

Win-Win: Lessons from B.C. and New York in Using Thermal Energy Networks to Support Good Jobs and Urban Decarbonization

April 2025

Economic Development and Market Transformation



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ZERO EMISSIONS INNOVATION CENTRE

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About Us

The Zero Emission Innovation Centre (ZEIC) is a purpose-built charitable organization dedicated to market transformation and enabling zero carbon communities and economies across the region and province. ZEIC is part of the Low Carbon Cities Canada (LC3) Network established by the Government of Canada and the Federation of Canadian Municipalities.



Partners

Delegation Lead: The Building Decarbonization Coalition (BDC) aligns critical stakeholders on a path to transform the nation's buildings through clean energy, using policy, research, market development and public engagement. The BDC and its members are charting the course to eliminate fossil fuels in buildings to improve people's health, cut climate and air pollution, prioritize high-road jobs, and ensure that our communities are more resilient to the impacts of climate change.



Delegation Partner: The Building Decarbonization Alliance (BDA) is a non-partisan and cross-sector coalition working towards a future where electrified buildings are part of an affordable and resilient energy system that contributes to a prosperous, sustainable, and decarbonized Canada.



Delegation Partner: Reshape Strategies is a Vancouver-based boutique firm of senior professionals with diverse skills and deep experience in energy and infrastructure, in particular on thermal energy networks. Reshape works around the world on thermal energy networks, green buildings and neighbourhoods, renewable energy and micro-grids, wastewater resource recovery, and other energy and buildings-related issues.



Sponsors

Title Sponsor: Creative Energy



Supporting Sponsors: New Westminster and District Labour Council, SHARC Energy, Vancouver and District Labour Council



Territorial Acknowledgement

ZEIC acknowledges and is honored to work on the unceded and traditional lands of the ḡíćə́y (Katzie), q'w̓a:ńł'əń (Kwantlen), kw̓ikw̓əłəm (Kwikwetlem), x̓m̓əθk̓ə́y̓əm (Musqueam), qiqéyt (Qayqayt), səmi'ɑ:mu (Semiahmoo), Sk̓wx̓w̓ú7mesh (Squamish), stɑ:lɔʊ (Sto:lo), s̓c̓əwəθən məsteyəx̓w̓ (Tsawwassen), and səliłwətał (Tseil-Waututh).

Top Takeaways:

1. The current “building-by-building” decarbonization approach can be both costly, and disadvantageous to utility workers who are currently involved in a high-carbon energy source, such as gas for building heating.
2. Thermal energy networks (TENs) represent a high-potential urban decarbonization solution, because of the affordability and energy efficiency benefits that come from their larger scales. In addition, they also provide a pathway for high-carbon utility workers to play a meaningful role in the energy transition.
3. A strategic partnership to TENs that works across the energy and construction sectors, and which brings in environmental and community groups, can unlock economic and social benefits that go far beyond decarbonization.

What are thermal energy networks?

Thermal Energy Networks (TENs) provide efficient and affordable clean energy heating and cooling to entire neighborhoods through a shared network of water pipes that transfer heat in and out of buildings. These neighborhood-scale systems allow buildings to exchange heat with a number of energy sources, such as lakes and rivers, energy intensive buildings, wastewater systems, or the stable temperature of the earth, and can be designed with backup systems to remain reliable even amid a power outage. TENs can also use shallow boreholes to capture and store excess heat underground for use days or months later. (Source: Building Decarbonization Alliance)

Overview

Thermal energy networks (TENs) are emerging as a solution that can help address the challenges around the current “building-by-building” model of urban decarbonization. Such an approach, which focuses on using incentives and regulations to drive individual building retrofits, can be both expensive, fragmented, and can create uncertainty for utility and other works who primarily deal with fossil fuels today.

Thermal energy networks, because they go beyond single buildings, can create cost efficiencies, but are more accessible to existing institutions, like utilities, and workforce structures, ideally creating pathways to faster, more effective decarbonization. With over a dozen networks in the region, such as Creative Energy, including some (cont.)

using advanced waste-heat recovery, Metro Vancouver is increasingly recognised as the North American hub of this high-potential solution.

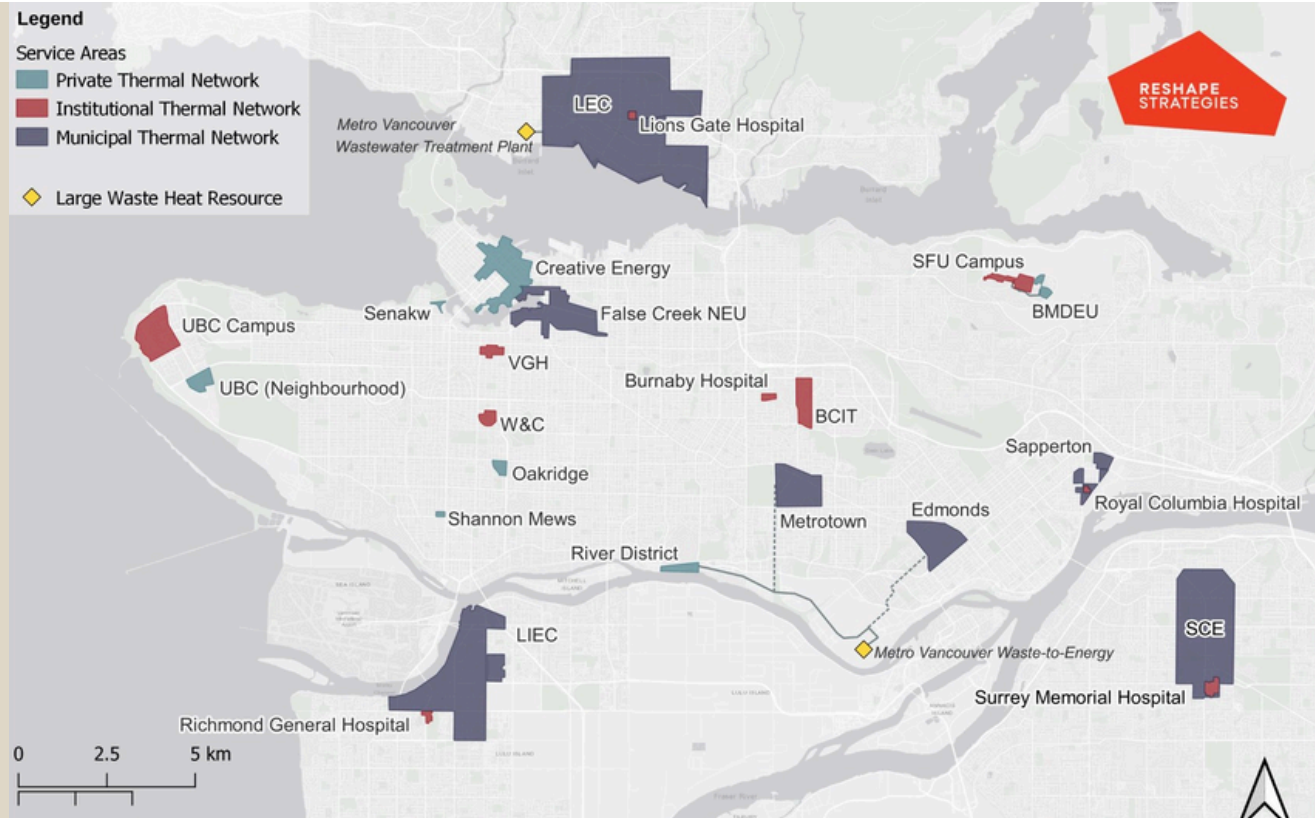


Figure 1. Thermal energy networks in Metro Vancouver. Source: *Reshape Strategies*

From November 18 to 21, 2025, the U.S.-based Building Decarbonization Coalition (BDC) led a delegation to learn about the Vancouver region's approach to TENs. The group included 16 labour and community leaders from BDC New York's UpgradeNY collaboration as well as guests from elsewhere in Canada and the U.S.

BDC worked with the Zero Emissions Innovation Centre (ZEIC), BDC worked with the Zero Emissions Innovation Centre (ZEIC), Reshape Strategies, and the Canadian Building Decarbonization Alliance (BDA), to deliver three days of hands-on learning, multi-stakeholder dialogues, and peer-to-peer learning on the challenges and opportunities of deploying TENs across North America.

A Focus on Workers

The delegation from New York state was organized by BDC under the auspices of Upgrade NY, a unique alliance of labour, environmental, and economic justice groups. Upgrade NY's members on the delegation included:

- Alliance for a Greater New York (ALIGN)
- Alliance for a Green Economy (AGREE)
- Cornell Climate Jobs Institute
- New York League of Conservation Voters
- New York State Building and Construction Trades Council
- New York State United Association (UA) of Journeymen and Apprentices of the Plumbing and Pipefitting Industry
- UA Local 7, Plumbers and Steamfitters
- Steamfitters Local 638
- We ACT for Environmental Justice

To facilitate an effective and impactful dialogue with these organizations, ZEIC leveraged its Sustainable Workforce Coalition (SWC) initiative to invite participation from across the British Columbian organized labour community, including from the BC Federation of Labour, district labour councils, and members from the construction, professional, and film sectors.

The Sustainable Workforce Coalition (SWC)

The Sustainable Workforce Coalition is a regional, member-based initiative to catalyze an equitable transition for workers in Metro Vancouver and BC to a net zero economy through coordination, research and programming.



zeic.ca/swc

The Coalition is staffed by ZEIC and its members include Indigenous representatives, business leaders, labour unions, community groups, industry associations, local and provincial government, and others.

Presentations and Dialogue

To situate the New York delegates and provide the greatest possible connectivity to the B.C. ecosystem, ZEIC organized a full day on November 19th, including:

- Overview presentations on B.C. and Metro Vancouver climate and energy policy
- Networking lunch with local labour leaders

- Presentation on the B.C. labour market context and history of social dialogue and organizing
- Short talks by labour leaders from B.C. and NY on core challenges and promising solutions they're working on related to the energy transition, workers, and coalition-building
- An open dialogue from all attendees on needs, challenges, and promising solutions to protect the rights and well-being of workers while realizing the needs of the energy transition



Photos 1 & 2. Discussions from the ZEIC organized day on November 19, 2024

Key Insights

The dialogue produced some unique insights that help reframe how organizations looking to create good jobs, decarbonize energy, and create more sustainable cities can use to drive their work, such as:

Environmental and labour groups are not always using the same scope when they think of decarbonizing the built environment. Environmental groups often consider the entirety of the built environment. This ranges from small, detached homes, to larger apartment buildings, to (at least some) of the energy system that feeds it, and all of the workforce, technical, and financial considerations that come with decarbonizing cities. In contrast, many labour voices focus more specifically, via the work of their members, on (a) larger buildings and (b) the (often fossil) energy systems that feed them. In some respects, broader economic shifts that led to decreased construction (e.g., oil and gas extraction) were also a concern of some labour representatives, as their members may work on the entire value-chain from extraction facilities to the end-use in buildings for heating. A lack of understanding about these different scopes can sometimes derail potential partnerships.

The downstream benefits and costs of building decarbonization are currently uniquely disadvantageous to unionized workers, both in the construction and utility sectors. Because of the “building-by-building” approach that most policy and programs take, many unionized workers cannot meaningfully participate in building decarbonization, both because of contract structures and the generally small size of projects. Furthermore, the gradual erosion or outright decommissioning of higher-carbon energy infrastructure are putting pressure on some existing unionized workers. Newly created jobs in renewable energy are sometimes being created without thought to matching the remuneration, security, or availability of prior fossil jobs. This can be especially challenging where energy generation becomes significantly more distributed (e.g., solar). All these factors have made it hard for unions to get connected to many building decarbonization initiatives and have, in certain cases, made them feel as though opposition to the energy transition is their only safe option. TENs, however, provide a more familiar approach – both in development and operation – that existing utility and construction workers can participate in with next to no retraining, and sometimes even within existing contracts and agreements that can still lead to meaningful decarbonization.

There is a convergence of interests around scaling up from a “building-by-building” approach to decarbonizing the built environment. Environmental groups are struggling to maintain, let alone increase, the current pace of building decarbonization in the face of sometimes poor individual project business cases, from the fossil fuel industry, and customer uncertainty around electrical grid stability. Moving past a building-by-building approach to urban decarbonization, where we fully leverage the potential of TENs and distributed renewable energy more generally, overcomes not only major constraints in decarbonization terms, but, with careful engineering, creates new pathways for labour involvement. Resulting alliances around this approach that can lead to synergistic climate and prosperity benefits.

The holistic picture of the workforce needs for the energy transition remains profoundly unclear. There are numerous top-down forecasts that are showing both large and small increases in the need for both workers more generally, and workers with specific, often highly credentialed skillsets (e.g., electricians). These top-down forecasts often have conflicting and/or insufficiently developed assumptions about the pace, cost, and scale of the energy transition and the mis-match of these across the economy, and sectors, makes a coherent narrative difficult, both for policy-makers and the public more generally. More granular, bottom-up projections of workforce demand would be useful, especially, from a labour point of view, when attached to particular projects or large-scale contracts (e.g., portfolio-wide decarbonization of public or non-profit housing) to better enable dispatching. There is fertile ground to collaborate in sharing different methodological approaches for this kind of modeling work across organizations, sectors, and jurisdictions.

Labour unions and environmental groups have an aligned interest in protecting against a “race to the bottom” in credentials for people working on the energy transition.

For example, while heavy use of micro-credentials can create impressive numbers of workers “trained” in relevant thematic areas, a lack of depth and wrap-around support is felt by many to lead to long-term deficiencies and instability – both for workers and employers. These approaches, particularly when combined with broader de-regulation or de-certification of the trades, as was true in British Columbia from 2003 to 2023, can have a deleterious effect on quality of work, sector-wide wages, and job security. All this said, all participants identified that there are innovations, particularly across sectors, that should be explored to further refine and improve relevant apprenticeship, trades, and credentialing and other regulations.

Institutionally-led TEN development may present new pathways to get around sticky utility governance issues.

The New York delegation was particularly interested to learn about the municipally-led nature of TENs in B.C., and that there may be opportunities to find friendly institutional partners below the state level who could help build out TENs in a nodal way, which would give the workforce certainty and union-friendly environment that would align to the interests of all stakeholders.

Tools such as prevailing wages and sectoral bargaining deserve greater exploration as possible areas of collaboration between labour and environmental groups.

Reference was made to the [Boston Residents Jobs Policy](#), which was created in 1983 to mandate the use of local labour, with specific carve-outs for equity-deserving and racialized populations, which benefit from quotas on large public and private projects. This is somewhat similar to the [City of Vancouver’s Community Benefit Agreement policy](#), which mandates similar provisions for projects of a large size. Developing more benefit agreement structures, prevailing wages policies, or other types of sectoral bargaining could present aligned ways for labour and environmental groups to advance shared progress at a systemic scale and link together the jobs and decarbonization agendas.

Campaigns and alliances that focus on agreement, such as the UpgradeNY collaboration, and leave aside areas of potential disagreement, can lead to lasting impact and relationships.

The New York delegation’s sharing on their work on the [Utility Thermal Energy Networks and Jobs Act](#) was inspiring to the B.C. participants, not only for the speed with which the coalition organized (three weeks), but the mutually-reinforcing wins they got for one another around labour protections and environmental performance. In BC, the ZEIC’s work through the SWC has focused on creating relationships between actors with a shared interest in fair energy transition for workers, with campaign-based work a possible area of work in the future, but still to be determined.

Promising Solutions and Next Steps

The dialogue, and the whole delegation visit, gave space to participants from New York and B.C. to share a range of promising solutions that have been developed in both jurisdictions, which could be leveraged to advance TENs in both jurisdictions.

The Building Decarbonization Coalition's view on the trip

For New York delegates, there was significant interest in:

- Learning more about the municipally- and institutionally-developed TENs and how this could be operationalized in the New York context
- Learning more about B.C.'s land data system and the provincial crown corporation that manages all parcel-level data, the BC Assessment Authority

For Vancouver participants, interest was expressed around:

- Learning how the New York State's Public Service Commission (the NY equivalent to the B.C. Utilities Commission) developed and is implementing the Utility Thermal Energy Networks and Jobs Act of 2022.
- Learning more about New York's Office for a Just Energy Transition and how it could inform policymaking and planning in B.C.

Throughout all of the dialogues and events BDC, BDA, and ZEIC, it was clear that there are considerably more opportunities to coordinate across networks on key building decarbonization issues. Future work with these three networks, and their larger constituencies was deemed to be high value for participants from both jurisdictions. The identified next steps

- Sharing best practices and learnings around labour market forecasting, job-counting, and other data-related exercises through webinars and joint studies.
- Sharing best practices and remaining coordinated on the network and coalition-building that both UpgradeNY and the SWC are practicing in their respective ecosystems.
- Exploring unique ways to pursue blended finance and community ownership of energy systems to further generate community wealth
- Creating easier means of sharing data and smaller case studies between the different networks.

In the longer-term, many agreed that a B.C. delegation to New York State to share in this kind of mutual learning would also be useful, something ZEIC and BDA will discuss further as part of their collaborations on TENs and otherwise.

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