

2021 Distribution In-Franchise Sales Customer Webinar

Agenda



Agenda Item	Speaker
Welcome	Greg Smart, Account Manager
Safety Moment: Prepare Your Vehicle For Winter	Brandon Ramsundar, Account Manager
Opening Remarks	Cynthia Hansen, EVP and President, Gas Distribution and Storage
Storage and Operational Updates	Anand Krishnan, Manager, Capacity Planning & Measurement Integrity
Regulatory Updates	Anton Kacicnik, Manager, Regulatory Applications
On-Going and Future Projects	Matthew Ciupka, Specialist, Economic Development
Energy Conservation	Igor Mozetic, Supervisor, Energy Conversation Sales
Advancing The Energy Transition	Jennifer Murphy, Supervisor, Carbon Strategy
The Future of Clean Energy: Renewable Natural Gas	Steve Rakidzioski, Specialist RNG, Business Development
Enbridge and Hydrogen in The Energy Transition	Samuel McDermott, Technical Manager, Business Development
Carbon Sequestration	Wayne Passmore, Technical Manager, Execution & Special Projects
Q&A	Brandon Ramsundar, Account Manager
Closing Remarks	Tanya Mushynski, VP, Customer Care

Safety Moment: Prepare Your Vehicle For Winter

Prepare Your Vehicle For Winter

1. Install Winter Tires

- Use four matched winter tires that carry the mountain/snowflake symbol
- Ensure the tread on your tires is no less than 3.5mm – even when driving a 4x4 vehicle
- Winter tires improve driving safety by providing better traction in snow, slush and icy conditions
- Check for wear before installing the tires and check tire air pressure frequently (tire pressure decreases in cold weather)



2. Get Your Vehicle Winter Ready With A Maintenance Check

- Battery
- Brakes
- Cooling and heating systems
- Electrical system (lights, fuses, etc...)
- Exhaust and intake systems
- Belts and hoses

Prepare Your Vehicle For Winter

3. Change Wiper Blades

- Change your wiper blades to winter blades
- These blades help push heavier snow and ice easily



4. Clear Snow and Ice From All Windows, Lights, Mirrors, Hood and Roof

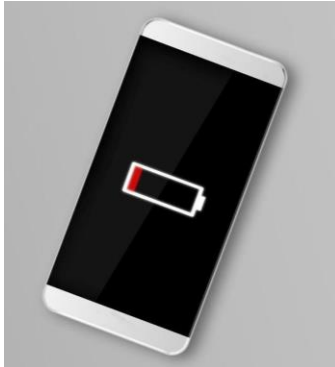
- After starting your vehicle, wait for the window to defrost completely to allow clear visibility all around
- Physically clear any remaining snow or ice



Prepare Your Vehicle For Winter

5. If You Have A Cell Phone, Make Sure It Is Charged And Bring It With You

- A vehicle charger for the phone is a smart device to have on hand
- Cell phone batteries can freeze in very cold weather, don't leave your phone in the vehicle for extended periods of time



6. Make Sure Your Windshield Washer Reservoir Is Full And Carry Extra Washer Fluid In Your Vehicle



Prepare Your Vehicle For Winter

7. Be prepared by packing a winter survival kit. Recommended items include:

- Emergency kit containing non-perishable food, blankets and first aid supplies
- Windshield scraper and snow brush
- Extra windshield washer fluid
- Spare tire, wheel wrench and jack
- Shovel and traction mat, sand or kitty litter
- Fuel line antifreeze
- Flares and matches or lighter
- Tire chains and gloves
- Flashlight and extra batteries
- Battery jumper cables
- Extra clothing and footwear
- Sandbags for extra weight

Prepare Your Vehicle For Winter

8. Keep Your Gas Tank Topped Up

- This will help to avoid condensation and moist air inside of the tank, which can cause fuel lines to freeze and other serious issues



Opening Remarks



Cynthia Hansen
EVP and President, Gas Distribution and Storage

Storage & Operational Updates

Operational Status & Notices



[Home](#) / [Storage & Transportation](#) / [Operational Information](#)

Operational Status & Notices

[Operational notice](#) [Overall operational status](#) [Transportation operational status](#) [Storage operational status](#) [Distribution service area status](#)

Operational notice

Dawn to Dawn Storage Injections

Nov 09, 2021 7:39 AM

The operational status for the Dawn to Dawn Storage injections has turned green for Gas Day November 9th and forward. The T11/21/23 Storage Injection Overrun status will be set to authorized starting Gas Day November 9th and forward.

[Expand to read notice](#)

Overall Operational Status

	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
	🟢	🟢	🟢	🟢

Transportation Operational Status

Parkway	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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From Dawn	🟢	🟢	🟢	🟢
To Dawn	🟢	🟢	🟢	🟢

Kirkwall	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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From Dawn	🟢	🟢	🟢	🟢
To Dawn	🟢	🟢	🟢	🟢
From Parkway	🟢	🟢	🟢	🟢
To Parkway	🟢	🟢	🟢	🟢

Albion	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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From Parkway	🟢	🟢	🟢	🟢
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St. Clair	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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From Dawn	🟢	🟢	🟢	🟢
To Dawn	🟢	🟢	🟢	🟢

Blawieater	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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From Dawn	🟢	🟢	🟢	🟢
To Dawn	🟢	🟢	🟢	🟢

Vesitor	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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From Dawn	🟢	🟢	🟢	🟢
To Dawn	🟢	🟢	🟢	🟢

Dawn-TCPL	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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From Dawn	🟢	🟢	🟢	🟢
To Dawn	🟢	🟢	🟢	🟢

ANI Link	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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From Dawn	🟢	🟢	🟢	🟢
To Dawn	🟢	🟢	🟢	🟢

Opitsey	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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From Dawn	🟢	🟢	🟢	🟢
To Dawn	🟢	🟢	🟢	🟢

Legend

- 🟢 No capacity constraints.
- 🟡 Interruption services potentially impacted.
- 🔴 Firm services impacted.

Subscribe for status notifications

When you subscribe, you'll automatically get personalized email notifications with highlights of the overall status saving you time.

[Subscribe today](#)

Storage Operational Status

	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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Dawn Storage	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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From Dawn (injections)	🟢	🟢	🟢	🟢
To Dawn (Withdrawals)	🟢	🟢	🟢	🟢

Distribution Service Areas Status

	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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North East and North West	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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Sudbury - Temnans	🟢	🟢	🟢	🟢
Thunder Bay	🟢	🟢	🟢	🟢
Sault Ste. Marie	🟢	🟢	🟢	🟢
Fort Francis	🟢	🟢	🟢	🟢
Kingston	🟢	🟢	🟢	🟢
Muskoka	🟢	🟢	🟢	🟢

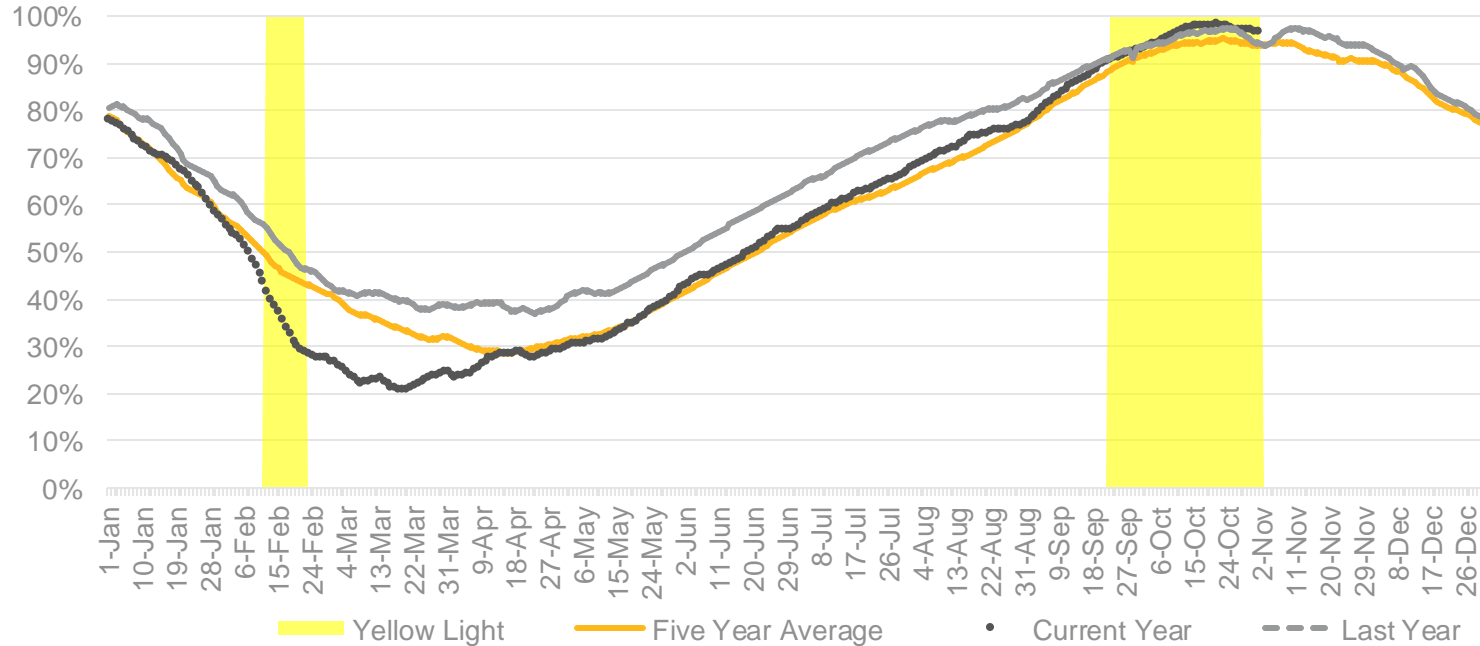
Central	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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Toronto	🟢	🟢	🟢	🟢
Peel	🟢	🟢	🟢	🟢
York	🟢	🟢	🟢	🟢
Durham	🟢	🟢	🟢	🟢
Niagara	🟢	🟢	🟢	🟢
Ottawa - Peterborough	🟢	🟢	🟢	🟢

Southern	November 19, 2021	November 20, 2021	November 21, 2021	November 22, 2021
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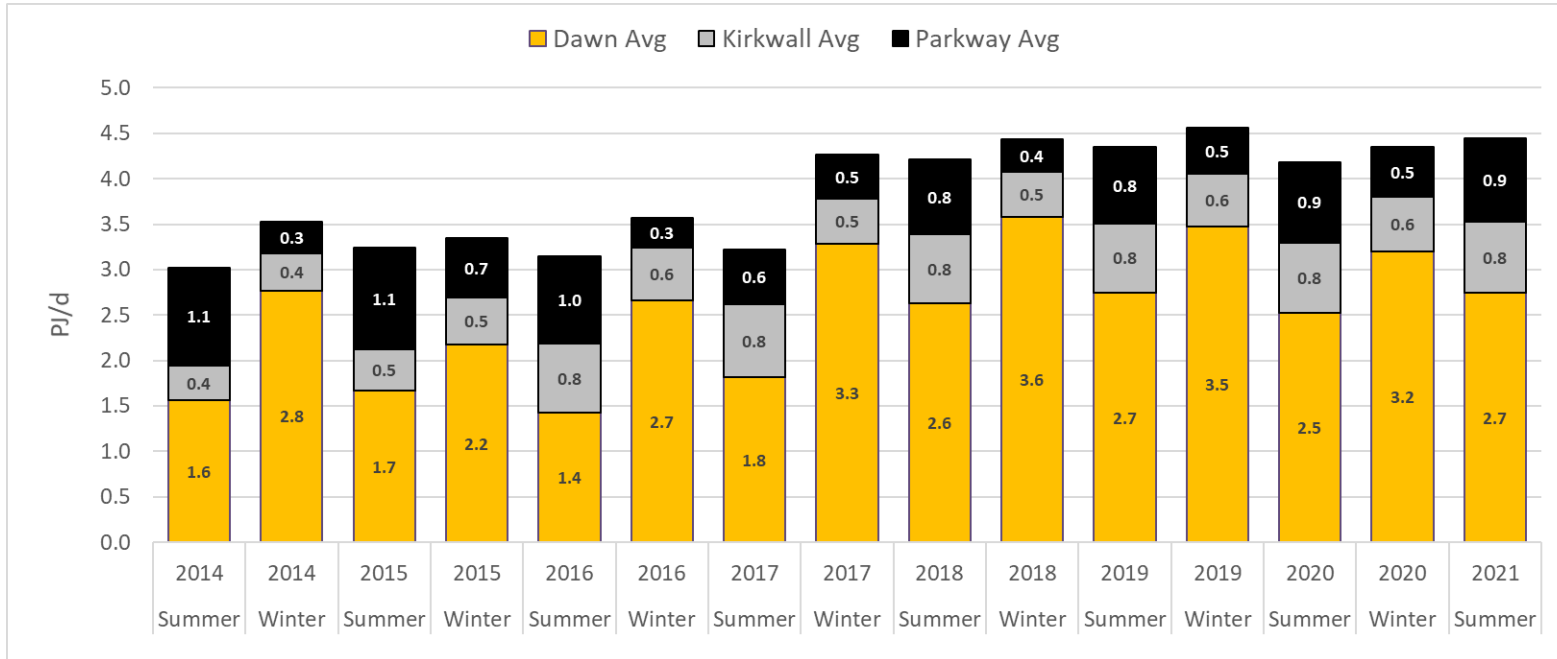
South West	🟢	🟢	🟢	🟢
Sarnia	🟢	🟢	🟢	🟢
Stratford - Goderich	🟢	🟢	🟢	🟢
London	🟢	🟢	🟢	🟢
Brantford - Hamilton	🟢	🟢	🟢	🟢
Burlington - Cambridge	🟢	🟢	🟢	🟢
Waterloo - Owen Sound	🟢	🟢	🟢	🟢

Storage - Percentage Full



Peak at 98.3% of available space

Supplies at Dawn, Kirkwall & Parkway (PJ/d)



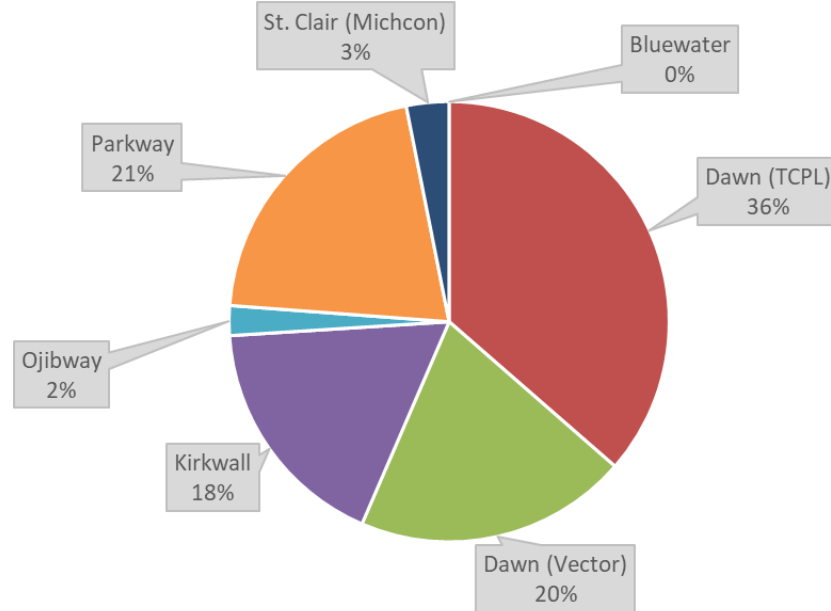
Dawn receipts up 0.2 PJ/d from Summer 2020

Pipeline Receipts

Pipeline Receipts

Summer 2021

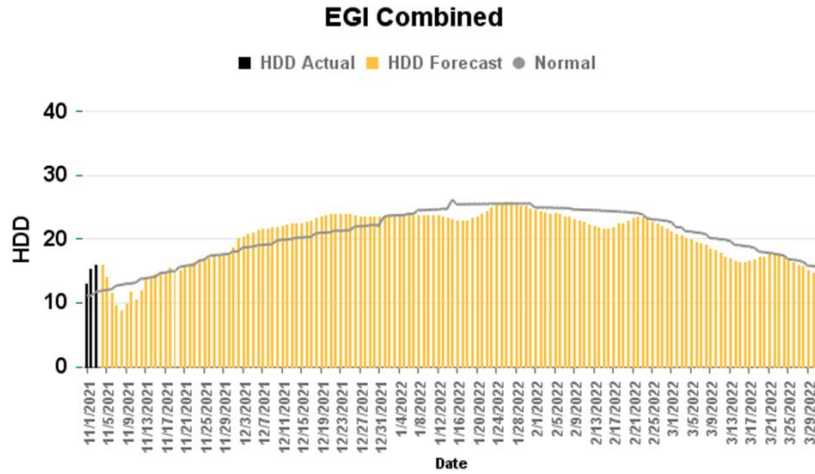
- Bluewater
- Dawn (TCPL)
- Dawn (Vector)
- Kirkwall
- Ojibway
- Parkway
- St. Clair (Michcon)



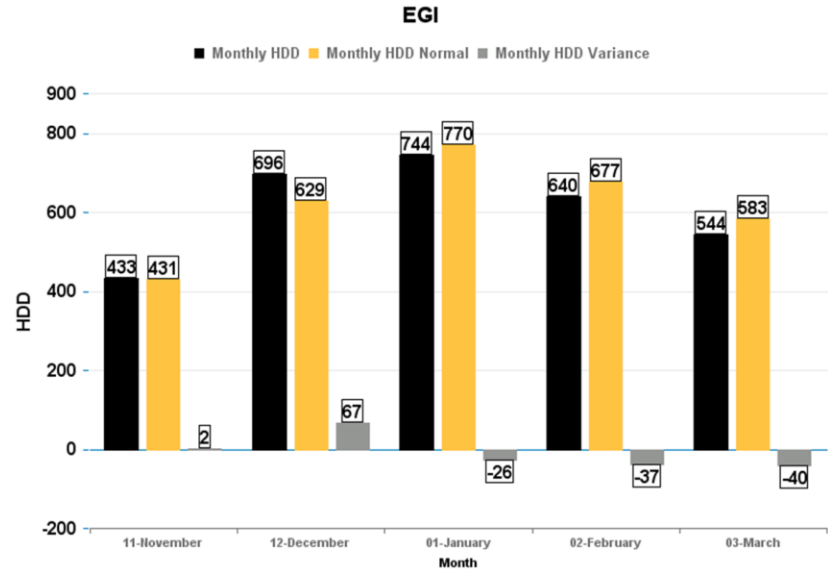
Weather & EGI Merged HDD Forecast



Daily HDD



HDD by Month



Regulatory Updates

2019 – 2023 Price Cap Framework

Price Cap Framework:

- Deferred rebasing period of five years
 - Cost of service rebasing application to be filed for 2024 rates
- Maintain existing rate structures and rate zones until rebasing
- Annual rate adjustments based on a Price Cap framework
- Earnings sharing mechanism
- Incremental Capital Module (ICM) available for funding of major qualifying capital projects

Annual Rate Adjustment Formula

$$= (I - X - S) \pm Y \pm Z + \text{ICM}$$

Phase 1 Phase 2

Where rates are a function of:

- | | | | |
|-----|---|--|---|
| I | = | An inflation factor | } (I - X - S) =
Price Cap
Index
or (PCI) |
| X | = | A zero Productivity factor | |
| S | = | A 0.3% Stretch factor | |
| Y | = | Certain predetermined pass-through adjustments (gas supply costs, DSM) | |
| Z | = | Certain non-routine adjustments | |
| ICM | = | Incremental Capital Module rate riders | |

2022 Rates Adjustment Application

- 2022 Rates application carried out in two phases
- Phase 1: approved Price Cap (PCI) + Y factor rates
 - Settlement Proposal approved October 28, 2021
- Phase 2: proposed Incremental Capital Module (ICM) rates
 - Application filed Oct. 15, 2021

Rate Zone	Rate Class	Direct Purchase Bill Impacts			Total Bill (incl Gas Costs)
		Phase 1 (PCI + Y)	Phase 2 (ICM)	Total	
EGD	100	1.4%	0.4%	1.8%	0.7%
	110	2.4%	0.6%	3.0%	0.4%
	115	7.3%	0.8%	8.1%	0.7%
	135	4.5%	0.0%	4.5%	0.6%
	145	17.6%	0.0%	17.6%	4.4%
	170	18.8%	0.1%	18.9%	0.7%
Union South	M4	4.5%	-0.1%	4.4%	0.8%
	M5	3.5%	0.0%	3.5%	0.6%
	M7	-2.7%	0.0%	-2.7%	-0.3%
	M9	1.2%	-0.1%	1.1%	0.2%
	T1	1.4%	0.0%	1.4%	0.1%
	T2	0.2%	-0.1%	0.1%	0.0%
	T3	2.5%	0.0%	2.5%	0.3%
Union North	20	0.7%	0.1%	0.8%	0.2%
	100	1.0%	1.1%	2.1%	0.1%
	25	1.6%	0.6%	2.2%	0.3%

2020 Deferrals Application

- Settlement Proposal approved Oct. 21, 2021
 - One unsettled issue to be addressed through a written hearing
- Enbridge Gas did not have earnings sharing in 2020
- Customers can apply preliminary unit rates to volumes consumed in 2020 to estimate their disposition amounts
- Final unit rates expected to be disposed of to customers in conjunction with April 1, 2022 QRAM

Rate Zone	Rate Class	System/ Western-T (cents/m ³)	Dawn-T/ Ontario-T (cents/m ³)
EGD	100	(0.0177)	0.0307
	110	(0.0083)	0.0401
	115	(0.0080)	0.0405
	135	(0.0075)	0.0410
	145	(0.0133)	0.0352
	170	(0.0073)	0.0411
		Delivery (cents/m³)	
Union South*	M4	(0.0372)	
	M5	(0.1818)	
	M7	(0.0076)	
	M9	(0.0024)	
	T1	(0.0427)	
	T2	(0.0246)	
	T3	(0.0095)	
Union North*	20	(0.0191)	
	100	(0.0128)	
	25	(0.0496)	

Regulatory Outlook

Applications: Active and Upcoming

2020 Deferrals and Earnings Sharing
2022 Rates - Phase 1 (PCI)

2022 Rates - Phase 2 (ICM)
2022 Federal Carbon



Rate Changes / Deferral Clearing

2021 Rates - Phase 2 (ICM)
2019 Deferrals Clearing

2019 DSM Deferrals Clearing

2022 Rates – Phase 1 (PCI)

2022 Federal Carbon Charges
2020 Deferral Clearing

2022 Rates - Phase 2 (ICM)
timing not yet determined

Other

- QRAM applications filed each quarter for gas cost rates effective Jan 1, April 1, July 1 and Oct 1
 - Determine upstream gas cost charges (commodity, transportation, etc.)
 - Quarterly process provides timely price signals to customers
 - Large natural gas price increase in Oct. 1, 2021 QRAM led to bill mitigation
- 2020 DSM Deferrals
- 2022-2027 DSM Framework

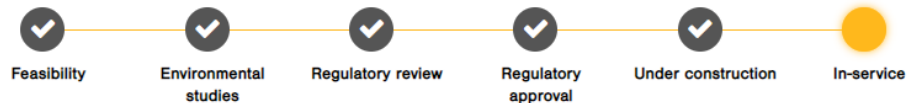
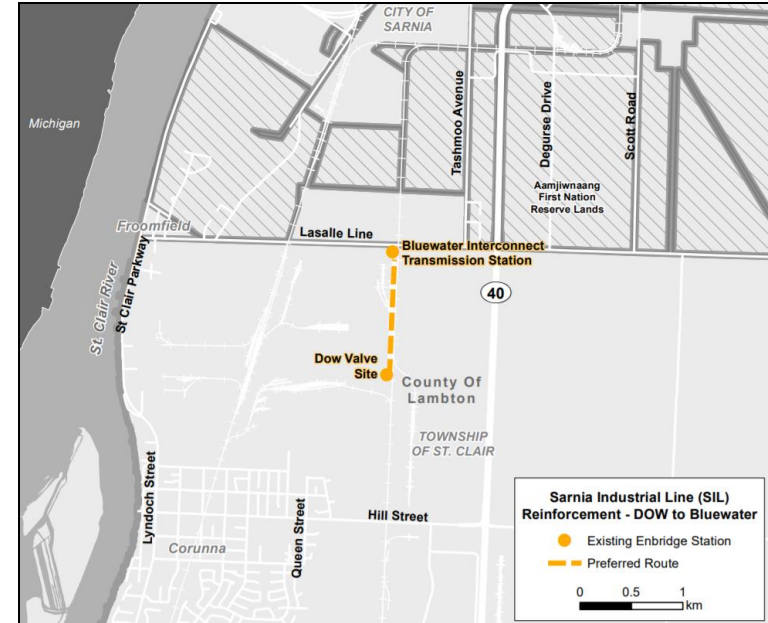
Ongoing and Future Projects

On-Going and Future Projects

- Sarnia Industrial Line Reinforcement Project
- Natural Gas Expansion Program – Phase 2
- Panhandle Regional Expansion Project
- Upcoming Project Applications

Sarnia Industrial Line Reinforcement Project

- Driven by an increase for natural gas by industry in the Sarnia-Lambton area
 - 1.2 km of 20” diameter pipe from the Dow Valve site to the Bluewater Interconnect at a new LaSalle Pipeline Valve site
- Project cost: \$31 million
- Status: In-service
 - OEB approval received March 2020
 - Commissioned for November 1, 2021
- Additional capacity will help serve NOVA Chemical Corporation’s Corunna Expansion and future area demands



Natural Gas Expansion Program (NGEP) Phase 2



\$214M

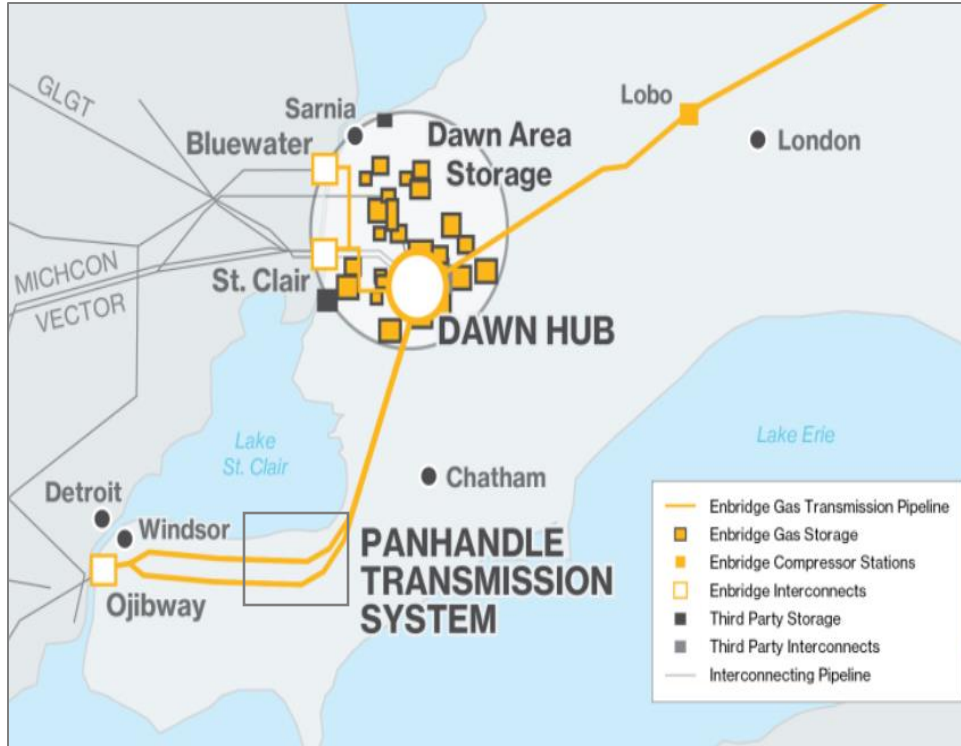
Total Phase 2 NGEP funding awarded to Enbridge Gas, supporting 27 projects

25 community expansion projects

2 economic development projects



Panhandle Regional Expansion Project (PREP)



Demand for natural gas across all sectors in Essex County and Western Chatham-Kent continues to grow.

- Non-Binding Expression of Interest conducted in Q1 2021
- Binding Reverse Open Season
- Leave-to-Construct application expected to be filed with OEB in Spring of 2022
- If approved, construction would begin in Spring 2023
- Targeting a November 2023 in-service date for transmission & distribution facilities

Facility/Capital Project Applications

PROJECT	OEB CASE #	APPLICATION DATE
Corunna & Ladysmith Storage	EB-2021-0079	active
St. Laurent Ottawa North Replacement	EB-2020-0293	active
Greenstone Pipeline	EB-2021-0205	active
2022 Storage Enhancement	EB-2021-0078	Q4-2021
Coveny & Kimball-Colinville Well Drilling	EB-2021-0248	Q4-2021
Corunna Compressor	EB-2021-0271	Q4-2021
NPS 20 Waterfront Relocation	TBD	Q1-2022
Bobcaygeon <i>(NGEP Phase 2 - Community Expansion)</i>	TBD	Q1-2022
Hamilton Airport <i>(NGEP Phase 2 – Economic Development)</i>	TBD	Q2-2022
Grimsby-Lincoln <i>(NGEP Phase 2 – Economic Development)</i>	TBD	Q2-2022
Haldimand Shores <i>(NGEP Phase 2 – Community Expansion)</i>	TBD	Q2-2022
Cedar Springs <i>(NGEP Phase 2 – Community Expansion)</i>	TBD	Q2-2022
Panhandle Regional Expansion	TBD	Q2-2022
Port Stanley Replacement	TBD	Q2-2022
Kingston Lateral Reinforcement	TBD	Q2-2022



Energy Conservation

Let us help uncover savings









Igor Mozetic, P. Eng
Supervisor, Energy Conversation Sales

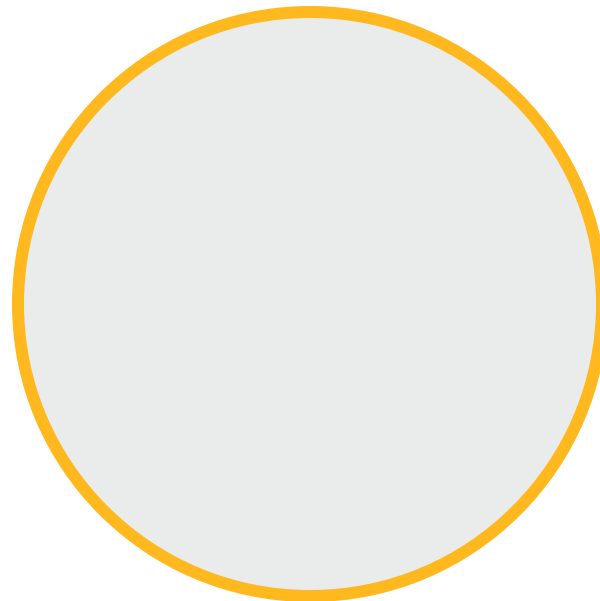
Long-term strategy to reduce energy costs



Controlling energy costs may seem complex

- Enbridge Gas Energy Solutions Advisors can help

-  Understand business needs and set goals
-  Identify and prioritize energy projects
-  Calculate estimated energy savings
-  Build business case
-  Provide technical support
-  Award financial incentives



Expert advice at every step

Energy Savings Beyond Natural Gas

- Systems rely on multiple energy sources
- Using natural gas more efficiently can save electricity and hot water
- Common opportunities include:



Less air infiltration

Lower heating costs, reduce electric fan use



Improve process heating

Consistent quality, improved throughput



Reduce water usage

Less heating, pump electricity and fresh water intake



Advancing The Energy Transition — Affordably and Reliably

Supporting Ontario's economic recovery



Jennifer Murphy, P. Eng
Supervisor, Carbon Strategy



Transition to Ontario's Emissions Performance Standards (EPS)

- Effective January 1, 2022, the Ontario Emissions Performance Standards (EPS) will replace the federal Output-Based Pricing System (OBPS) for large emitters in Ontario.
- Most customers who are currently exempt from the Federal Carbon Charge will maintain the same exemption certificate from CRA and will not need to take any steps with Enbridge Gas to continue receiving the exemption.
- If you register a new facility (not previously registered in OBPS), or if you receive an updated exemption certificate from CRA for an existing facility (example – change of facility ownership), you must provide Enbridge Gas with documentation in order to receive exemption from the Federal Carbon Charge in our billing system.
- Enbridge Gas requires the following three documents:
 1. Completed [Facility Declaration Form](#)
 2. CRA-issued registration confirmation letter
 3. CRA-issued exemption certificate

For more information visit:

<https://www.enbridgegas.com/business-industrial/commercial-industrial/large-volume-services-rates/federal-carbon-pricing>



Energy Transition in Ontario

- Enbridge exists to meet the energy needs of our customers, safely, reliably and affordably
- 75% of Ontario households depend on natural gas as an affordable energy choice, and many more rural and remote communities are looking to obtain gas service.
- At the same time municipalities, businesses and families are increasingly focused on lowering GHG emissions.
- Enbridge has the scale and experience to help society transition to a lower-emissions future.
- And across our business, we've committed to achieving net-zero GHG emissions in our own operations.



Building an Energy Transition Plan

Enbridge has allocated resources to:

- Monitoring energy transition
 - Reviewing and providing input on federal and provincial climate policies, codes and standards.
 - Participating in municipal energy planning.
- Evaluating energy transition impacts
 - Energy transition scenario analysis.
- Considering and including energy transition in long-term strategic plans



Greening Our Operations

- Reducing emissions from our own operations
 - Emissions from our operations (scope 1).
 - Emissions from the generation of electricity we purchase (scope 2).
- We are pursuing multiple pathways, strongly embedded in our strategy and business plans, including:
 - Modernization, technology and innovation improvements of existing infrastructure.
 - Decarbonizing our own energy use.
 - Investment in lower carbon projects and businesses.
 - Purchasing renewable energy credits and offset credits, including from nature-based solutions.



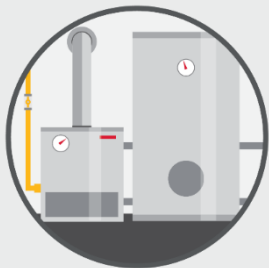
Eliminate GHG emissions from our business on a net basis (net zero) by 2050



Reduce the intensity of GHG emissions from our operations 35% by 2030

Enbridge Gas – Part of A Lower Carbon Future

Using less gas



- Energy conservation programs
- Hybrid heating – dual fuel space heating
- Natural gas heat pumps
- District energy systems

Non-gas solutions



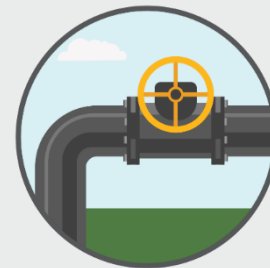
- Geothermal heat pumps for heating and cooling
- MicroGeneration: Low grade heat waste recovery
- Carbon capture utilization and storage (CCUS)
- Battery storage
- Integrated resource planning (IRP)

Carbon-neutral gas



- Hydrogen: Power to Gas
- Renewable Natural Gas (RNG)

Fuel switching



- Replacing oil, propane and wood for home and water heating
- Compressed natural gas (CNG) vehicles

Enbridge's key GHG reduction initiatives



Energy Conservation Programs

Between 1995-2020, Enbridge has helped reduce customers' emissions by 54.7 MT = to taking 11.9 M cars off the road.

Voluntary Renewable Natural Gas Program

Introduced new, low-cost, low-GHG option for customers in April 2021.

Hydrogen

Working with industrial customers to explore hydrogen blending opportunities

Compressed Natural Gas (CNG)

Operating 3 public CNG refueling stations on Highway 401; helping industrial customers reduce fleet costs and GHG emissions; mobile CNG to help seasonal, remote and peaking demands.

Geothermal

Introduced a Geothermal Program for residential customers in 2021

Technology Development and Innovation

Assessing and driving new technologies to commercialization through internal initiatives and external partnerships

Summary

Energy systems are interdependent

Given our scale, Enbridge is uniquely positioned to play a market facilitation role, bringing new lower carbon solutions to scale in Canada while continuing to meet the demand for safe, reliable and affordable energy.

We are already leading in this space, delivering innovative solutions that engage government, regulators and private industry.



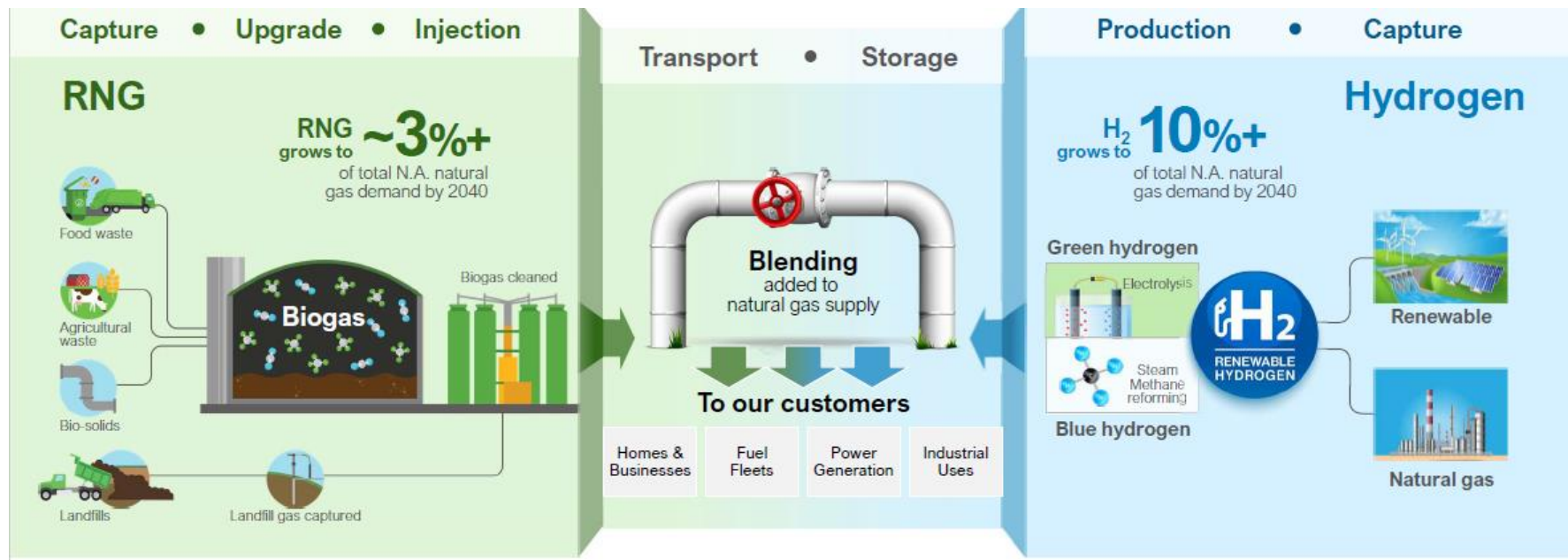
The Future of Clean Energy

Leading the transition to low-carbon energy by producing and using renewable natural gas

Steve Rakidzioski
Specialist RNG, Business Development



Investing into RNG & H2 Value Chain



Building on our existing systems and capabilities to deliver affordable & reliable low-carbon natural gas solutions

Building on RNG Capabilities

Expanding Utility Portfolio



- In franchise development
- Green bin and land fill servicing facilities
- Digestion to injection facilities
- 15-20 projects in development

Canada-wide Partnership



- Partnered with Walker Industries & Comcor Technologies
- Existing relationships with ~40 landfills across Canada
- Digestion to injection facilities

Significant U.S. Potential



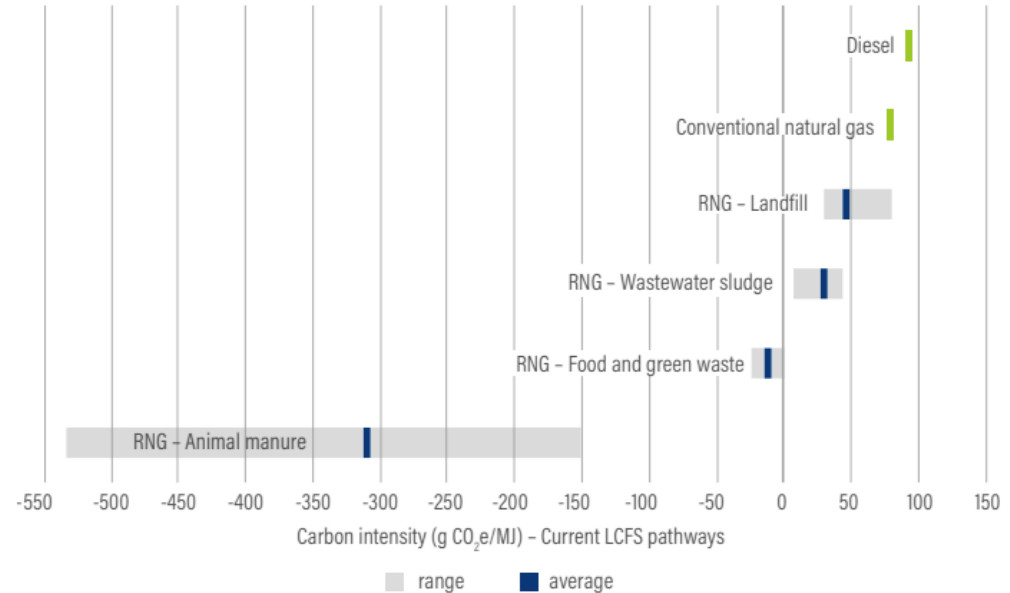
- ~24,000 miles of transmission pipeline
- RNG technology readily applicable
- Digestion to injection facilities

Utilize existing infrastructure to lower emissions and maintain affordable energy supply

RNG: Supply Options

- Utility RNG supply in Canada
 - BC: 15% RNG content by 2030¹
 - Quebec: 10% RNG content by 2030²
 - Ontario: Enbridge Gas evaluating
- We recommend:
 - Enbridge Gas' Direct Purchase service
 - You can blend RNG into your mix
 - Source RNG via 3rd party energy marketers – growing space

RNG Carbon Intensity³ (g CO₂/MJ)



RNG molecule is a 'differentiated commodity', depending on carbon intensity, feedstock types

¹ <https://www.fortisbc.com/services/sustainable-energy-options/renewable-natural-gas>

² <https://www.quebec.ca/en/government/policies-orientations/plan-green-economy>

³ illustrative example – California Air Resources Board (CARB, 2020)

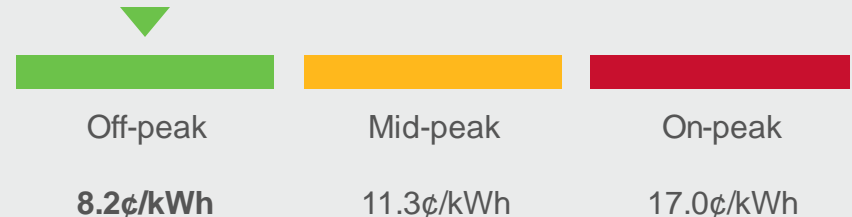
RNG: Cost Considerations

- Supply Costs
 - Price competitive with electricity
- Avoided Carbon Charge
 - \$50/tCO₂e (2022) → \$170/tCO₂e (2030)
 - RNG supply avoids federal carbon charges on your utility bill
 - If \$22/GJ on long term contract, this avoided charge can be 12-17% of your RNG supply cost

Did you know...if RNG costs \$22/GJ to produce/procure:

- This is equivalent to \$0.08/kWh
- Off-peak electricity Ontario is priced at \$0.082/kWh

Electricity rates and prices (Nov 23, 2021)¹



RNG supply can be a cost-competitive pathway to realize GHG emissions reductions

Benefits of RNG



A sustainable energy source



A path to net zero



A cost-effective solution



An effective way to create energy resilience



A circular economy approach

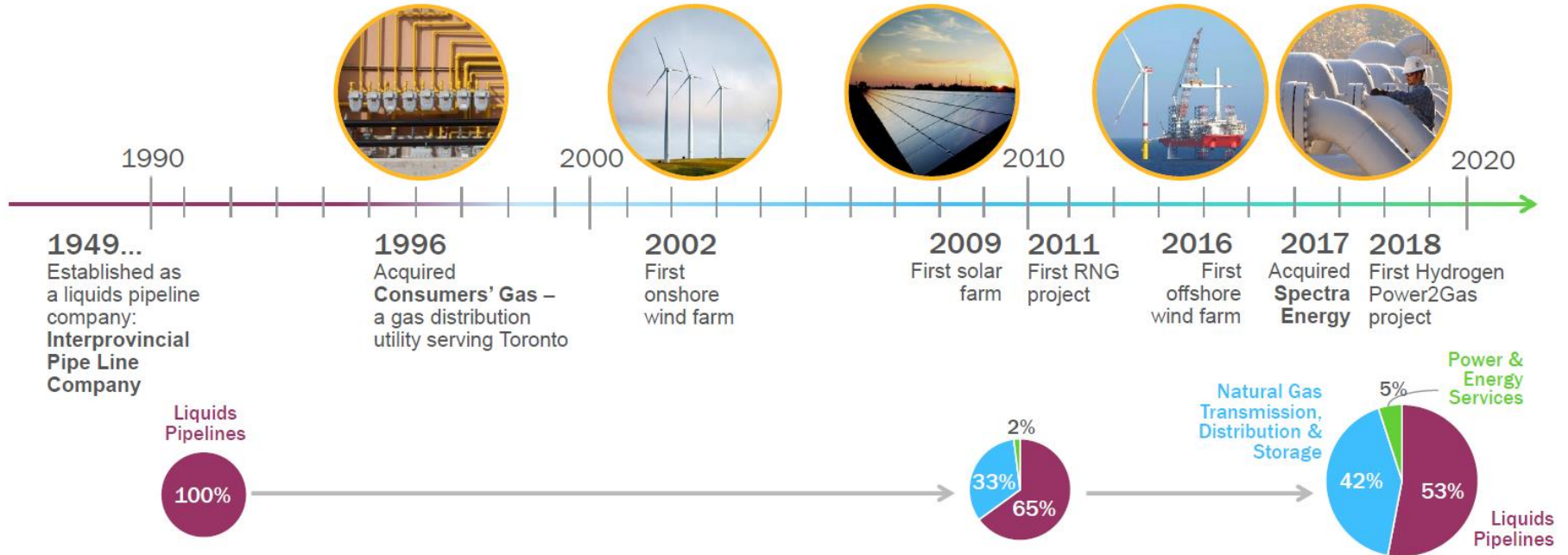
Enbridge & Hydrogen in The Energy Transition

The Vision



- Continued leadership in the low carbon energy space
- Investigate large scale energy storage
- Connect the natural gas grid to the electrical grid
- Carbon reduction in the natural gas distribution system
- Diversification of energy portfolio




History of Investing in Lower Carbon Energy



A long history and commitment to investment into lower carbon energy sources



H₂ Opportunity

	2030	2050
 % of Delivered Energy	6%	30%
 Hydrogen Demand	4 Mt-H ₂	20 Mt-H ₂
 GHG Emissions Abated	up to 45 Mt-CO ₂ e	up to 190 Mt-CO ₂ e

en Strategy

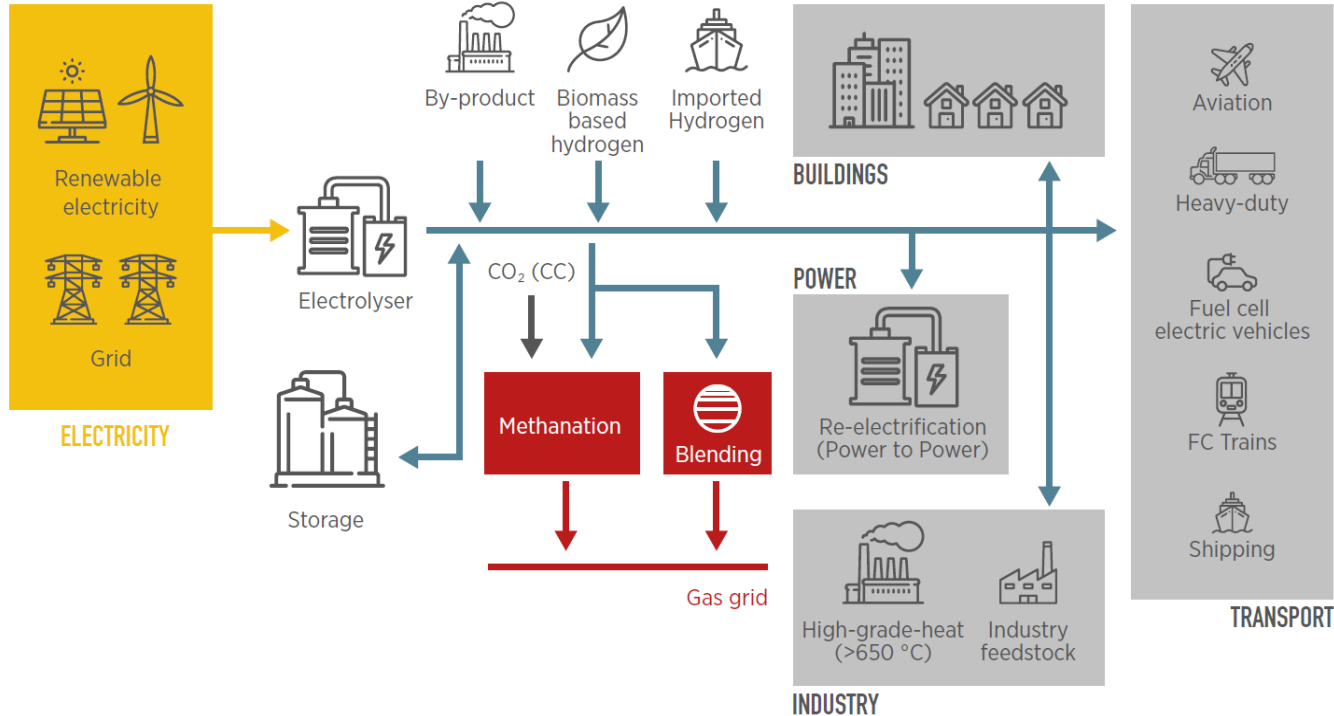


Canada's cold climate results in heating accounting for almost 80% of energy use in the home

Due to possible technical constraints, beyond blending limits of ~20% by volume, dedicated hydrogen pipelines start to become an attractive alternative.

50% of energy supplied today by natural gas is supplied by hydrogen through blending in existing pipelines and new dedicated hydrogen pipelines

The Huge Potential of Hydrogen



2019 – Onwards
Blending into gas grid, hydrogen for transportation and power generation

2017 – 2018
First NA utility P2G plant constructed and in service, designed for future expansion

2014 – 2016
Contract with IESO

North America's First Utility-Scale PtG Facility



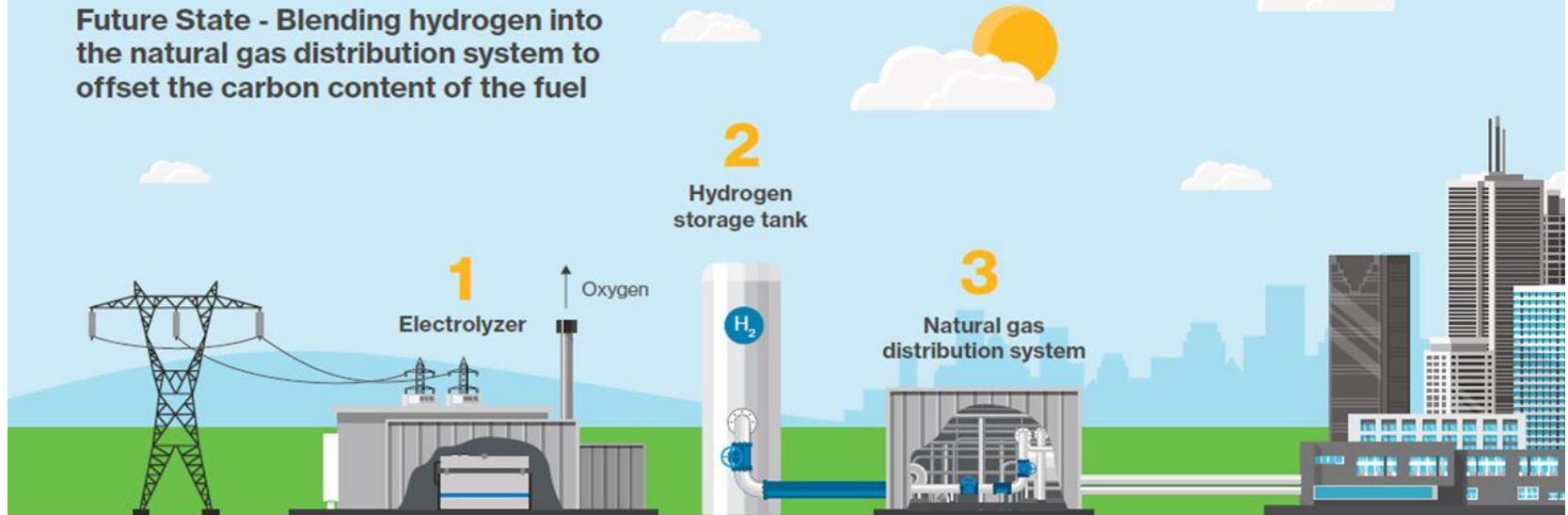
Launch of NA's First Utility-Scale PtG Facility



The Power-to-Gas Blending Process

Enbridge Invests in Power to Gas

Future State - Blending hydrogen into the natural gas distribution system to offset the carbon content of the fuel



1 Since electricity can't be stored, when there is a surplus, an electrolyzer can take the electricity and use it to split water into hydrogen and oxygen.

→ **2** The hydrogen that is produced is then stored.

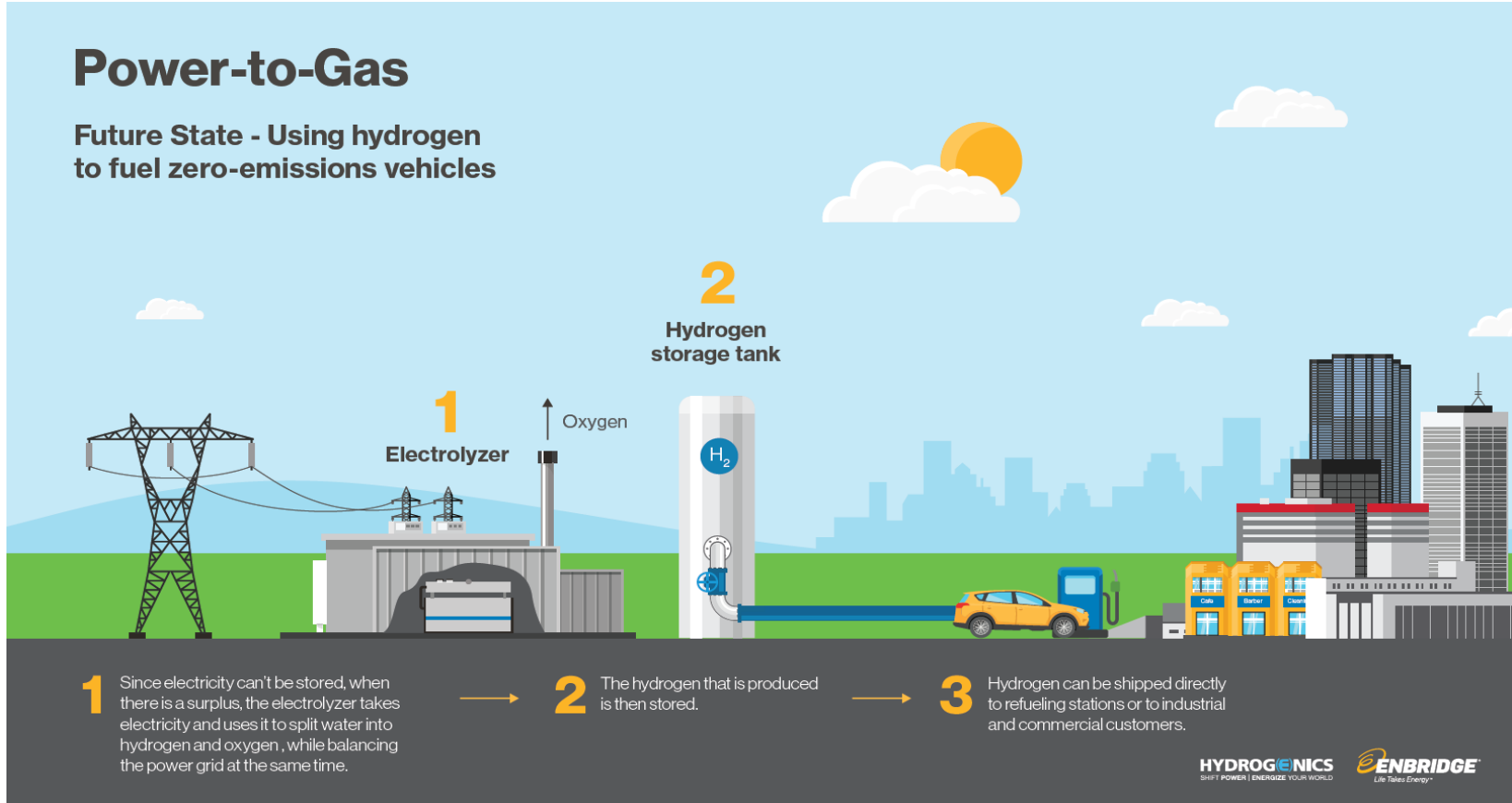
→ **3** Instead of converting the hydrogen back into electricity, the hydrogen may be blended into the natural gas distribution system at a pre-determined percentage, to reduce the carbon content of the gas.

→ **4** A lower carbon gas is delivered to customers.

Supporting H2 Transportation - Enbridge

Power-to-Gas

Future State - Using hydrogen to fuel zero-emissions vehicles



Hydrogen A Storage System of The Future

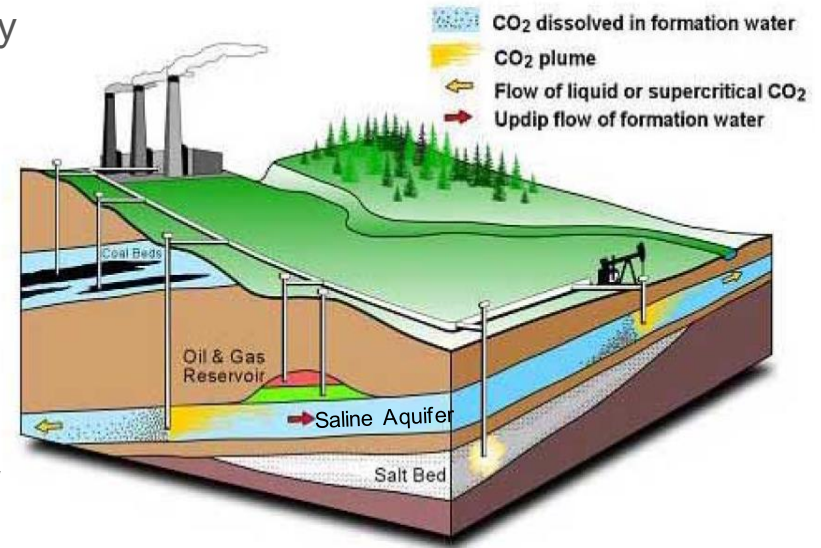


- Hydrogen has the biggest potential to offer year long (electrical) energy storage at the TWh scale.
- Apart from NG, this scale of energy storage cannot be achieved by other technologies
- Enbridge currently operates one of the largest energy storage hubs in north America with 290BCF of storage

Carbon Sequestration

Carbon Capture and Sequestration

- Capturing CO₂ from large point sources & permanently storing it underground
- Cost of carbon is currently forecasted to exceed the cost of CCS
- Safe, proven technology with Canadian expertise
- Potential “made in Ontario” GHG solution
 - MNRF study suggests significant opportunity
 - Need enabling and supportive legislation changes
- Academic, government and industry support for timely technical and feasibility assessment



Source Photo: Brachu, 2001

Enbridge looking to work with large emitters, government & other stakeholders

Q & A



Brandon Ramsundar, P. Eng
Account Manager, Distribution In-Franchise Sales

Closing Remarks
