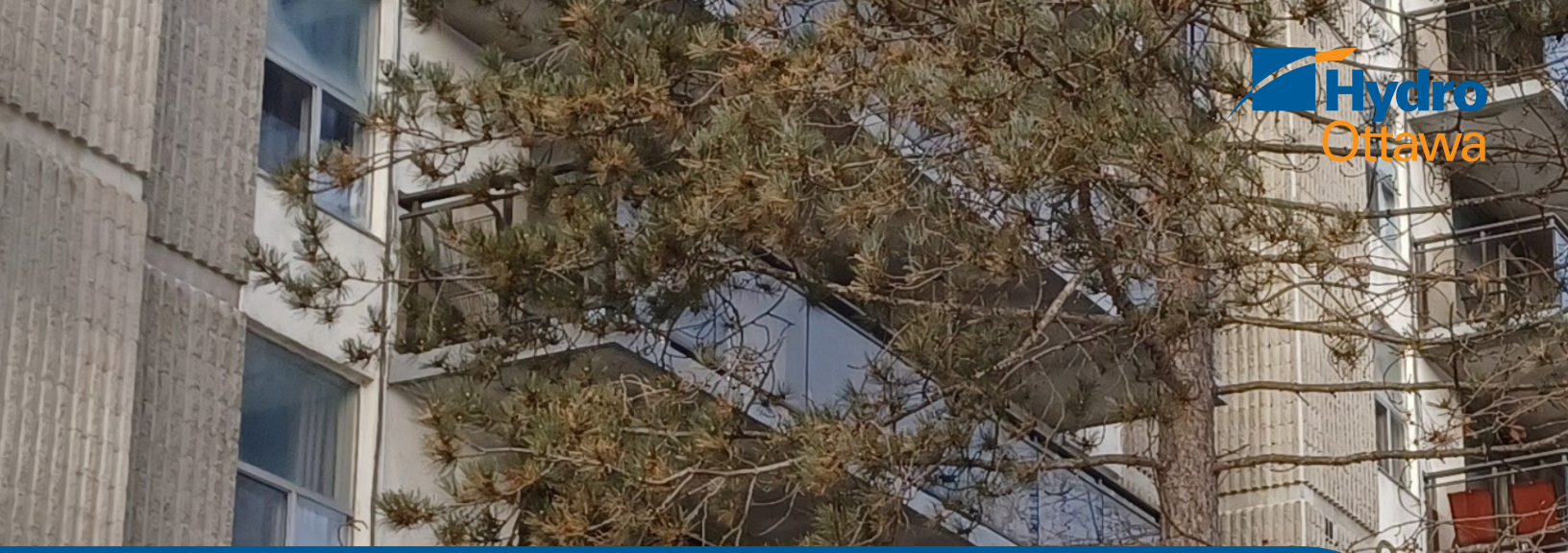

Ottawa Community Housing advances carbon reduction strategies

Background

Ottawa Community Housing, the city's largest provider of community and affordable housing, has committed to reducing greenhouse gas emissions by 96 per cent by 2040. This goal aligns with the City of Ottawa's Climate Change Master Plan and reflects OCH's long-standing focus on environmental stewardship and housing affordability.

With more than 15,500 homes and about 33,000 tenants, OCH plays a central role in the city's housing system. However, with two-thirds of its buildings over 50 years old and annual utility costs exceeding $27 million, the portfolio presents both challenges and opportunities.

As Dan Dicaire, Manager of Conservation and Sustainability at OCH, explained:

"OCH sees firsthand the connection between housing affordability and sustainability. If we aim to solve the housing crisis by increasing the number of homes, we must avoid creating a new infrastructure or cost crisis. That's why retrofitting existing buildings and building new ones to high-performance standards is essential. Affordability and climate action naturally go hand in hand."

Challenge

OCH faces the complex task of decarbonizing a diverse and aging portfolio, all while maintaining affordability and minimizing disruption for tenants. Retrofitting a portfolio of this scale requires careful alignment of capital planning with carbon reduction goals — ensuring that each upgrade contributes meaningfully to OCH's sustainability targets.

"We're not going to be able to capture a billion dollars up front and do everything in the next five years," said Dicaire. "We need a plan that reflects our capital schedule and allows us to decarbonize over time."

Grid capacity presents another challenge. Dicaire compares inefficient buildings to vehicles that take up more space than needed:

"An inefficient building is like a car that takes up two parking spaces. It uses more than its share of capacity. Now imagine that car sitting there for 50 to 100 years, like a building might. That kind of inefficiency limits access to the grid and reduces how effectively others can use it."

Solution

To tackle these challenges, OCH has participated in the Ottawa Retrofit Accelerator (ORA) program, delivered by Hydro Ottawa, to conduct carbon pathway studies, a detailed audits that assess energy use, emissions, and upgrade potential across its high-rise portfolio. Funded up to 90 per cent for affordable housing providers through Natural Resources Canada, the program helps ease budget constraints and supports long-term, strategic planning.

Working with Envari Energy Solutions, an ORA-approved consultant, OCH is identifying opportunities to:

- Transition heating from fossil fuels to electricity using electric boilers and heat pumps
- Integrate geothermal systems where feasible
- Upgrade building envelopes, lighting, ventilation, and water systems
- Assess the impact of retrofits on Hydro Ottawa's grid by analyzing decades of vault inspection data.

Process

Each carbon pathway study follows a structured approach:

- **Electrification of mechanical systems:** Shifting from natural gas to electric systems with full lifecycle and cost implications. This includes some feasibility of geothermal (ground source) heat pumps, which have a higher coefficient of performance (COP).
- **Broad efficiency upgrades:** Identifying "once-in-a-lifecycle" opportunities (such as cladding, windows, and vault upgrades) to capture long-term savings, as well as other energy efficiency projects (e.g. lighting, variable frequency drives — VFDs).
- **Modeling:** Energy and financial modeling provides the incremental cost of energy conservation measures, as well as the projected cost savings and GHG emissions for each project. This also includes electrical capacity modeling to assess the impact on the grid.
- **Capital schedule alignment:** Matching modeling results with scheduled equipment replacements maximizes the impact and affordability while delivering a clear roadmap for decarbonization, capital investment and grid impact planning.

"The studies give us the ability to add a 'carbon opportunity' column to our capital plan," said Dicaire. "Now, when we replace an air makeup unit, we can also see the opportunity to eliminate a specific amount of emissions."

The studies also include marginal abatement cost curves, showing the financial return of various measures per ton of carbon saved.

"Some optimizations have a net positive marginal abatement, which makes them stand out as win-wins — they improve performance, reduce emissions and save money." said Dicaire.

Outcomes

The ORA-supported work has produced a data-driven roadmap that empowers OCH to act strategically:

- **Tailored recommendations:** Building-specific action plans for upgrades, funding, and carbon reduction.
- **Accelerated funding:** Streamlined access to implementation dollars.
- **Informed grid planning:** Hydro Ottawa can now anticipate grid impacts based on OCH's retrofit schedules.

"The design decisions we make today will be with us for the next 50 years," said Dicaire. *"So let's make sure they're the best decisions we can make."*

Conclusion

Ottawa Community Housing demonstrates how bold environmental goals can be successfully paired with practical capital planning. By leveraging strategic data, strong partnerships, and focusing on residents' needs, OCH is setting a strong example for affordable, climate-resilient housing in Canada.

If you're looking to achieve similar financial and environmental benefits, consider starting your building's journey to a lower-carbon future with the Ottawa Retrofit Accelerator.

hydroottawa.com/ora

From left: Stéphane Giguère, CEO, Ottawa Community Housing; Michael Parsa, Associate Housing Minister (now Minister of Children, Community and Social Services); Danielle McGee, Senior Advisor, Ottawa Community Housing; and Cliff Youdale, Chief Development Officer, Ottawa Community Housing.