

Integrated Resource Planning

Fall 2023 Regional Update Webinar



Eastern Region
December 11, 2023

Megan:

Thanks to everyone who has joined today's call. We are looking forward to sharing more information about IRP with you as well as the needs and potential projects that have been identified in your region.

My name is Megan Robinson – Senior Advisor, Community Engagement IRP.

Also, on the call presenting today are:

Chris Ripley

- Manager Integrated Resource Planning

Kurtis Lubbers

- Supervisor Distribution Optimization Engineering

Whitney Wong

- Specialist, Integrated Resource Planning

Steven Rogers

- Manager, Operations

David Moffat

- Advisor Integrated Resource Planning

Winter weather driving

Ensure your vehicle is ready for winter weather



- Install winter tires.
- Keep washer fluid full.
- Pack a winter safety kit.
- Maintain proper tire pressure.
- Keep the gas tank at least half-full.
- Clean all debris from your vehicle.
- Keep your rear window defroster in working order.

2

Megan:

Before we move on to the agenda, it is practice at Enbridge to begin each meeting with a safety moment. Today's will review 7 vehicle tips that can help with winter weather driving:

- 1) Installing winter tires – driving with all-season tires in winter conditions doesn't offer the maximum performance that you may need throughout the winter months.
- 2) Keeping your washer fluid full – a large amount of fluid can be used during a single storm so its best to keep it full
- 3) Packing a winter safety kit – a kit could include a matches, first aid kit, flares, flashlight & batteries, ice scraper, warm clothing, extra antifreeze, jumper cables, a small shovel, non-perishable food and water.
- 4) Maintaining proper tire pressure- a general recommendation is 30-35 PSI in winter temperatures.
- 5) Keeping the gas tank at least half full – if you find yourself stranded, it can keep your engine running until help arrives.
- 6) Cleaning all debris from your vehicle – by not doing this you can obstruct your vision or that of another drivers.
- 7) Keeping your rear-window defroster in working order – unsafe driving conditions occur when you can't see what is behind you.

Agenda

- Engagement process and webinar objectives
- Energy transition
- Integrated Resource Planning (IRP)
- Pilot project update
- Regional update
- Regional project discussion



Megan:

Today's agenda consists of:

- the engagement process and webinar objectives
- Energy Transition
- Integrated Resource Planning
- Pilot project update
- A regional update, and
- Regional project discussion

You can participate in this webinar by asking questions in the chat function by clicking on the Q&A tab at the top right of your screen.

The moderator will address questions at the end of the presentation.

We will also be posting all questions and responses on the regional planning website.

Engagement process and objectives

IRP engagement process:

- An open and public engagement process
- Ongoing sessions
- We welcome comments on how to improve the process

Objectives:

- Discuss Integrated Resource Planning
- Provide an update on planning underway
- Provide an update on the projects
- Seek feedback

4

Megan:

This webinar is part of an ongoing series of IRP engagement sessions that are intended to promote dialogue with attendees to help inform regional planning.

The IRP engagement process includes:

- An open and public engagement process where participation and feedback is encouraged.
- Ongoing engagement sessions.
- And, comments on how to improve the process. Feedback can be shared with IRP team members or through the 'Have Your Say' online feedback form.

The objectives of this webinar are to:

- Discuss Enbridge Gas' Integrated Resource Planning (IRP) Initiatives
- Provide an update on natural gas planning underway within the region
- Provide an update on the Pilot Project and other potential projects, and
- Seek feedback on the demand forecast for the region to confirm current customer growth information

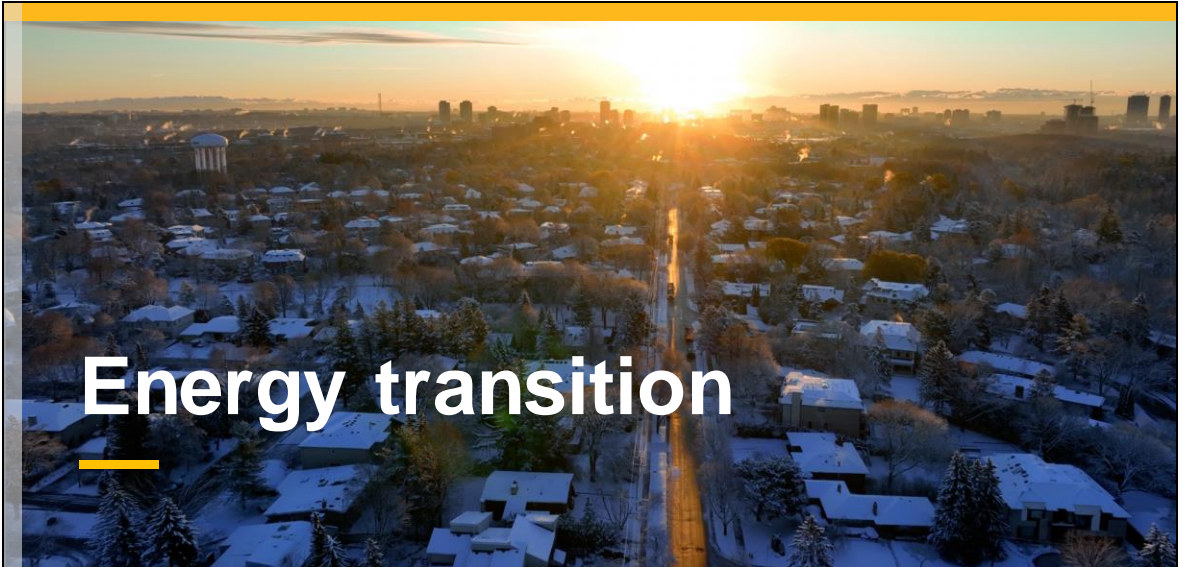
As a reminder

- We are not here to debate government, environmental or regulatory policy.
- We will not be seeking feedback on regulatory proceedings or facility projects that are already in flight or part of an ongoing Leave to

Construct (“LTC”) proceeding.

- We are not opening additional lanes of inquiry for projects that have filed their LTC or are in LTC proceedings.

Enbridge Gas is committed to supporting the achievement of federal and provincial emissions targets and today Chris Ripley will talk about integrated resource planning and the role it plays in supporting the energy transition.



Energy transition

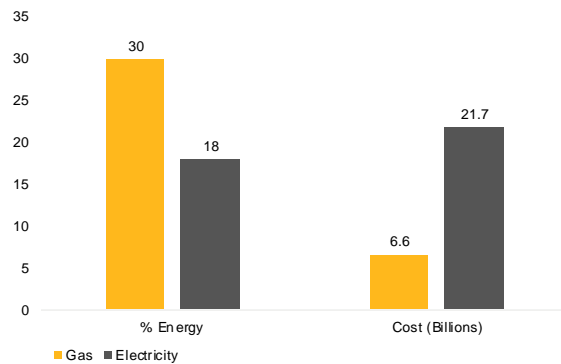


Ontario's energy systems

Ontario's energy system reality

Natural gas provides almost twice the energy needs of Ontario's at less than 1/3 the cost

Ontario's energy mix*



*% Energy: Canada's Energy Future 2023 reports database. Cost Electricity: \$18.6B operating revenues, OEB's 2022 yearbook and \$3.1B Renewable CostShift Subsidy estimate, Financial Accountability Office of Ontario's Report, Ontario's Energy and Electricity Subsidy Programs, February 2022. Cost Gas: Total operating revenues for Ontario's gas distributors, OEB's 2022 yearbook.

6

Chris:

Natural gas is a critical component of Ontario's current energy supply. Approximately 75% of Ontario homes rely on natural gas for home and hot water heating. Overall, 30% of Ontario's energy, almost double that of electricity, is served by natural gas at less than 1/3 of the cost.

Ontario has a reliable electricity supply today because of natural gas-fired generation. Electricity can't be efficiently stored, and renewable power requires a backup that can ramp up quickly to meet Ontario's energy needs when the wind doesn't blow, the sun doesn't shine, or above-ground infrastructure is impacted by climate events like ice or high winds.

Within the next 20 years, energy demand is set to increase by 25% as forecasted by the International Energy Agency (IEA). At the same time, we recognize residents of Ontario are concerned about reducing carbon emissions. Under the Paris Agreement, Canada committed to a target to reduce GHG emissions by 30% below 2005 levels by 2030. In April 2021 Prime Minister Trudeau increased Canada's 2030 emissions reduction target to 40-45%.

Some say a simple solution to reduce emissions would be to eliminate fossil fuels and electrify everything. Enbridge believes a focus on achieving net zero via only electrification overlooks market-ready, low and zero-carbon solutions. These can affordably support near-term emissions reductions by leveraging the existing gas and electric infrastructure versus an electric-only option.

In our view, a coordinated approach to energy system planning – between natural gas and electricity - is required for a successful energy transition.

Enbridge Gas' role in Ontario's energy transition

With approximately 30 percent of Ontario's emissions coming from the use of natural gas, Enbridge Gas will have an important role in energy transition.

Enbridge Gas is committed to supporting government with the achievement of their clean energy plans.

- Actively working on solutions to help meet Ontario's energy needs, while reducing emissions cost effectively.
- Enbridge Gas has set a net zero by 2050 target for emissions from our own operations, with an interim goal of reducing emissions intensity.

The gas distribution system in Ontario is a resource that can be leveraged to enable further greenhouse gas (GHG) reductions beyond 2030, including net zero.



7

Chris:

We recognize that energy transition is starting to unfold in Ontario and there are aggressive emission reduction goals set by Canada. We also recognize that our natural gas system and the product that we deliver will need to change to support these emission reduction goals – given that approximately 30% of Ontario's emissions are from the use of natural gas.

We are committed to supporting energy transition in Ontario, and we have taken the following steps so far:

- We are actively investing in low-carbon solutions that support cost-effective emission reductions – while continuing to safely and reliably meet Ontario's energy needs.
- We have set net-zero targets for emissions from our own operations.

Enbridge Gas's distribution, transmission and storage assets are vast and invaluable in providing reliable and resilient energy to Ontario. Our system can support a net-zero future – and the extent to which our system can be utilized in the transition must be further analyzed and understood before any decisions are made with regards to the best pathway forward in Ontario. Enbridge has the scale and experience to support the transition to a net-zero future and is delivering innovative solutions across the sector.

Integrated Resource Planning



Proudly Serving Ontario | 175 YEARS

Actions to achieve net zero

“Safe-bet” actions to take today to reach net zero:



Maximize energy efficiency

Reduce energy use.



Optimize energy system planning

Co-ordinate electric and gas system planning.



Invest in low-carbon gases

Transition to increasing amounts of renewable natural gas (RNG) and hydrogen over time.



Utilize carbon capture and storage

Invest in carbon capture and storage (CCS) for heavy industry and blue hydrogen production.

9

Chris:

Whichever pathway the province takes to achieve net zero, there are some actions that Enbridge Gas believes are safe bets. These actions are considered safe bets because they can deliver near-term GHG reductions, and/or maintain flexibility until the best pathway is chosen.

Safe bet actions include:

- Continuing to focus on delivering energy efficiency programs, with a focus on maintaining alignment with federal, provincial and municipal programs to ensure the costs and impacts are minimized.
- Optimizing and integrating gas and electric systems through coordinated system planning and through physically integrating systems in buildings through hybrid heating.
- Investing in carbon capture, utilization and storage for heavy industry and hydrogen production.

Integrated Resource Planning

The energy landscape in Ontario is evolving

Integrated Resource Planning (IRP) is an enhanced planning strategy and process.¹

Enbridge Gas evaluates non-pipeline alternatives that could be used to defer or avoid implementing a traditional pipe project to meet a system need.

Consideration is given to safety, cost-effectiveness, and the ability of alternative solutions to meet customer demands reliably.



¹ IRP Framework was published by the OEB on July 22, 2021.

Chris:

As the energy landscape continues to evolve, there is a growing interest in low carbon alternatives to meet energy needs and as the largest natural gas distributor in Ontario, Enbridge Gas knows it will play a meaningful and integral role in the province's path towards energy transition.

So, what is integrated resource planning? IRP is an enhanced planning strategy and process where we evaluate non-pipeline alternatives that could be used to defer or avoid implementing a traditional pipeline project to meet a system need. Consideration is given to safety, cost-effectiveness, and the ability for alternative solutions to meet customer demands reliably. In other words, it helps us to find alternative ways to meet customer demand for energy without increasing our pipeline infrastructure

Enbridge Gas is committed to supporting the province, municipalities, and Indigenous communities in achieving their clean energy goals. Annual IRP stakeholder activities will support ongoing dialogue between all parties to ensure energy and climate plans are known and factored into Enbridge Gas's system planning.

IRP regional stakeholder activities are important to better understand the local initiatives and policies that may affect natural gas demand. The learnings from stakeholder sessions are then incorporated into our demand forecasting processes and allows us to plan for the future.

IRP alternatives (IRPAs)

Non-pipeline alternatives can include:

• Demand side alternatives:

- Enhanced Targeted Energy Efficiency (ETEE) programs
- Demand Response programs

• Supply-side alternatives:

- Compressed natural gas (CNG) or liquified natural gas (LNG)
- Carbon-neutral renewable natural gas and hydrogen
- Adding supply through upstream deliveries

Alternatives can be implemented individually or in combination to meet the system need cost-effectively and within the required timeframe.



11

Chris:

In 2021, The Ontario Energy Board approved several IRP alternatives including: Demand side alternatives and supply side alternatives, that focus on the customer lowering peak hour energy use through energy efficiency programs such as Enhanced Targeted Energy Efficiency (ETEE) programs or Demand Response programs. Enbridge will offer a variety of programs to help reduce peak consumption including upgrades to building envelope and more efficient heating equipment.

Demand Response is a program where Enbridge will install controllable thermostats in a customer's home and control the thermostat during a very cold event by preheating the home's temperature or lowering the temperature by a few degrees. While this may seem small, if enough homes and businesses in an area participate it can lower the peak hour consumption helping to defer or downsize pipeline projects.

The OEB also approved supply side alternatives that focus on bringing more energy to a region through the use of compressed natural gas (CNG) or liquified natural gas, carbon-neutral renewable natural gas or additional supply through other pipelines.

These alternatives can be implemented individually or in combination to meet the system need cost-effectively and within the required timeframe.

How we are planning our system today With IRP

- Demand forecast
- System modelling
- Asset management plan (AMP)
- IRP and LTC assessment process



12

Chris:

To plan our system Enbridge follows an annual process that includes reviewing the future natural gas demands, modelling how those demands impact our natural gas system and then determines where new projects are required to meet system demands.

Following the identification of new system needs, Enbridge scopes and documents new facility projects that are required over the next 10 years and include those in a document called the Asset Management Plan. This document is filed every other year and in the intervening years with filing the addendum to the Asset Management Plan and is available on the OEB website.

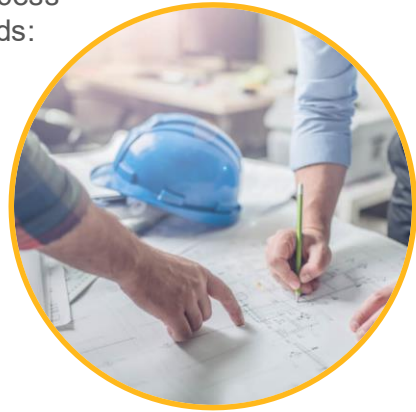
Following the identification of projects in the AMP Enbridge starts the process of evaluating the projects for IRP alternatives.

IRP assessment process

Enbridge Gas uses a four-step IRP assessment process to determine the best approach to meet system needs:

1. Identification of constraints
2. Binary screening criteria (pass/fail)
3. Two-stage evaluation process
 - Technical evaluation
 - Economic evaluation
4. Periodic review

The IRP assessment process allows Enbridge Gas to focus on investments where there is a reasonable expectation that a proposed project could efficiently and economically meet the system need.



13

Chris:

The IRP assessment process consists of 4 steps including:

Identification of Constraints in the AMP as noted on the previous slide. There are over 3000 projects in the AMP which would require significant time if Enbridge had to evaluate every single project. Therefore, the OEB approved a set of screening criteria to make sure Enbridge can focus on projects where IRP alternatives can be applied.

Said another way the screening criteria help us reduce the number of projects from the IRP assessment process. These criteria include things like emergency projects, customer specific projects where the customer is paying for the entire project and if the projects are below \$2 million threshold.

For all of the projects that pass the screening phase we move to a Two-Stage Evaluation Process.

- The technical Evaluation stage is where we assess the technical viability of potential IRPAs to reduce peak demand to the degree required to meet the identified system need, using best available information to determine whether an IRP Plan including one or more alternatives would be a viable option. Projects that pass the technical process then move to the economic evaluation.
- Economic Evaluation – The three-phase economic test that compares the IRP plan(s) to the pipeline option to determine which alternative is optimal.

At the end of the day, the most technical and economical solution wins the day and we file that project with the Ontario Energy Board for approval.

Pulling all the assessments, we then conduct periodic reviews to evaluate whether future project needs have changed or if IRP alternatives can meet the system need.

Technical evaluation process

1. Review and confirm if the existing scope should be modified prior to the evaluation of an IRP alternative.
2. Determine the feasibility of supply-side alternatives.
 - Considerations for CNG: Location of injection and flow rates required
 - Considerations for market-based supply side options: Availability of additional natural gas capacity or pressure upstream to impact project scope
3. Determine the feasibility of demand-side alternatives.
 - Considerations for ETEE: Demand reduction required, time horizon to achieve reductions, firm contract demand on the system, theoretical potential ETEE reductions, system-specific constraints
4. Determine the overall technical feasibility of IRPA implementation.

Growth driven projects have the highest IRP value

14

Chris:

I am going to dive a little deeper into the technical evaluation process. For each project that passes the technical screening Enbridge will review the project scope, timing and confirm the forecast for that particular area to ensure that the correct project need is being evaluated. Enbridge will meet with municipalities, local electric utilities, and large customers and Indigenous groups to understand the future energy needs for the area, including the review of any community or municipal energy plans that exist for the region.

We will then look at all the potential alternatives to determine if one or more in combination can defer or downsize the facility project. Energy efficiency programs for customers take time to develop and implement so there will be projects where Enbridge will need to implement a supply side alternative for a few years to help defer a project, until the energy efficiency programs are implemented and reducing the peak demands on our system.

Following completion of the technical evaluation Enbridge Gas will compare the facility project and IRP alternatives from an economic perspective. The most optimal solution, technically and economically, will be brought forward to the OEB for approval.

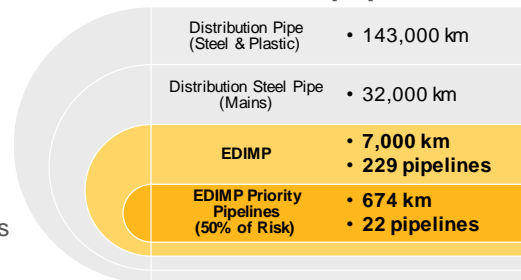
EDIMP

Enhanced Distribution Integrity Management Program (EDIMP) aims to implement targeted programs to manage the integrity threats of higher priority distribution pipelines by improving the understanding of:

- Asset condition
- Fitness for service
- Risks associated with the operation of those assets

If the results of these targeted integrity programs impact the pipeline replacement project scope in the AMP, IRP will re-evaluate the feasibility based on the updated scope.

Distribution populations



Values are estimates and may change based on the EDIMP population refinement.

15

Chris:

Now moving onto EDIMP, which stands for Enhanced Distribution Integrity Management Program (EDIMP).

Enbridge Gas is implementing the EDIMP to target the management of integrity concerns on our higher priority distribution pipelines. This requires Enbridge Gas to conduct integrity related assessments on these higher priority distribution pipelines to improve our understanding of:

- The condition of the asset
- Whether the asset is fit for service
- And if there are any risks associated with operation of that pipeline

The EDIMP related work may determine that a full replacement of the pipeline is not warranted based on enhanced asset health findings. On the other hand, it could also determine that significant unexpected issues requiring planned capital investments or urgent intervention is required to address the integrity concerns on the pipeline.

If the results of these targeted integrity programs impact the pipeline replacement project scope in the AMP, IRP will subsequently re-evaluate of feasibility of IRP implementation based on the updated scope.

Pilot project update

IRP pilot overview

Enbridge Gas has filed an application for two IRP pilot projects as directed by the OEB – one in the Town of Parry Sound, and the second in Southern Lake Huron area.

Key pilot objectives

- Develop an understanding of how to design, deploy and evaluate potential Enhanced Targeted Energy Efficiency (ETEE) and Demand Response (DR) programs.
- Gain insight into how potential ETEE measures and DR programs impact peak-hour demand.

IRPAs

- Demand side: ETEE and DR
- Supply side: Market-based supply and compressed natural gas (CNG)



Map of Parry Sound pilot area

17

Whitney:

I'll provide a brief overview and update on the IRP pilot projects,

Under the direction of the OEB, Enbridge Gas has developed and filed an application for two IRP pilot projects. One of which is located in the Town of Parry Sound and the other in Southern Lake Huron area (which includes the City of Sarnia and the Town of Plympton-Wyoming in the County of Lambton.).

While these two pilots are not located in this particular webinar's region, this is an important project for IRP to highlight as these pilots are focused around exploring and gaining learnings for two IRP alternatives - ETEE (enhanced targeted energy efficiency) and DR (demand response) programs. Understanding how to design and implement these IRPAs as well as their impact on peak hour demand will help to support IRP assessments for all projects in all regions moving forward.

To provide a bit more insight into what ETEE is, it involves offering targeted energy efficiency programs, such as providing incentives towards energy efficiency equipment to homeowners and businesses within a specific area, in efforts to reduce the peak period natural gas demand in that area. The ETEE program itself could look at incremental incentives to traditional energy efficiency programs, or could look at introducing new offerings and technologies as well.

So, while some of you may be familiar with our traditional energy efficiency programs, as those have been in place for some time and available to all Enbridge Gas customers today, the concept of enhancing them as using them to reduce peak demand requires more investigation and is one of the main focuses

for the pilots.

The other IRP alternative we're interested in learning as part of this pilot is Demand Response. This involves offering a program that would target residential customers and provide incentives to participants to lower their thermostats during peak times as requested by Enbridge Gas, essentially shifting load off-peak period gas demand.

To help support the analysis on the impact to peak demand, we are looking to install hourly metering within the customer base in both these pilot areas. This has no impact on the customer side of things, but what it allows us to do is collect more granular data at a customer level.

On the supply-side, market based supply and compressed natural gas (CNG) also will play a part in these pilots, but it will be leveraged in the background as needed while we test ETEE and DR in this area.

Within each pilot location, different combinations of these IRPAs and types of programming have been proposed.

IRP pilot regulatory update

- **July 19:** Enbridge Gas filed the IRP Pilot Projects Application with the OEB.
- **Sept. 26:** OEB Staff, intervenors and Enbridge Gas filed submissions on the proposed issues list.
- **Oct. 20:** Written interrogatories (IRs) filed with the OEB.
- **Nov. 3:** Enbridge Gas filed written responses to IRs with the OEB.
- **Nov. 10:** OEB Staff, intervenors and Enbridge Gas filed comments regarding the need for a technical conference.
- **Nov. 17:** OEB issued PO No.3 to put this proceeding in abeyance, pending the filing of updated evidence by Enbridge Gas in light of recent market changes that impact the ETEE program design and budget.



Whitney:

In terms of where we are with this Pilot Project right now, this application was filed with the OEB earlier this year in July. We're currently going through the standard regulatory steps, including defining an issues list for this proceeding, and responding to interrogatories submitted by intervenors. In light of some recent changes in the market that has an impact to the proposed ETEE program design and budget, the OEB has placed this proceeding in abeyance and on pause in order to provide time for Enbridge to make the necessary updates to the application. We are working to establish the timelines so we can continue to move this pilot application forward.

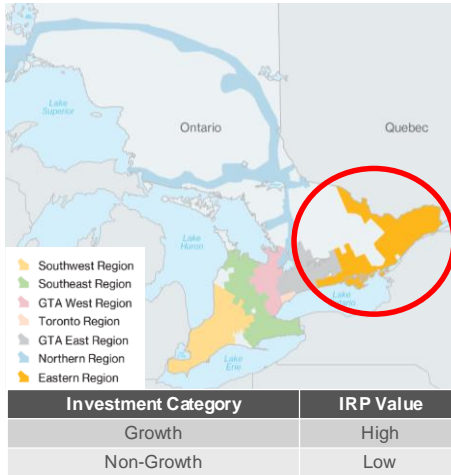
Now I'll turn it over to Kurtis who will be diving into an overview of the region and key projects on our radar.

Regional project discussion



Proudly Serving Ontario | 175 YEARS

Eastern regional overview



The Eastern Region currently has 68 growth related and 84 non-growth related investments in the AMP.

Growth related investments

- 57 have been technically evaluated
- 11 will be technically evaluated by the end of 2023

Non-growth related investments

- 53 have been technically evaluated
- 31 remain and results to be reflected in the 2025-2034 AMP

Kurtis:

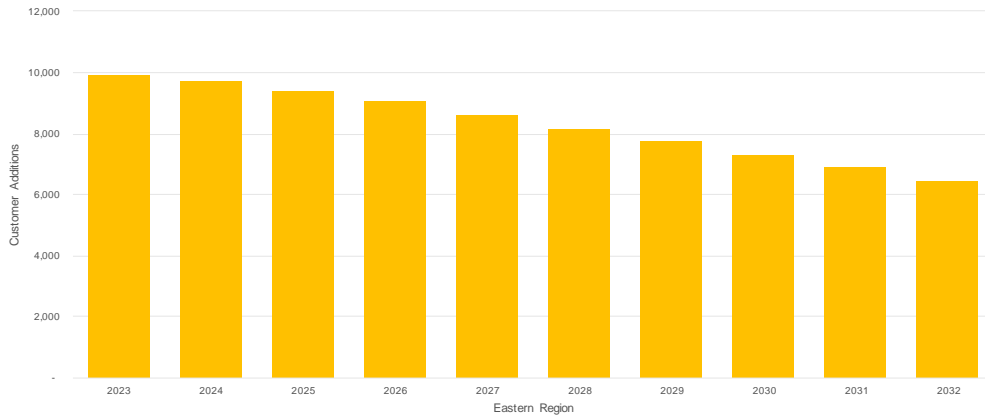
What we primarily do in DOE is hydraulic modelling of the systems across the franchise to peak hour design conditions, and now this includes supporting IRP analysis and initiatives.

Today I'll be speaking a bit more about the Eastern Region and some of the Technical IRP Evaluations we are performing as one of our accountabilities. The Eastern Region is shown in dark orange on the slide and circled in red. This region covers areas stretching from Belleville and Kingston east to Cornwall as well as the entire Ottawa area including Foxbury.

As noted, this region has 68 growth related and 84 non-growth-related (condition related) investments in the AMP.

We have already reviewed a significant amount of the projects in this region and are aiming to complete the growth projects by year end and the remainder in early 2024.

Regional needs



Gradual Decline in the Forecasted Rate of Customer Additions Over the Years

Kurtis:

The Eastern region customer attachment forecast is shown here, and I do want to note these values are based on the 2022 long range planning forecast. This is updated annually. As you can see, there is a gradual decline in the forecasted rate of customer additions over the years which is critical to our assessments.

This has been accounted for in the IRP assessment process when modelling for the demand reductions required by various IRPAs. A number of factors are considered when evaluating future customer additions and natural gas demand forecasts including location, zoning, and energy transition factors.

Enbridge Gas is accepting feedback through the form that will be delivered to you following this webinar as well as on our webpage through the “Have Your Say” function.

Key projects: eastern region

Growth and system expansion related

To provide reliable, secure, and affordable natural gas supply to meet the growth in demand of the respective systems

Investment name	Proposed in service date
SRP LUG East Kingston Creekford Rd Reinforcement	2027
NW 6587 L'Original Reinforcement SRP	2025

Kurtis:

Growth and System expansion related projects serve the purpose of providing reliable, secure, and affordable natural gas supply to meet the growth demand of the systems. As mentioned earlier, growth projects tend to have higher IRP value vs condition-based projects.

The two key growth projects shown here will be discussed in the following slides. The Kingston reinforcement was already deferred to 2027 using IRPA solutions which I can explain in more detail. The L'Original Reinforcement will be shown and discussed more as well.

Key projects: eastern region

Integrity and condition related

Projects required as part of the integrity management program to mitigate risks of corrosion, vintage steel main, pipeline failure, geohazards

Investment name	Proposed In service date
St. Laurent Pipeline Replacement Project	2025
A60: Havelock St , Brockville, VSM Replacement	2029
KEMPTVILLE GATE	2027

Kurtis:

Integrity and Condition Related projects are required as part of the integrity management program to mitigate risks of corrosion, vintage steel main, pipeline failure, geohazards, etc. Shown here are a few key projects of this type in the region, but unfortunately tend to have low IRP value.

The St Laurent Pipeline Replacement Project is obviously an ongoing major topic in this region. Enbridge will be filing an LTC application in 2024 and Steven will be speaking briefly about this project a bit later with some preliminary details. Enbridge has reviewed several IRP alternatives for this project already.

The other two projects on the list being Havelock St replacement and Kemptville Gate Station rebuild are examples that Fail the IRP Technical Review. The Havelock St project fails because the pipes can all be replaced with all NPS 2 pipe. Kemptville Station rebuild I will discuss a bit more on the next slide.

Kemptville gate station

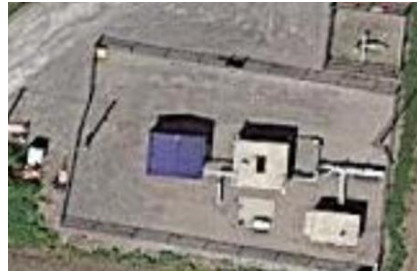
This project is part of the Distribution Station Portfolio.

Scope

- Kemptville Gate Station Rebuild
- 2027 timing and estimated to cost \$5.7 million (including overhead)
- Full rebuild of this station due to several condition related issues

This project fails the technical evaluation as it is primarily condition related, IRPAs are not applicable.

- CNG is not considered for station rebuilds driven by condition
- ETEE and Supply Side Alternatives will have minimal benefit to this scope and rebuild



Kemptville Gate Station

27

Kurtis:

I wanted to highlight a large station rebuild here in the Eastern Region – this station is Kemptville Gate Station which no surprise is located north of Kemptville. This project is part the Distribution Station Portfolio which is generally rebuilds or modifications due to condition at Stations.

This station has varying needs including aging or obsolete equipment driving maintenance challenges, and other issues. Improvements to equipment is needed including odourization, heating and some electrical equipment.

Since IRPA's do not support deferring condition based projects, unfortunately this project Fails the IRP Technical Review.

Kingston Creekford rd reinforcement

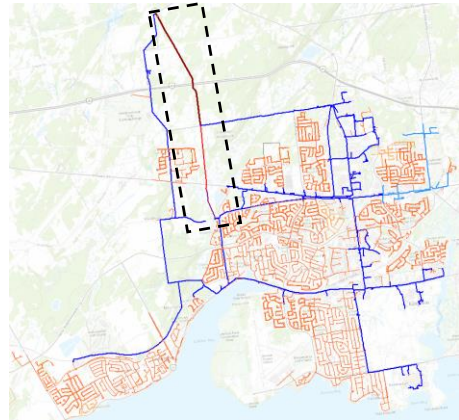
The Kingston system was originally forecasted to require reinforcement project in 2022. An IRPA was successfully implemented to defer the project to 2027.

Scope

- The original facility reinforcement and alternatives changed scope several times due to inclusion of other pipeline condition issues

IRPAs evaluated for this project

- CNG injection to allow deferral of the project
- System-wide reverse open season and request to convert to IT demand for contract customers – one customer reduced firm volumes
- ETEE may be explored further depending on the future system demands and large volume customer considerations



Kingston System

26

Kurtis:

This system is forecasted to require a large reinforcement in 2027 after the original IRP deferral. The facility project and alternatives changed several times as noted due to extra class location and depth of cover issues on the existing system. The primary system lateral is planned to be either reinforced or replaced with larger pipe size shown in the black box area.

Enbridge evaluated and executed two IRPA's for this project including CNG injection as well as reducing a contract customer firm volume by reverse open season. This allowed deferral of the growth need on this system to at least 2027 and we are aiming to defer this project further utilizing CNG and ETEE on existing regular rate customers in the future.

Stay tuned for more on this project and system in the future.

NW 6587 L'Original reinforcement

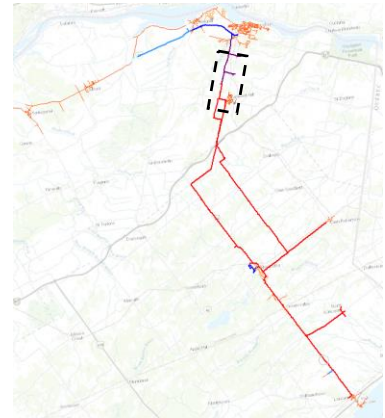
The Lancaster system is forecasted to require reinforcement in 2025.

Scope

- 3.7 km reinforcement of NPS 8 pipe and associated facilities
- This need is based on demands and considerations from existing customers and forecasted growth
- Considering scope changes due to incremental demand from contract customers and other large customer requests
- Other facility alternatives and routes have been considered

IRPAs evaluated for this project

- CNG injection at the system constraint points to defer project
- ETEE to defer and/or reduce project
- System-wide reverse open season and request to convert to IT demand for contract customers



Lancaster System

27

Kurtis:

This system is forecasted to require a large reinforcement in the coming years – current timing is 2025. The scope and timing is currently under review due to additional large demand requests on this system. The current facility project is about 4 km of NPS 8 extra high pressure pipe and the associated valve sites.

As noted, Enbridge is currently evaluating several IRPA's for this project being CNG, ETEE and reverse open seasons for contract customers. We are aiming to defer this project with CNG injection, and also considering concurrent ETEE on the system to reduce system demands.

The economic assessment will be conducted next depending on the final scope and timing.

St. Laurent Pipeline background



- The St. Laurent Pipeline System is a vital part of Enbridge Gas' natural gas distribution network in the National Capital Region. It directly and indirectly supplies natural gas to approximately 165,000 customers in Ottawa and the surrounding area, including in Gatineau, Quebec.
- On March 2, 2021, Enbridge filed a Leave-to-Construct (LTC) application to replace the pipeline (Phase 3/4 of a four-phase project) due to integrity concerns stemming from hazards associated with the vintage pipeline.
- On May 3, 2022, OEB issued a Decision and Order denying Enbridge's LTC application.

28

Steven:

For those who are not familiar, this is the Saint Laurent pipeline system. It's a key backbone to the natural gas distribution system and the Nation Capital Region directly and indirectly. It supplies approximately 165,000 customers, including those in Ottawa and Gatineau, Quebec.

On March 22, 2021, we did file a leave to construct application. Basically, we need to file this to the OEB in order to gain approval to build the project.

This was actually phase three and four of a four phase project, which we've actually finished phase one and two and this was all due to some integrity concerns that had presented themselves with the pipeline and due to its vintage nature and some other location specific issues.

In May of 2022, we did receive a decision back from the OEB denying the application and we heard two primary things that we had not demonstrated that the integrity need required immediate replacement and that we did not adequately consider IRP solutions, in addition to some other concerns.

Integrity program

Enbridge Gas undertook the following integrity assessment activities between June 2022 and May 2023:

- In line inspections of the pipeline utilizing advanced scanning technologies to identify third party damage, defects and corrosion
- Leak detection assessments and surveys
- A review of the pipeline's current condition against applicable safety standards
- An evaluation of various remediation options, including ongoing assessments and repairs, and a full/partial replacement of the pipeline system

Integrity program conclusion

A full pipeline replacement is the optimal option for the continued safe and reliable delivery of natural gas service. Long-term, the St. Laurent Pipeline is not safe to operate without replacement.

IRP study

Enbridge Gas undertook IRP assessment activities and preliminary results indicate:

- The existing St. Laurent pipeline configuration has a capacity of 166,300 m³/hr and replacement project's proposed configuration was 155,500 m³/hr
- A targeted conservation estimated the potential peak hour savings of an enhanced targeted energy efficiency (ETEE) program in the St. Laurent area to be 13,273 m³/hr at a cost of \$68 million
- 26,000 m³/hr is required to minimally reduce the pipe size (cost savings of \$1MM) based on forecasted demand out to 2042

Preliminary IRP assessment conclusion

The ETEE alternative does not provide a technically-feasible option for peak hour reduction to reduce pipe size.

Steven:

Since that decision in June 2020, we initiated an integrity project, or integrity program to gain more physical data and to perform more analysis on the pipeline itself. We performed inline inspections and for those who are not familiar, we actually did put tools through the pipeline itself that scanned for defects and issues with the pipeline and did find a significant number of features.

Additionally, we did some enhanced leak detection and cathodic protection surveys, and we looked at the pipelines current condition against three separate applicable safety standards. Through that additional evaluation, we looked at a bunch of different options including partial and full replacement and did conclude that the optimal solution for the project is a full pipeline replacement.

There will be significant details available in the application which we intend to submit in 2024. This will show all the work that has been done since the original decision. Additionally, IRP studies were undertaken and just a couple of things here. The existing pipeline has a capacity around 170,000 m³/hr and the replacement project that we were proposing in 2021 had a capacity of about 100,000 m³/hour.

There was a report that was completed for targeted conservation that looked at a potential savings of approximately 13,000 m³ at a cost of \$68 million. This is preliminary work but from what we saw, we would need approximately 26,000 m³ per hour to reduce the pipe size of the potential replacement and that yields cost savings of about \$1,000,000.

So, when we compare the cost of \$68 million not to reach the required reductions, it was concluded to not be an economical or technically feasible option to reduce the pipe size now, this may be counter intuitive, how can a reduction in pipe size not yield larger savings? Really a lot of the cost in this area is driven by urban nature of the work when that pipeline was installed.

Feedback and next steps

Feedback from stakeholder engagement initiatives is necessary to inform our IRP activities.

We welcome feedback on the following:

- Information that could affect natural gas demand that Enbridge Gas has not considered for this area and/or that you believe Enbridge Gas should be aware of, such as:
 - New residential/commercial
 - Industrial developments
 - New Municipal or Community Energy Plans
 - Municipal energy policy, etc.
- Feedback on the specific area's discussed today including potential IRPA opportunities.

30

David:

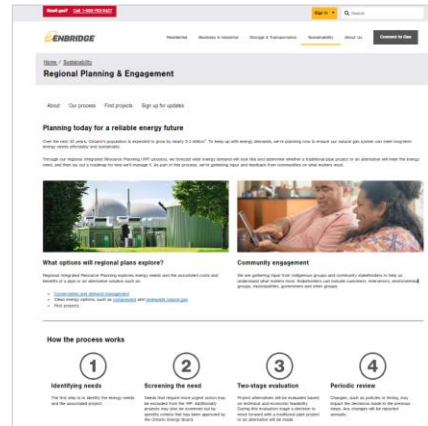
- Feedback is an important part of informing our IRP activities and is a driving force behind these sessions.
- We're always looking for feedback on:
 - Information that could affect natural gas demand that we might not have considered for this area or that you believe we should be aware of, such as:
 - New residential or commercial developments
 - Industrial developments
 - New Municipal or Community Energy Plans, and
 - Municipal energy policy, etc.
- We would also like to hear feedback on the specific area's discussed today including potential IRPA opportunities.

How to stay involved

Visit our Regional Planning webpage to:

- Sign up for email updates to receive information on upcoming stakeholder events and webinars.
- Register for events.
- Review regional pages that include all IRP projects in your community.
- Submit feedback through 'Have your Say'.
- Search for other IRP information as required.

Sign up for email updates today!



enbridgegas.com/sustainability/regional-planning-engagement

31

David:

The best way to stay involved is to visit our **Regional Planning webpage** where you can:

- Sign-up for email updates to receive information on upcoming stakeholder events and webinars
- Register for events
- Review regional pages that include all IRP projects in your community
- Submit feedback through the 'Have your Say' form on our webpage, and
- Search for other IRP information as required

Q&A



David:

At time we'd like to open the floor to the audience for any questions related to the content we've covered today or IRP in general.

Questions concerning pipeline construction, please email jeremy.miller@enbridge.com directly.

Q: Can you please discuss timelines related to hookup of rural portions of Ottawa? For example Navan, Starsfield and Vars?

A: Please send an email to Jeremy.miller@enbridge.com, I'm not sure if this is a community expansion type project or not.

Q: You mentioned that we have an IRP option to supply peak demand using CNG and LNG. Does EGI have procedures for using LNG, or is the LNG "handling" done solely by the supply vendor?

A: I would say we have procedures for CNG and LNG we use in our distribution system already. But when it comes to actually moving it around the province and using it for specific projects, we do use a third party vendor at this point. We primarily use CNG though but will be looking to use more LNG in the future for some of these projects.

Q: The City of Kingston is working on an official plan update. Who should the City of Kingston contact to provide an update on the growth projections and/or prospects of any major industrial developments?

A: We will have a representative from our Municipal Energy Solutions team reach out directly.

Q: Looking at discussion in the Eastern region, I was hoping to hear a mention on future collaboration with GFL on RNG.

A: We do have some RNG work happening in the Eastern Region. We will respond to this in greater detail through an email.

Q: I noticed your recent ad in the Ottawa newspapers. Why is it necessary if the OEB makes the final decision?

A: We really thought that it was important to help Ottawa residents understand the need for the pipelines. There have been conflicting stories related to why the OEB had rejected the pipeline in the past, and so we thought that the best approach was to provide the public with a brief overview of the project and to provide a further link to more information if folks were interested in understanding a little bit more clearly what the St. Laurent pipeline is and is not about, so that was our approach to help the public understand. We've had a very positive response to that public engagement effort.

We do have a couple of frequently asked questions that we'd like to share that can sometimes spark conversation.

Q: What impact will IRP efforts have on natural gas?

A: To the extent that we use an IRP alternative to defer or downsize a pipe project, the impact is typically going to keep rates lower than they otherwise would have been because we do compare the economics of the facility project to the IRP alternatives. The most technical and economical viable solutions wins the day so rates will be lower than they otherwise would have been if we implement IRP in terms of this.

Thank you



David:

Thank you all for joining us today and a special thank you to all of our presenters, remember to check your inbox for news and updates about everything IRP.

Reach out with any questions/comments at irp@enbridge.com