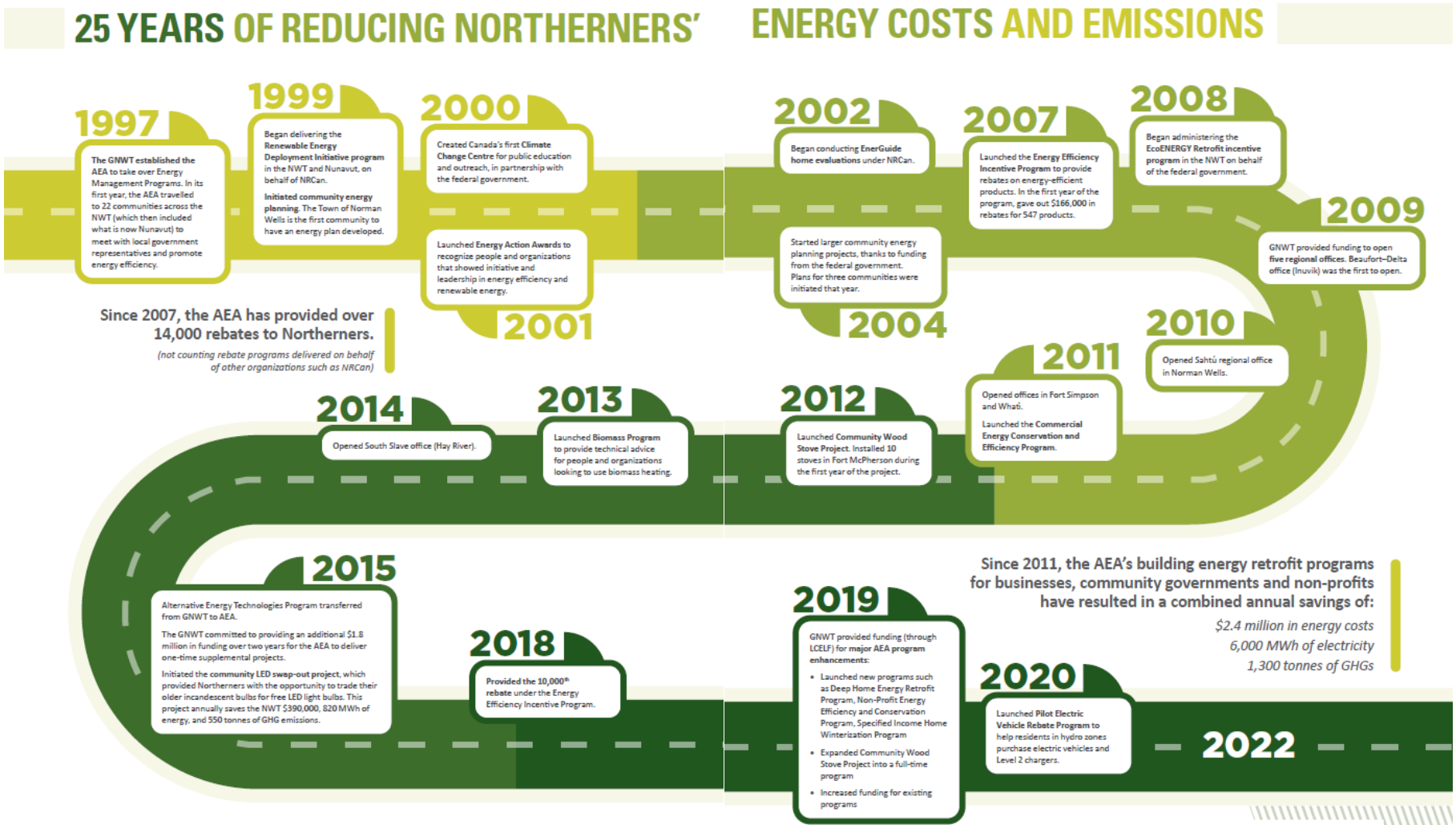
Coordinated the installation of **52** stoves in six partner communities.

Combined, all installed stoves will save **2,800 kg** of particulate emissions *(a 96% decrease)* and **19 tonnes** of greenhouse gas emissions a year.

Savings from the **52** wood stoves installed in 2021-2022 *compared to heating with oil alone*

Heating oil displaced in litres:	Annual GHG reductions:	Annual savings:
99,000	270 Tonnes	$140,000

AEA 25 YEARS


25 YEARS OF REDUCING NORTHERNERS' ENERGY COSTS AND EMISSIONS
1997
The GNWT established the AEA to take over Energy Management Programs. In its first year, the AEA travelled to 22 communities across the NWT (which then included what is now Nunavut) to meet with local government representatives and promote energy efficiency.
1999
Began delivering the Renewable Energy Deployment Initiative program in the NWT and Nunavut, on behalf of NRCan.
Initiated community energy planning. The Town of Norman Wells is the first community to have an energy plan developed.
2000
Created Canada's first Climate Change Centre for public education and outreach, in partnership with the federal government.
2001
Launched Energy Action Awards to recognize people and organizations that showed initiative and leadership in energy efficiency and renewable energy.
Since 2007, the AEA has provided over 14,000 rebates to Northerners.
(not counting rebate programs delivered on behalf of other organizations such as NRCan)
2002
Began conducting EnerGuide home evaluations under NRCan.
2004
Started larger community energy planning projects, thanks to funding from the federal government. Plans for three communities were initiated that year.
2007
Launched the Energy Efficiency Incentive Program to provide rebates on energy-efficient products. In the first year of the program, gave out $166,000 in rebates for 547 products.
2008
Began administering the EcoENERGY Retrofit incentive program in the NWT on behalf of the federal government.
2009
GNWT provided funding to open five regional offices. Beaufort–Delta office (Inuvik) was the first to open.
2010
Opened Sahtú regional office in Norman Wells.
2011
Opened offices in Fort Simpson and Whatì.
Launched the Commercial Energy Conservation and Efficiency Program.
2012
Launched Community Wood Stove Project. Installed 10 stoves in Fort McPherson during the first year of the project.
2013
Launched Biomass Program to provide technical advice for people and organizations looking to use biomass heating.
2014
Opened South Slave office (Hay River).
2015
Alternative Energy Technologies Program transferred from GNWT to AEA.
The GNWT committed to providing an additional $1.8 million in funding over two years for the AEA to deliver one-time supplemental projects.
Initiated the community LED swap-out project, which provided Northerners with the opportunity to trade their older incandescent bulbs for free LED light bulbs. This project annually saves the NWT $390,000, 820 MWh of energy, and 550 tonnes of GHG emissions.
2018
Provided the 10,000th rebate under the Energy Efficiency Incentive Program.
2019
GNWT provided funding (through LCELF) for major AEA program enhancements:
• Launched new programs such as Deep Home Energy Retrofit Program, Non-Profit Energy Efficiency and Conservation Program, Specified Income Home Winterization Program
• Expanded Community Wood Stove Project into a full-time program
• Increased funding for existing programs
Since 2011, the AEA's building energy retrofit programs for businesses, community governments and non-profits have resulted in a combined annual savings of:
$2.4 million in energy costs
6,000 MWh of electricity
1,300 tonnes of GHGs
2020
Launched Pilot Electric Vehicle Rebate Program to help residents in hydro zones purchase electric vehicles and Level 2 chargers.
2022

Questions?