



Community Energy Knowledge - Action Partnership Case Study

PORTLANDS ACCELERATION INITIATIVE – ZERO NET ENERGY IMPORT



Project Snapshot

Project Name	Portlands Acceleration Initiative
Developer	Waterfront Toronto
Key development partners	City of Toronto, Toronto and Region Conservation Authority, Government of Ontario, Government of Canada
Definition	Zero net energy import
Status	Majority brownfields; mixed ownership with majority municipally-owned
Site area	356 hectares
Number and type of residential units	TBD – Portlands will include mixed-use residential areas alongside industrial uses. A residential population between 17,500 to 25,000 residents is envisioned.
Floor area	2,000,000 m ² , 50% of which would be residential
Gross residential density	Between 200 and 250 persons and jobs combined per hectare
Non-residential units	Land uses permit mixed-use, with film studios, and port operations co-existing with existing industrial land uses
Pre-development us	Industrial and brownfield sites
Sustainability framework	C 40 Climate Positive Development Program ¹
Key energy features	<ul style="list-style-type: none"> • Provisions for district thermal energy network are being planned, including easements for a district thermal energy network • Heat recovery from local power generation (<i>Portlands Energy Centre, and Cement facilities</i>) • Deep Lake water cooling • Aggressive energy use intensity standards for new buildings within district
Key water features	Reduced water use to address water/wastewater energy use and emissions

Municipal Snapshot

Municipal name	City of Toronto
Municipal Status	Single tier
Land area	630.2 km ²
Population (2006 census)	2,503,281
Population (2011 census)	2,615,060
Growth rate	4.5%
Within Greater Golden Horseshoe	Yes
Updated 2031 Places to Grow Population Target ²	3,190,000



¹C40 Cities. (2017). Retrieved from <http://www.c40.org/networks/climate-positive-development-program>





DESCRIPTION OF MUNICIPALITY

The City of Toronto has a long history of leadership on climate change dating back to 1988 when the City hosted the first international conference to launch the issue onto the global policy agenda. The 1988 conference, “Our Changing Atmosphere: Implications for Global Security,” hosted by the Government of Canada, proposed the first specific initial target for a global reduction in the emission of carbon dioxide – 20% below 1988 levels by 2005.² Not long after, in 1991, Toronto City Council voted to establish the Toronto Atmospheric Fund with a \$23 million endowment and a mandate to finance urban solutions to the climate crisis.³

A few years later in 1996 the City created the Better Buildings Partnership as a City-to-business program to assist building owners, managers and developers with financing to achieve energy efficiency goals. As of December 2016, the BBP program had stimulated more than \$1 billion in investment and generated estimated carbon emission reductions of 690,000 tonnes.⁴ Additional initiatives, such as development of a Deep Lake Water Cooling system serving the downtown core, and policies such as the Toronto Green Standard, have put Toronto at the forefront of the global city movement to reduce GHG emissions.⁵

The City’s first Climate Change Action Plan was released in 2007 which set GHG reduction targets for 2012, 2020 and 2050.⁶ Toronto’s long-term target of 80% below 1990 levels by 2050 remains consistent with the Province of Ontario’s GHG reduction target. More recently, in 2016, the City launched the TransformTO initiative with the goal of engaging citizens in co-creating a strategy to achieve Toronto’s 2020 emissions reduction target (30% below 1990 levels) and 2050 target.⁷ TransformTO included GHG emissions modelling scenarios for current policy, as well as potential future policy options. A report on short-term strategies, adopted by Toronto City Council on December 13, 2016 includes recommendations supporting the transition to net-zero buildings and communities.⁸

Municipal Policy Framework

The City of Toronto recognizes that the current policy framework at the municipal, provincial and federal level is insufficient to achieve 2020 and 2050 emissions reduction targets. Through the TransformTO initiative, the City of Toronto commissioned technical modelling and comprehensive community stakeholder consultation to assess strategies for bridging the 8.7 million tonne gap between projected GHG emissions in 2050 and the 80% reduction target.⁹ With respect to the building sector, the TransformTO effort has identified the following strategies as essential to achieving Toronto’s 2050 GHG reduction targets:

1. Elevate the energy performance of new buildings towards net-zero energy through continual periodic updates to the Toronto Green Standard;
2. Advanced community energy planning in all new major development & revitalization areas;
3. District-scale thermal energy solutions;
4. A long-term renewable energy strategy.

² University of Prince Edward Island. (2013, July). Retrieved from <http://projects.upei.ca/climate/2013/07/02/reflections-on-the-toronto-conference-25-years-later/>

³ The Atmospheric Fund. (2017). Retrieved from <http://taf.ca/about-us/#taf-timeline>

⁴ City of Toronto. (2016, December). Retrieved from <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=1556136696f85410VgnVCM10000071d60f89RCRD>

⁵ C40 Cities. (2017). <http://www.c40.org/cities/toronto>

⁶ City of Toronto. (2017). Retrieved from <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=4e4c295f69db1410VgnVCM10000071d60f89RCRD&vgnextchannel=a201fbfa98491410VgnVCM10000071d60f89RCRD>

⁷ TransformTO. (2017). Retrieved from <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=ba07f60f4adaf410VgnVCM10000071d60f89RCRD>

⁸ Toronto Staff Report. (2016, November). Retrieved from <http://www.toronto.ca/legdocs/mmis/2016/pe/bgrd/backgroundfile-98039.pdf>

⁹ TransformTO. (2017). Retrieved from <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=ba07f60f4adaf410VgnVCM10000071d60f89RCRD>



DESCRIPTION OF PROJECT

Toronto's Port Lands area comprises 356 hectares that stretches along the eastern portion of the City's downtown Waterfront. The majority of lands in the area are publicly owned by agencies at all three levels of government. Historically the area was an active industrial port with significant manufacturing and distribution capacity built up to support war efforts in the early half of the 20th century. While some industrial capacity remains in the area, there are large amounts of vacant and underutilized lands that have been contaminated by decades of industrial use. Given the proximity to Toronto's booming downtown core, this area will be redeveloped over the coming 30-50 years from largely post-industrial brownfields to a mixed-use residential, commercial and industrial area, with a considerable focus on creative industries (esp. film), while maintaining remaining port and industrial uses. Upon completion, there is projected to be over 2,000,000 million m² of gross floor area (residential, commercial and institutional) and between 17,500 to 25,000 residents and 25,000 to 30,000 employees.

Revitalization of Toronto's Port Lands area has long been viewed as an opportunity to demonstrate innovation in environmental sustainability, and low carbon energy practices in particular. Indeed, as far back as 2003 the policy direction for the Port Lands area supported an "integrated energy concept" which was designed to achieve low carbon energy self-sufficiency for the Waterfront and Port Lands area of the City through high energy efficiency at the building-scale, and district energy technology (and supportive policy) at the neighbourhood scale.¹⁰ More recently, in July 2014 Toronto City Council directed staff to report on guidelines for achieving "net zero energy import" in the Port Lands.

¹⁰ Waterfront Scan & Environmental Improvement Strategy Study. (2003, March). Retrieved from http://www1.toronto.ca/city_of_toronto/waterfront_secretariat/files/pdf/ch_5-energy.pdf



Within the Port Lands, planning in the Lower Don Lands area is most advanced. The Lower Don Lands - a 125 hectare area that runs from the Parliament Street Slip east to the Don Roadway and from the rail corridor south to the Ship Channel. The Lower Don Lands is one of 17 founding projects of the global C40 Climate Positive Development Program, which supports the development of projects that seek to meet a “climate positive” emissions target of net-negative operational greenhouse gas (GHG) emissions. Precinct-level planning in the Lower Don Lands area is proceeding, with the Keating Channel Plan having been released in 2010, and the Villiers Island Precinct Plan currently in development.

The Port Lands area forms part of the **largest** urban renewal project in North America, and one of the most significant waterfront **revitalization projects** in the world.

District energy networks have long been seen as critical for achieving net zero ambitions in the Waterfront and Port Lands context. In 2007, District Energy was seen as a core part of Waterfront Toronto’s sustainability strategy for the waterfront and Port Lands areas. At the time, WT’s energy master plan proposed one large district energy plant in each of the Eastern Bay Front and the West Don Lands areas. With the objective of implementing a district energy system at the outset of development in the area, Waterfront Toronto partners (Federal Government, Province of Ontario, and the City of Toronto) each committed cash to support the district energy strategy. The total proposed budget ranged from \$100m to \$150m.

By January 2008 the Board of Waterfront Toronto had decided to exit the district energy strategy after the Province of Ontario indicated it would not move forward with its portion of the funding and removed the Pan Am Athletes Village development from the proposed district energy network. This decision diminished the potential for Waterfront Toronto to be able to deliver the system cost-effectively.¹¹ Waterfront Toronto attempted to transfer ownership to a private sector entity who would assume the risk associated with project development and implementation. Waterfront Toronto’s efforts to find a 3rd party private sector investor in the district energy system were not successful because prospective private sector buyers had little interest in buying an asset with near-term negative cash flows and long-term debt obligations. Furthermore, the phased development model in the Waterfront area created uncertainty as to the payback period for the investment.

By 2009, aspects of Waterfront Toronto’s district energy plan were salvaged when Enwave agreed to sponsor the development of a building-scale district energy system in the Corus Corporation headquarters which has been planned to interconnect with the adjacent George Brown campus. Additional plans are still in play for district energy in the Eastern Bayfront area, as well as expansion of the Corus building DE plant.

Rationale for selecting as a case study

The Port Lands area forms part of the largest urban renewal project in North America, and one of the most significant waterfront revitalization projects in the world. With respect to net-zero carbon ambitions, the Lower Don Lands area, including the Keating Channel and Villiers Island, is one of the founding projects of the global C40 Climate Positive Development Program, which supports projects aiming to meet a net-zero (or net-negative) GHG emissions target. Given the scale and ambition of the Port Lands district, it represents an opportunity to study innovation at the intersection of land use and energy policy in Ontario.

¹¹ City of Toronto. (2015, June). Retrieved from <http://www.toronto.ca/legdocs/mmis/2015/ex/bgrd/backgroundfile-81764.pdf>





EXISTING POLICY/TOOLS

City-wide policies and tools

Official Plan

The City of Toronto's Official Plan contains a number of policies supporting the transition to low carbon and net-zero buildings and communities. These include broad support for the deployment of renewable and district energy systems (3.4.18), the inclusion of low carbon energy systems as eligible community benefits contributions by developers to enable higher height and/or density under section 37 of the Planning Act (5.1.1.6m).

Additional OP policy support for low carbon energy is provided under the recently approved Official Plan Amendment (OPA 262) which provides policy support for initiatives that "contribute towards an energy neutral built environment".¹² OPA 262 furthermore integrates new policy for secondary plans in urban growth centres and regeneration areas (which includes the Port Lands area) that requires an assessment of opportunities for district scale low carbon energy solutions through community energy planning (2.2.2).

Finally, OPA 262 has introduced requirements for developers to prepare an Energy Strategy in association with OPAs, zoning by-law amendments or Plan of Subdivision applications for large development proposals (over 20,000 m²) or for development within a Council-approved Community Energy Plan area. The purpose of the Energy Strategy is the early identification of opportunities to integrate local energy solutions that are efficient, low carbon and resilient.¹³

*Toronto Green Standard (TGS)*¹⁴

The TGS is a tool to implement the broader environmental policies of the Official Plan. The TGS is a two-tier set of sustainability performance measures for new building construction in the City of Toronto. Tier 1 is required for new construction, and sets a performance standard of a minimum 15% energy efficiency improvement over the Ontario Building Code (OBC). Tier 2 is a higher, voluntary standard of performance that sets a minimum 25% energy efficiency improvement over the OBC. Developers that achieve the tier 2 standard are eligible to receive a partial refund on Development Charges paid to the City. Energy efficiency standards are one of more than 20 sustainability themes addressed in the TGS.

The TGS was first introduced in 2006 on a voluntary basis. In 2010, tier 1 standards were made mandatory based on Site Plan Control powers in the Planning Act, dealing with the sustainable design of the exterior of buildings and sustainable design elements in the adjacent right-of-way.

*Green Roof By-law*¹⁵

The City of Toronto was the first jurisdiction in North America to adopt a by-law requiring green roofs on new commercial, institutional, industrial, and residential development with a minimum Gross Floor Area of 2,000m². The green roof coverage requirement is graduated, ranging from 20-60 per cent of Available Roof Space. The by-law was adopted by Toronto City Council in May 2009, under the authority of Section 108 of the City of Toronto Act, and expanded to include new industrial development in 2012.

¹² City of Toronto. (2015, November). Retrieved from <http://www1.toronto.ca/City%20of%20Toronto/City%20Planning/Environment/Files/pdf/ESA/OPA%20262%20Environmental%20Policies%20and%20Designation%20of%20ESA%20Areas%20BL%20No.%201158-2015.pdf>

¹³ City of Toronto. (2016, July). Retrieved from http://www1.toronto.ca/static_files/CityPlanning/PDF/energy-strategy.pdf

¹⁴ City of Toronto. (2017). Retrieved from <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=f85552c66061410VgnVCM10000071d60f89RCRD>

¹⁵ City of Toronto. (2017). Retrieved from <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=3a7a036318061410VgnVCM10000071d60f89RCRD>

*Energy Strategy Terms of Reference*¹⁶

This document sets out the required content for an Energy Strategy prepared to comply with Official Plan policy (Schedule 3). The Strategy must identify how the new development might achieve net zero on both an emissions and energy basis through efficient design and low carbon energy systems (building-scale renewables, and district energy).

*District Energy Ready Design Guidelines*¹⁷

Complementing the requirements for an Energy Strategy (see above), this guideline provides information to building developers on design approaches to being district-energy ready. The intent of these guidelines is to ensure that future connection to a district energy system is not precluded by initial building design.

Policy/tools specific to Port Lands area

*Central Waterfront Secondary Plan*¹⁸

The Secondary Plan governing development in the Port Lands area requires that Precinct Implementation Strategies include: “a comprehensive set of environmental performance standards for public and private infrastructure, buildings, and activities including, but not limited to, energy efficiency, reduction of CO₂ emissions, water conservation, clean air and waste (reduction, reuse and recycling)”.

*Waterfront Toronto Minimum Green Building Requirements (MGBR)*¹⁹

The MGBR apply to all new building projects within the Port Lands area and support the development of advanced, high energy performance buildings. The requirements leverage the Leadership in Energy and Environmental Design (LEED) standard, requiring that all new buildings achieve Gold Certification. Most notably in terms of transitioning to net-zero communities, new buildings are required to:

1. Energy efficiency: achieve 50% energy cost savings relative to the Model National Energy Code
2. On-site Renewable Energy: 3% of annual consumption, on a cost basis
3. District energy: design and construct buildings to be “district energy ready”

*Keating Channel Precinct Plan*²⁰

As the first neighbourhood to be developed within the Lower Don Lands portion of the Toronto waterfront, the Keating Channel Precinct will be a leading model for achieving carbon neutrality on a district-scale. The Precinct plan refers to a centralized district energy system as an essential element of achieving this objective.

¹⁶ City of Toronto. (2016, July). Retrieved from http://www1.toronto.ca/static_files/CityPlanning/PDF/energy-strategy.pdf

¹⁷ City of Toronto. (2016, October). Retrieved from http://www1.toronto.ca/City%20OP%20Toronto/Environment%20and%20Energy/Programs%20for%20Businesses/BBP/PDFs/District%20Energy%20Ready%20Guideline_October%202016.pdf

¹⁸ Toronto City Council. (2003). Retrieved from <http://www.toronto.ca/legdocs/2003/agendas/council/cc030414/plt5rpt/cl001.pdf>

¹⁹ http://www.waterfronttoronto.ca/uploads/documents/mgbr_version_2_1_november_2014_final_1.pdf

²⁰ City Keating Channel Precinct Plan. (2010, May). Retrieved from http://www.waterfronttoronto.ca/nbe/wcm/connect/waterfront/048f2525-b645-473b-a5f3-74d9b2bb1ebe/keating_channel_precinct_plan__may_2010_40_mb_1.pdf?MOD=AJPERES&CACHEID=048f2525-b645-473b-a5f3-74d9b2bb1ebe



Policy amendments precipitated by the Project

*Zoning by-law (438-36) amendment (By-law No. 1174-2010)*²¹

Zoning by-law amendment permits below-ground district energy systems within Commercial Residential zones of the Keating Channel West District.

The zoning by-law amendment also encourages land owners within certain areas of the district to strive for higher levels of sustainable performance through post construction Energy Modelling which confirms that the City's Tier 2 Toronto Green standard has been met, as well as LEED Canada Gold for new construction and major renovations.

Finally, the Zoning Bylaw amendment, through use of the Holding provision, works together with Section 37 requirements to secure connection of all buildings to a district energy system and/or on-site renewable energy sources, if available at costs comparable to other energy sources, through the Section 37 Agreement, which is registered on title.



STAKEHOLDER PERSPECTIVES

Developer perspectives

Mandate alignment enables collaboration

This project presents somewhat of a unique case in that the developer, Waterfront Toronto, is a publicly-owned entity with a legislated mandate to implement a land use development plan in an environmentally responsible manner.²² Waterfront Toronto has developed a Sustainability Framework to implement this mandate, and partnered with the C40 Climate Positive Development Program to set a context for objectives related to land use and energy themes in the Lower Don Lands portion of the Port Lands and Waterfront area.²³

The legislated mandate of Waterfront Toronto aligns with the City of Toronto's climate change mandate. This high-level policy alignment has opened opportunities for collaboration between staff with the Port Lands area seen as a living laboratory for policy innovation. Co-evolution of Waterfront Toronto's minimum Green Building Requirements and the City's Green Standard provides a good example of this. The former is a more aggressive standard, applied to publically owned property. An update to version 3.0 of the Toronto Green Standard is expected to go to Council for approval in 2017, which will map out a plan for getting to zero emissions by 2050 to meet the City's target.

Still trying to cracking the chicken and egg problem of capital investment in district energy systems

In ongoing work as part of the Villiers Island Precinct Plan,²⁴ Waterfront Toronto conducted a sustainability audit, using a Carbon Tool developed by Waterfront Toronto to determine whether the plan supported the Corporation's objectives related to the C40 Climate Positive Development Program. The audit found that, while the plan would likely achieve 20-30%

²¹ City of Toronto. (2010). Retrieved from <http://www.toronto.ca/legdocs/bylaws/2010/law1174.pdf>

²² Government of Ontario. (2002). Retrieved from <https://www.ontario.ca/laws/statute/02f28>

²³ C40 Cities. (2017). Retrieved from <http://www.c40.org/networks/climate-positive-development-program>

²⁴ Portlands Acceleration Initiative. (2013). Retrieved from <http://www.portlandsconsultation.ca/node/18>



reductions in GHGs relative to a business-as-usual development, achieving net-zero (or net-negative emissions) would require the implementation of precinct-wide district energy and community energy planning solutions powered by renewable energy sources.

As was learned through Waterfront Toronto's previous experience with district energy the financial model requires significant upfront investment. Energy developers are unlikely to invest at the scale required without some level of certainty as to return on investment over time. This requires some upfront certainty that there will be sufficient density (population and employment) to justify investment in district energy. At sufficient density the energy (heat and electricity) demand within the precinct would spread the capital cost over a larger number of consumers, improving the business case for investment. Furthermore, mandatory connection within the precinct would guarantee sufficient demand to recover capital costs with adequate return on capital. While falling short of mandating connection, by requiring a district energy feasibility study for new development in the Precinct, Zoning by-law amendment (438-36) is an important step towards building the business case for district energy in the precinct.

By the end of **2018**, the East Bay Front DE system will have 9 buildings connected with 2 remotely operated state-of-the-art DE plants.

Role of Local Energy Companies

The Port Lands case study provides an example of the role that specialized local energy companies like Enwave can play in providing expertise and capital needed to build district energy systems and micro-utilities. Were it not for Enwave's intervention or micro-utilities, in scaling-up district energy systems.

Although District Energy was at the heart of the master plan for the redevelopment of the Waterfront and Port Lands area, a lack of public capital compromised Waterfront Toronto's ability to realize the vision for a truly district-wide energy system. Enwave was able to bring capital and expertise to revive District Energy in the Waterfront. Enwave engaged in four month legal negotiations between Build Toronto, Waterfront Toronto, Corus Entertainment and the new building owners. Enwave plans to procure another DE system for the new George Brown College building adjacent to Corus Entertainment. By the end of 2018, the East Bay Front DE system will have 9 buildings connected with 2 remotely operated state-of-the-art DE plants.

Net-zero market leadership is emerging

Waterfront Toronto indicated that the sustainability framework and branding that has been created in the area, along with increasing consumer demand for sustainable buildings, have spurred private sector innovation and market leadership regarding net-zero energy. The NetZed suite in Aqualina, the first residential building under construction in East Bayside Precinct, was developed through Tower Labs – a collaboration between Tridel and MaRS to accelerate the adoption of green building products and services.²⁵ The net zero energy dwelling (NetZED) is a single suite penthouse unit that will contain its own independent mechanical and electrical systems, along with unique building materials to reduce heating and cooling loads. All of the home's high performance energy consuming equipment (heating, cooling, lighting, power and hot water) will be powered by electricity supplied by a dedicated photovoltaic and solar thermal system (a method of converting solar energy into direct current electricity) installed on the roof of the building and owned by the netZED's future buyer.²⁶

²⁵ Tower Labs. (2017). Retrieved from <http://towerlabs.org/portfolio/netzed/>

²⁶ Palamarchuk, A. (2016, March). Retrieved from <http://blog.waterfronttoronto.ca/nbe/portal/wt/home/blog-home/posts/net-zero-energy-dwelling-on-the-waterfront>



Municipal perspectives

Strategic Political Leadership

Strategic political leadership was identified as an important success factor for integrating net zero energy objectives for the Port Lands area in the absence of provincial legislation. Mayor David Miller's championing development of the City's 2007 Climate Change Action Plan, and his insistence that absolute GHG reduction targets be included was seen as a catalyst for current efforts to define pathways to net zero at a district and city-wide scale. More recently, Councilor Paula Fletcher, whose ward encompasses the Port Lands area, led a City Council motion to (1) establish net zero as a policy objective for the area and (2) direct city staff to report on guidelines for achieving this objective. The Port Lands Energy Plan, currently in development, will set out a pathway towards net zero energy import for the entire district. A rigorous and measurable triple bottom line is important to transcend political and administrative changes.

Bottom-up Policy Innovation

This case study provides an example of bottom-up policy innovation. The Port Lands area is seen as a living laboratory for policy and technology innovation, with the enhanced authority provided by Waterfront Toronto enabling the testing of new approaches that have since made their way into City of Toronto policy. Similarly the City of Toronto, as a result of unique powers provided under the City of Toronto Act, has been able to develop new policy approaches – such as the Standard Green Roof By-Law – that other municipalities will soon be in a position to implement as a result of proposed changes to the Municipal Act and the Planning Act, as part of Bill 68 – Modernizing Ontario's Municipal Legislation Act.²⁷

Intra-municipal coordination

The bureaucracy within a large City like Toronto inevitably results in administrative siloes. Staff spoken to as part of this study have indicated that there has been some successful collaboration across City departments for achieving low carbon energy objectives. For example, the Toronto Green Standard has been an instrumental tool for bringing together different departments, including Planning, Parks and Forestry, Water, Buildings, and Energy & Environment, to define what sustainable development looks like in a new construction context and set policy collaboratively.

Furthermore, the presence of a dedicated energy and environment division within the City bureaucracy is seen as providing critical expertise and capacity for engagement across the siloes of Planning and Building, enabling the development and implementation of new requirements for an Energy Strategy in large developments as part of the site plan approvals process, and for development of Community Energy Plan areas with enhanced policy, such as the Port Lands.

Use tools provided under the Planning Act

The City of Toronto has been able to make sustainable site design mandatory through the Toronto Green Standard by applying criteria to the Site Plan drawings, which is a legally-binding document. This approach has limitations in that the building code establishes what is required for developers in terms of mechanical systems, and other internal building components. The City currently has no authority to require energy efficiency and low carbon supply through the building permit approvals. There is an expectation that 2017 updates to the Ontario Building Code (OBC) will support municipalities with the development of net zero communities:

"The government intends to update the Building Code with long-term energy efficiency targets for new net zero carbon emission small buildings that will come into effect by 2030 at the latest, and consult on initial changes that will be effective by 2020. Ontario will consult on how to best achieve these targets through Building Code improvements."²⁸

²⁷ Legislative Assembly of Ontario. (2016). Retrieved from http://www.ontla.on.ca/web/bills/bills_detail.do?locale=en&BillID=4374

²⁸ Climate Change Action Plan. (2016). Retrieved from <https://www.ontario.ca/page/climate-change-action-plan>



Lessons learned and replicability

- Political champions are essential for setting the high-level policy context for net zero communities (e.g. establishing GHG targets, and sponsoring city-wide plans). Staff-level champions, at multiple points within the bureaucracy, are essential for moving forward the detailed planning and implementation to realize high-level political objectives.
- Sustained investment in policy development and implementation over time is critical to building capacity, weathering political and administrative changes and mainstreaming climate change and energy issues in land use planning.
- Consider using major redevelopment projects (e.g. brownfields) to create a living laboratory to demonstrate the success of innovative policies. Community improvement plans (CIP) for brownfield redevelopment sites can be used as an instrument in this regard.
- It is critical for municipalities at all levels to translate their aspirational objectives for low carbon city-building into actionable policy and tools. This means starting with a strong understanding municipal authority under existing provincial legislation, and how that translates into scoping an appropriate role for the City government relative to other public and private sector stakeholders (e.g. developers). It furthermore means developing a clearer understanding of the alternative pathways to achieving high-level policy objectives, and their trade-offs in terms of economic, social and environmental impacts.
- Seed capital is critical to move large district energy systems forward. There may be a role for the Province's proposed Climate Change Solutions Development Corporation²⁹ to provide seed capital to support the development of municipal district energy systems on a precinct-scale.
- Municipalities have an important role to play in bottom-up policy innovation. Just as the Province of Ontario developed innovative policies, such as the coal phase-out, that have since made their way into Federal Government policy, municipal government approaches such as the Toronto Atmospheric Fund (TAF) have now made their way into Provincial Government policy.
- When leading on innovative municipal policy ventures, it is important that proposals be made robust to various political perspectives. In the case of Toronto's push to develop district energy systems, the rationale for policy innovation is supported by low carbon policy objectives, as well as economic and social objectives to enable growth in an area adjacent to the downtown core that lacks sufficient transmission grid capacity to otherwise enable that growth. And, given anticipated energy cost increases over time, district energy systems can save money for building owners and operators. With a robust environmental, economic and financial case, support from across the political spectrum is easier to obtain.

²⁹ Development Corporations Act. (2017). Retrieved from http://www.downloads.ene.gov.on.ca/envision/env_reg/er/012-9270.pdf



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