Thermal Energy Networks in Canada: Municipal Policy Pathways

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Executive Summary

This policy brief is designed to support municipal governments across Canada that aim to implement or encourage the use of thermal energy networks (TENs) to advance heating decarbonization. In doing so, TENs can also deliver broader benefits, such as lower heating and cooling costs, improved energy resilience, and local economic opportunities. Although the focus is on municipal authority to advance TENs adoption, the policy brief also highlights opportunities for provincial and territorial governments to further empower municipalities to advance climate change mitigation and building decarbonization through TENs.

Depending on the contents of a municipality's enabling legislation, authority to implement or encourage the use of TENs may be found within municipal powers in the areas of land-use planning, development control, and building regulation. "General welfare" powers are a potential source of municipal authority to implement or encourage the use of TENs, but these powers have significant legal limitations that must be assessed in the context of TENs adoption. Municipal governments may have specific powers to establish energy utility systems or provide "municipal services" that could support TENs implementation by municipal governments themselves, and powers to grant municipal franchises may be available to support the implementation of TENs by private developers.

Municipal governments that wish to implement or encourage the use of TENs, and that have identified requisite sources of authority to do so, will need to choose appropriate TENs definitions for applicable policy documents and bylaws or regulations. Existing municipal bylaws to enable TENs in Canada have generally been designed to enable specific TEN projects within defined service areas, not to enable an unknown number of potential TENs within a municipality. Municipal policy statements expressing objectives related to TENs may include broader language that could accommodate multiple TENs initiatives.

Municipal governments that wish to implement or encourage the use of TENs will also need to assess whether they have the authority to implement mandatory or permissive connection requirements and determine which option will be most appropriate. In some cases, mandatory connection requirements may be necessary to establish customer bases that are large enough to make TENs economically feasible. Municipal governments that are empowered to establish and operate their own TENs as municipal energy utilities or municipal services may have corresponding authority to control when and how new developments will connect to their systems. When TENs are established by private developers, it is possible that municipal governments may not be able to impose mandatory connection requirements.

Municipal governments that wish to implement or encourage the use of TENs may also conduct clean heat planning to support TENs adoption. Municipal clean heat planning to advance TENs adoption can take several forms. As practical starting points, it will often include gathering information about municipal energy use and energy needs, identifying areas within the municipality that are dense enough to make TENs feasible, and identifying energy-intensive infrastructure such as data centres, supermarkets, sewers, or wastewater treatment plants that could supply waste heat to power TENs. Gathering information, conducting feasibility studies, and engaging in conversations to explore opportunities are activities that should be within the power of all municipal governments across Canada.

Table of Contents

Disclaimer

The legal information and analysis presented in this policy brief should not be substituted for or relied upon as legal opinion or legal advice. Third-party reliance on this report is at that party's sole risk. A municipal government that wishes to explore an option discussed in these pages should engage legal counsel to explore viable opportunities and potential legal risks.

1.0 Introduction

This policy brief is designed to support municipal governments across Canada that aim to implement or encourage the use of thermal energy networks (TENs) to advance climate change mitigation through building decarbonization. It provides an overview of municipal government authority that may be available to implement or encourage the use of TENs, and offers prototype policy statements and municipal bylaw language.

Although this policy brief focuses on municipal authority to advance TENs adoption, it also highlights opportunities for provincial and territorial governments to further empower municipalities to advance climate change mitigation and building decarbonization through TENs.

Municipal governance powers vary across Canada. While some municipal governments already hold significant powers to advance TENs adoption, in many cases provincial or territorial law reform is needed to further empower municipal governments to advance climate change mitigation and building decarbonization through TENs.

TENs are localized energy systems that deliver heating or cooling through networks of pipes that circulate steam or water. Also known as "district energy systems", TENs have evolved over the past century and a half, with "first-generation" systems emerging in the late 1800s to convey steam heat to buildings and subsequent generations developing to move heated or cooled water to buildings.[1] The law and policy recommendations presented in this policy brief are designed to be TENs generations-neutral, so the focus is on effective TENs adoption, not advocacy for specific TENs generations or models.[2]

Although TENs adoption can and should be used to advance climate change mitigation through building decarbonization, this policy brief does not assume that new or upgraded TENs will be fully decarbonized when they begin operations. Depending on the circumstances, TENs adoption may support cumulative greenhouse gas ("GHG") emissions reductions even when TENs are not fully decarbonized at the outset. A municipal government that aims to implement or encourage the use of a TEN to advance climate change mitigation through building decarbonization will need to assess the TEN's potential to achieve this result, taking energy options and the impacts of existing building heating and cooling systems into account. The municipal government will also need to consider what tools it could use to phase out the use of fossil fuel energy sources over time, to ensure that even if a TEN is not fully decarbonized at the outset, decarbonization or carbon neutrality could be achieved in years to come.

This policy brief does not attempt to identify every law and policy option that may be open to municipal governments across Canada that wish to implement or encourage the use of TENs. The overview presented in these pages is high-level, and the prototype policy statements and municipal bylaw language presented herein are intended to serve as useful examples only. If engagement with energy experts and legal counsel identifies legal barriers to implementing options discussed in these pages, municipal governments may need to consider advocating for law reform at the provincial or territorial level to have those barriers removed.

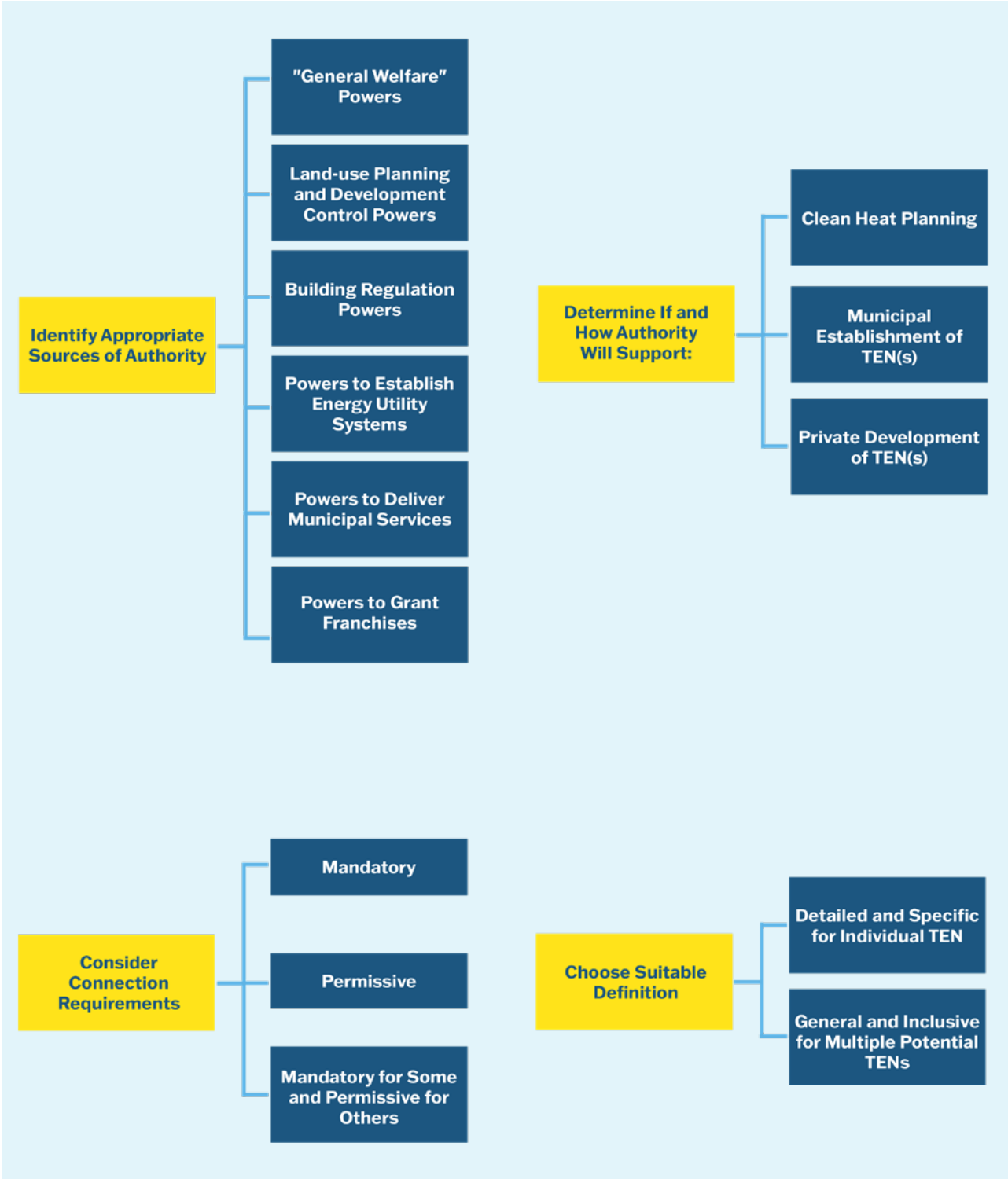
Part 2.0 of this policy brief provides an overview of municipal government authority to enable TENs, focusing in particular on municipal powers in the areas of land-use planning, development control,

building regulation, municipal service delivery, and franchise agreements. Part 3.0 explores how the term “thermal energy network” should be defined in municipal policies and bylaws or regulations, and also in provincial or territorial legislation, to best equip municipal governments to implement or encourage the use of TENs in their communities. Part 4.0 considers the use of mandatory and permissive TENs connection laws and policies to support TENs’ success, and Part 5.0 explores opportunities for municipal governments to engage in clean heat planning to support TENs adoption.

Together, the components of this policy brief outline a process for exploring various forms of municipal governance authority that could advance TENs adoption. Depicted visually, that process would look like this:

It is important to bear in mind, however, that depending on a municipality’s established practices and level of experience, the process for exploring ways to advance TENs adoption could be different from the process depicted above. For example, a municipal government may wish to begin by considering the extent of its powers to use clean heat planning as a way of advancing TENS, focusing on its land-use planning and development control powers as the starting point for its analysis of what is possible.

The exploratory and decision-making processes suggested in this guide are suggestions only: ultimately, each municipal government can choose where to begin.


Identify Appropriate Sources of Authority
"General Welfare" Powers
Land-use Planning and Development Control Powers
Building Regulation Powers
Powers to Establish Energy Utility Systems
Powers to Deliver Municipal Services
Powers to Grant Franchises
Determine If and How Authority Will Support:
Clean Heat Planning
Municipal Establishment of TEN(s)
Private Development of TEN(s)
Consider Connection Requirements
Mandatory
Permissive
Mandatory for Some and Permissive for Others
Choose Suitable Definition
Detailed and Specific for Individual TEN
General and Inclusive for Multiple Potential TENs

2.0 Municipal Powers to Enable Thermal Energy Networks

Across Canada, municipal powers in the areas of land-use planning, development control, building regulation, municipal service delivery, and franchise agreements vary considerably. For any municipal government that wishes to implement or enable a TEN, it will first be necessary to assess the nature and scope of the powers that the municipality holds.

Within legal literature, Canadian municipalities are often referred to as "creates of statute", because they are established and empowered by legislation enacted by provincial and territorial governments. Under Canadian law, municipal governments have no inherent, constitutionally conferred authority of their own: the powers they exercise are powers that belong to the provincial and territorial governments and which those governments delegate through statutes known as "municipal enabling legislation".

The following sections provide an overview of key municipal powers that may be available to municipal governments that want to implement or encourage the use of TENs in their communities. The information presented in this overview is high-level and not exhaustive: municipal governments may have additional powers to enable TENs that are not canvassed here.

2.1 General Welfare Powers

Municipal governments in Canada typically hold powers that are known colloquially as "general welfare" powers. These powers stem from provisions in municipal enabling legislation that grant broad authority to make bylaws to support community welfare, heath, wellbeing, and the protection of persons and property.

In the Supreme Court of Canada's landmark decision in *114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)*,[3] commonly known as "*Spraytech*", the Town of Hudson, Québec, was found to have general welfare powers that enabled it to make a bylaw restricting pesticide use within the Town and prohibiting the use of pesticides for purely cosmetic purposes. Under Québec's *Cities and Towns Act* (as it stood at the time), this general welfare power was expressed as follows:

> 410. The council may make by-laws:
>
> (1) To secure peace, order, good government, health and general welfare in the territory of the municipality, provided such by-laws are not contrary to the laws of Canada, or of Québec, nor inconsistent with any special provision of this Act or of the charter[.][4]

Similar general welfare powers are found in municipal enabling legislation across Canada, although the actual language varies from jurisdiction to jurisdiction. To give just two examples of similar but slightly different language: under Newfoundland and Labrador's *Towns and Local Service Districts Act*, town councils are empowered to make bylaws respecting the "safety, health and well-being of people and the protection of people and property";[5] under *Alberta's Municipal Government Act*, municipal councils are empowered to make bylaws respecting the "safety, health and welfare of people and the protection of people and property".[6]

Importantly, the Supreme Court of Canada's decision in *Spraytech* makes it clear that general welfare powers, although broad, are not unlimited. One important limitation is that general welfare powers cannot be used to override or circumvent express restrictions on municipal authority. For example, if a municipality's enabling legislation states that the municipal government cannot impose building standards that exceed the standards adopted by the provincial or territorial government, then the municipal government cannot use its general welfare power to bypass that restriction on its authority to regulate buildings. Another important limitation on general welfare powers is one that applies to all municipal bylaw-making powers: municipal bylaws cannot conflict with applicable provincial or federal laws.

Legal counsel—whether municipal lawyers or private practitioners with municipal law expertise—can help to assess the nature and scope of a municipal government's general welfare powers.

Canada's courts have developed two tests for conflict between municipal laws and provincial or federal laws (the same tests are also used to determine if there are conflicts between provincial and federal laws). The first test for conflict is the "impossibility of dual compliance test", which asks if it would be impossible for a person to comply simultaneously with the municipal law at issue and the corresponding provincial or federal law. Impossibility of dual compliance will typically be found where one law requires a person to do something and the other law prohibits the person from doing that thing.[7] The second test for conflict is the "frustration of purpose" test, which asks if the municipal law at issue gets in the way of an applicable provincial or federal law and "frustrates" the provincial or federal government's ability to achieve the purpose of that law.[8] If a municipal law is found to conflict with a provincial or federal law, the municipal law will be held inoperative to the extent of the conflict.

Municipal governments that want to implement or encourage the use of TENs in their communities should work with legal counsel to evaluate whether they have general welfare powers that could support TENs adoption and assess the scope of those powers where they exist.

2.2 Land-use Planning Powers and Development Control Powers

Within this policy brief, references to "land-use planning powers" refer primarily to municipal powers to establish land-use planning policies. Land-use planning policy documents go by several names across Canada, including "Official Community Plan", "Municipal Planning Strategy", and "Municipal Plan". Regional municipalities and large urban centres may employ two or more tiers of land-use planning policies, with a regional or master plan providing an overarching framework and secondary plans offering more specificity for localized communities. For simplicity and consistency, this policy brief uses the term "municipal plan" to refer to all such documents unless the context otherwise requires.

Within this policy brief, references to "development control powers" refer primarily to municipal powers to make bylaws or regulations to implement the land-use planning policies that are expressed in municipal plans. Development control powers include municipal powers to make zoning bylaws (sometimes called land-use bylaws) that designate zones within the municipality and prescribe the kinds of developments that are permitted within each zone.

Municipal enabling legislation typically requires municipal governments to address a number of issues in their municipal plans. For example, Nova Scotia's *Municipal Government Act* requires Municipal Planning Strategies to include policy statements respecting, among other topics: "the objectives of the municipality in respect of its physical, economic and social environment"; "the future use, management and development of lands within the municipality"; and, "any other matter prescribed by the regulations".[9] Additionally, in Nova Scotia, Municipal Planning Strategies must be consistent with legislated Statements of Provincial Interest and must meet several minimum planning requirements that are prescribed by regulation.

Municipal enabling legislation typically gives municipal governments discretionary powers to address additional matters in municipal plans that are not mandatorily required. For example, under Nova Scotia's *Municipal Government Act* and its corresponding *Minimum Planning Requirements Regulations*, Municipal Planning Strategies may include discretionary content on several listed topics, including, among others: planning tools; engagement; fiscal matters; the natural environment; resource lands, infrastructure, and economic development; and culture, heritage, and landscape features. The discretionary contents related to planning tools include policy statements on the "use, content, development, and administration of" "zoning", "development agreements", "comprehensive development districts", "site-plan approval areas", "incentive or bonus zoning", "studies to be carried out before undertaking specified developments or developments in specified areas", "staging development", "non-conforming uses and structures", and "subdividing land", among others.[10] The discretionary contents related to the natural environment include policy statements on "climate change mitigation and adaptation" and "protecting the natural environment and biodiversity", among others.[11]

Typically, policy statements within municipal plans do not create binding legal requirements in and of themselves: to be given such effect, they must be implemented in municipal bylaws or regulations that have the force of law. That being said, policy statements within municipal plans serve the important purpose of providing foundations and parameters for the bylaws or regulations that govern land use and development within municipalities. Municipal enabling legislation typically requires land use and development bylaws or regulations to be reasonably consistent with applicable municipal plans, which means that municipal plans provide governing frameworks for the contents of land use and development bylaws and regulations.

Policy statements in municipal plans can also serve broader purposes of telegraphing municipal governments' visions and objectives for their communities. For example, policy statements respecting GHG emissions reductions, climate change mitigation, and green building objectives can demonstrate that clean energy initiatives are of interest and that the municipal government wants to explore options to further these objectives. In the City of Brampton, Ontario, the Heritage Heights Secondary Plan includes the sustainability and climate objective of facilitating "efficient energy generation and distribution systems, where appropriate, including district energy, within medium and high density-rise development".[12] The Plan also recognizes the role that district energy systems can play in decarbonization, and it states that the City "will work with appropriate partners to develop a Thermal Energy Utility that will facilitate the establishment of district energy systems".[13] Telegraphing objectives and intentions like these can be useful for all municipal governments that aim to implement or encourage the use of TENs in their communities, not least because doing so can catalyse conversations about what may be possible and what law reform may be necessary to seize the best opportunities. In and of themselves, policy statements within municipal plans cannot empower municipal

governments to establish TENs, require TEN connections or TEN-ready developments, or impose GHG emissions standards for new or existing buildings. For each of these actions, municipal governments must identify appropriate sources of authority within their municipal enabling legislation or other applicable provincial or territorial laws.

Depending on the contents of their enabling legislation or other applicable provincial and territorial laws, municipalities may have the authority to use development control tools such as zoning designations and re-zoning application processes, development agreements, subdivision or site plan approvals, or incentive and bonus zoning agreements to encourage or require buildings to connect to established TENs or be TEN-ready. Some of these powers intersect with municipal building regulation powers, which are discussed below. Ultimately, any municipal government that wants to explore its options in this regard should consult legal counsel to examine the nature and scope of its legislated authority.

2.3 Building Regulation Powers

For most municipal governments in Canada, building and energy codes adopted by the provincial and territorial governments provide the foundations for municipal building regulation. Some municipal governments have been empowered to adopt and implement their own building codes, and others have narrower powers that allow them to impose certain standards that exceed those of the provincially or territorially adopted codes. Some municipal governments have no power to adopt their own codes or impose standards that exceed those adopted by the province or territory: these municipal governments are limited to implementing the provincially or territorially adopted codes.

By creating conditions in which GHG emissions above prescribed thresholds will be prohibited for new or existing developments, municipal governments can make low-carbon TENs attractive to developers and existing building owners.

Municipal governments that want to encourage the use of TENs in their communities may wish to incent the use of TENs by imposing Green Development Standards or Building Emissions Performance Standards that limit permissible GHG emissions from new and existing buildings. By creating conditions in which GHG emissions above prescribed thresholds will be prohibited for new or existing developments, municipal governments can make low-carbon TENs attractive to developers and existing building owners. However, whereas most municipal governments in Canada will likely be able to identify requisite authority within their enabling legislation to impose voluntary Green Development Standards or Building Emissions Performance Standards, many will find it more difficult, or even impossible, to identify the authority that would be necessary to make such standards mandatory.

The City of Vancouver is an example of a municipality that is largely unconstricted by the contents of the provincially adopted building code. The requirements of British Columbia's *Building Act* do not apply to the City,[14] and Part IX of the *Vancouver Charter* gives the City independent powers to regulate buildings within its jurisdiction. Notably, not only is the City empowered to establish its own building regulations, but it also has express authority to regulate the construction of buildings "where the reduction of greenhouse gas emissions is concerned".[15] This legislated authority empowers the City to impose Green Development Standards that limit building GHG emissions in building construction.

The City of Vancouver's building regulation powers are not typical for Canadian municipalities, but they offer strong examples of how provincial and territorial governments could empower municipalities to take greater action to require GHG emissions reductions, encourage TENs adoption, and mitigate climate change through building regulation.

On the opposite end of the spectrum, municipalities in Nova Scotia are bound to implement the requirements of Nova Scotia's *Building Code Act*[16] and ministerial regulations established under that Act: they are not empowered to adopt their own building codes or impose building standards that exceed those adopted by the province.

Municipalities that have authority to establish their own building codes or impose building standards that exceed those of provincially or territorially adopted codes may have opportunities to incent TENs adoption through restrictions on building GHG emissions. Such building regulation powers may also provide sources of authority for municipal bylaws that impose mandatory connection requirements for new developments in the areas of established TENs or impose requirements for new builds to be TEN-ready. Ultimately, any municipal government that wants to explore its options in this regard should consult legal counsel to examine the nature and scope of its legislated authority.

For many municipalities, provincial or territorial law reform will be necessary to empower TENs advancement through building regulation.

For municipalities such as those in Nova Scotia, which have not been empowered to adopt their own building codes or impose building standards that exceed those adopted by the province or territory, provincial or territorial law reform will be necessary to create opportunities for municipalities to facilitate TENs adoption through building regulation. The building regulation powers conferred on the City of Vancouver are a good model for any provincial or territorial government exploring changes of this kind.

2.4 Other Bylaw-making Powers

It is common for municipal enabling legislation across Canada to list matters about which municipal governments can make bylaws or, alternatively, to lists of spheres of authority over which municipal governments can exercise bylaw-making powers. A municipal government that wishes to implement or encourage the use of TENs in its community should work with legal counsel to review its bylaw-making authority with an eye to identifying any additional powers, not canvassed here, that could provide authority to facilitate TENs adoption.

2.5 Powers to Establish Energy Utility Systems or Provide Municipal Services

Municipal governments that aim to implement TENs themselves as municipal energy systems must identify requisite authority to do so within their enabling legislation.

In British Columbia, the *Vancouver Charter* empowers the Vancouver City Council to establish energy utility systems within the City.[17] In this context, the Act defines "energy" to mean light, heat, cold or power distributed or delivered by water, electricity, steam, natural gas or any other agent", and it defines "energy utility system" to mean "a system for the generation, storage, transmission and distribution of energy".[18] The power conferred by this section empowered the City to establish a municipal "energy utility system" through its *Energy Utility System By-Law No. 9552*,[19] which is discussed further in Part 3.0 of this policy brief.

British Columbia's *Community Charter* gives other British Columbian municipalities different powers. The Act does not empower other municipal councils to establish "energy utility systems": instead, it empowers them to "provide any service that the council considers necessary or desirable", either "directly or through another public authority or another person or organization", and it empowers them to make bylaws regulating, prohibiting, and imposing requirements in relation to municipal services.[20] The powers conferred by these sections empowered the City of Richmond and City of Surrey to establish district energy systems through *Richmond's Alexandra District Energy Utility By-law No. 8641*[21] and *Surrey's District Energy System By-law, 2012, No. 17667*,[22] respectively, both of which are discussed further in Part 3.0 of this policy brief.

Canadian municipalities that have not been empowered specifically to establish energy utility systems may nevertheless be empowered to establish and provide "municipal services", and those powers may be sufficient to enable implementation of municipal TENs. A municipal government that wishes to explore its options in this regard should consult legal counsel to determine if it has authority to establish municipal TEN services under its enabling legislation.

2.6 Powers to Grant Municipal Franchises

Across Canada, several provincial and territorial governments have empowered municipal governments to grant franchise agreements for certain services within their communities. In some cases, the applicable legislation limits municipalities to granting energy franchise agreements for natural gas or other gas services.[23] In other cases, the applicable legislation appears to be inclusive enough to accommodate TEN franchises but does not refer to TENs explicitly.[24]

Powers to grant municipal franchises to TENs could enable municipal governments to support TENs adoption even when they choose not to implement municipal TENs themselves: such agreements could assist private TEN developers in securing the customer bases that would make TENs economically feasible within the franchise areas. A municipal government that wishes to explore its options in this regard should consult legal counsel to determine the scope of its legislated authority. If the municipal government determines that it has no legislated authority to grant a municipal franchise to a TEN, it may wish to advocate for provincial or territorial law reform that would make such franchises possible.

Experience in British Columbia indicates that connecting municipal franchise agreements for TENs to municipal bylaws requiring mandatory connections to TENs creates regulatory complexities and potential problems for utilities commissions:[25] this is another consideration for municipal governments to explore with legal counsel.

3.0 Defining Thermal Energy Networks and Regulating Their Performance

Municipal governments that are contemplating policies and bylaws or regulations to enable TENs must consider how to define "thermal energy network" to best support local objectives and needs.

Broad and inclusive definitions of TENs will generally be best in provincial and territorial legislation, to empower municipalities within the province or territory to choose the TEN technologies and program designs that will best suit local needs.

Existing municipal bylaws to enable TENs in Canada have generally been designed to enable specific TEN projects within defined service areas, not to enable an unknown number of potential TENs within a municipality. Municipal policy statements expressing objectives related to TENs tend to include broader language that does not define TENs so specifically.

Provincial and territorial governments that wish to empower municipalities to implement and regulate TENs will also need to consider how to define "thermal energy network" in legislation to best support local objectives and needs. Generally, broad and inclusive definitions of TENs will be best in provincial and territorial legislation, to empower municipalities within the province or territory to choose the TEN technologies and program designs that will best suit local needs.

3.1 Recommendations for Defining "Thermal Energy Network" in Municipal Policies

As is discussed in Part 2.0 of this policy brief, municipal policy statements that express objectives related to TENs can serve important purposes of telegraphing municipal visions for clean energy—signalling to developers that municipal governments want to explore TENs options—and lay the foundations for TENs-related development control and building regulation tools in municipal bylaws or regulations.

In municipal policy documents such as municipal plans, relatively broad and inclusive definitions of TENs will typically be best, as the goal will typically not be to define a specific TEN but instead to identify TENs opportunities and objectives more generally.

In Alberta, the City of Calgary is currently proposing to incorporate a number of policies related to district energy systems in its highest-level planning document, the Calgary Plan.[26] As a starting point, the proposed Calgary Plan defines "district energy systems" and a number of related terms. The proposed Calgary Plan defines "district energy systems" to mean:

> "A system with one or more energy centres to produce thermal energy, a distribution piping system to connect energy centres to individual buildings, and energy transfer stations at each building to supply domestic hot water heating and space heating and cooling".[27]

Some municipal governments may find it preferable to define TENs using language that is as broad and inclusive of different TENs generations as possible, such as by defining TENs as "localized energy systems that deliver heating or cooling through networks of pipes that circulate steam or

water". Ultimately, TENs definitions should be suited to local objectives and needs. Working with energy experts can help municipal governments identify technical feasibility and system requirements that may need to be reflected within or accommodated by chosen definitions.

3.2 Recommendations for Defining "Thermal Energy Network" in Law

3.2.1 Considerations for Defining "Thermal Energy Network" in Municipal Bylaws or Regulations

For municipal governments that wish to implement municipal TENs within defined service areas, the bylaws or regulations that authorize TENs can tailor their definitions of "thermal energy network" to the specific components of the local programs. In British Columbia, the City of Vancouver's Energy Utility System Bylaw[28] illustrates this approach, as do similar bylaws enacted by the City of Richmond[29] and City of Surrey.[30]

The City of Vancouver's Energy Utility System Bylaw uses the term "energy utility system", and it was designed to enable a municipally owned and operated system within a single defined service area designated by the City Council. The Bylaw defines "energy utility system" through references to four other defined terms and several other provisions of the Bylaw:

> "energy utility system" means the **energy utility system referred to in section 3.1**, and consists collectively of the **community energy centre, distribution system**, and **energy transfer station** in each **designated building**, and all necessary appliances and equipment.[31] [emphasis added]

Section 3.1 of the Bylaw, incorporated into the definition cited above, states that the Vancouver City Council "authorizes the design, construction, installation, maintenance, repair, and management of an energy utility system for the generation, storage, transmission, and distribution of heat energy to supply the entire heat demand for each designated building".[32]

The Bylaw defines "community energy centre" to mean "an energy supply facility that provides heat energy in the form of hot water to designated buildings throughout the distribution system".[33] It defines "distribution system" to mean "a thermal distribution network that links the community energy centre with the energy transfer station in each designated building, and that includes separate loops for the supply and return of heat energy in the form of hot water".[34] It defines "energy transfer station" to mean "equipment owned by the city and used to meter, for billing purposes, the amount of energy consumed in a designated building, and to transfer heat energy from the distribution system to the building mechanical system in a designated building, and includes pipes for the supply and return of hot water, valves, controls, meters, and separate heat exchangers for domestic hot water and space heating".[35]

Within the Bylaw, "designated building" is defined to mean "a building to which this By-law applies by virtue of section 2.1 or 2.2".[36] Section 2.1 of the Bylaw establishes that the bylaw applies to two categories of buildings within the bylaw's defined service area:

> (a) a new building proposed for construction or under construction for which the Building By-law requires submission of a building permit application and issuance of an occupancy permit to which the owner, as at the date of enactment of this By-law, is not yet entitled; or

(b) an existing building where the estimated value of proposed alterations or alterations under construction which require submission under the Building By-law of a building permit application is more than the greater of $95,000 or 100% of the building's latest assessed value according to the records of the British Columbia Assessment Authority[.][37]

Section 2.2 of the Bylaw refers to buildings that have been brought under its purview through voluntary applications by the building owners and approvals issued by the City Engineer.[38]

The similar district energy system bylaws enacted by the City of Richmond and City of Surrey take similar approaches, with the City of Surrey bylaw incorporating two service areas within its definition of "district energy system".[39]

As these British Columbian examples illustrate, **municipal bylaws that are designed to enable specific TENs within defined service areas can craft specific and nuanced definitions of "thermal energy network" that incorporate many key parameters of the local program design.** Those key parameters can include: where the program will operate (i.e., the defined service area or service areas for the program); which classes of buildings, if any, will be required to connect to the TEN and which classes of building, if any, may apply to connect voluntarily; and, crucially, what specific thermal energy services will be provided by the program (i.e., heating services alone, or cooling services as well as heating). This approach is generally recommended by this policy brief, particularly for municipal TENs initiatives.

A municipal government that wishes to follow these examples will need to understand the technical capacity and technical requirements of the TEN it wishes to enable, so that its definition of "thermal energy network" can be tailored appropriately. When consulting the experts who will provide the necessary energy system expertise, a municipal government should consider the program parameters described above and should also consider whether it wishes to include any additional requirements for the program, such as by specifying the energy sources that can be used to generate thermal energy for the purposes of the program.

In the United States, several state legislatures that have acted to enable TENs through state legislation have imposed definitions that restrict the use of fossil fuel energy sources.[40] Depending on the requirements of applicable provincial or territorial laws, municipal governments in Canada could follow such examples to restrict the use of fossil fuels in TENs. It should be noted, however, that restricting fossil fuel usage through TENs definitions or requiring TENs systems to decarbonized at the outset may limit the feasibility of local TEN programs, and technical feasibility may require a scaled approach to TENs decarbonization. Ultimately, each municipal government wishing to implement or encourage TENs adoption will need to understand its local circumstances and what will be technically feasible. Energy experts should also be consulted for advice on the implementation and decarbonization approaches that have proved most successful elsewhere.

Appendix B of this policy brief suggests some core components of a municipal TENs definition, based on the British Columbian examples discussed above, as useful prototypes for municipal government consideration.

3.2.2 Considerations for Defining "Thermal Energy Network" in Provincial Legislation

For provincial governments that wish to enable municipal governance of TENs or make existing municipal powers more explicit, a broad definition of "thermal energy network" will generally be preferable to definitions as nuanced as those in the British Columbian examples provided above. Ideally, a provincial definition should empower municipalities within the province to choose the TEN technologies and program designs that will best suit local needs.

In Nova Scotia, the *Halifax Regional Municipality Charter* defines "district energy system" to mean "a system designed to supply heating or cooling by continuously circulating, to more than one building, through a system of interconnected pipes, steam or water that is heated or cooled using thermal energy recovered from wastewater".[41] This definition was designed to inform other provisions of the Charter that pertain specifically to the establishment and operation of a district energy system called the Cogswell District Energy System. If the Halifax Regional Municipality wished to establish a district energy system in another area of the municipality, the definition of "district energy system" within the Charter would limit the Municipality to thermal energy recovered from wastewater as the only permissible system energy source.

Any provincial or territorial government that wants to empower municipal governments to implement or encourage the use of TENs in their communities should consult with local municipalities, energy experts, and legal advisors to ensure that the definition it chooses will meet local needs.

The Halifax example illustrates a type of restriction that provincial governments should avoid if they wish to empower municipalities within their provinces to choose the TEN technologies and program designs that will best suit local needs. Provincial legislatures should be cautious about limiting municipal governments to enabling specific generations of TENs or TENs that use renewable energy sources alone, as local circumstances and technical feasibility will differ from municipality to municipality.
The Building Decarbonization Coalition in the United States of America ("U.S.") has suggested the following language for a broad and inclusive definition of TENs, based on definitions that have been adopted by several state legislatures:

> *Thermal energy network refers to all real estate, fixtures, and personal property that are operated, owned, used, or intended to be used for, in connection with, or to facilitate a distribution infrastructure project that supplies non greenhouse gas-emitting energy to two or more dwelling units or buildings that are not commonly owned, for the purposes of space heating and cooling, domestic hot water and refrigeration, through an underground piping system, including or not geothermal boreholes, transporting non-combustible fluids.*[42]

Notably, this definition draws from TENs definitions that restrict the use of fossil fuel energy sources, and it refers to infrastructure projects that supply "non greenhouse gas-emitting energy". As is noted above, restricting fossil fuel usage through TENs definitions or requiring decarbonized, non-GHG-emitting systems from the outset could potentially inhibit the feasibility of local TEN programs. This policy brief therefore recommends a modified version of this proposed definition, omitting the reference to "non greenhouse gas-emitting energy" and drawing on language from Canadian examples discussed above:

> "Thermal energy network" means all real estate, fixtures, and personal property owned, operated, used, or intended to be used for or in connection with the delivery of heating or cooling, or heating and cooling, to two or more buildings that are not commonly owned through a system of fluid pipes, fittings, ancillary components, and one or more sources of thermal energy supply.

This suggested definition would not restrict fossil fuel usage through TENs definitions or require decarbonized, non-GHG-emitting systems at the outset, but it would easily accommodate decarbonized, non-GHG-emitting TENs. The definition would allow but not require TENs that provide both heating and cooling, and it would also accommodate TENs with single centralized energy supply facilities as well as TENs with multiple, decentralized energy supply facilities.

Ultimately, any provincial or territorial government that wants to empower municipal governments to implement or encourage the use of TENs in their communities should consult with local municipalities, energy experts, and legal advisors to ensure that the definition it chooses will meet local needs.

3.3 Recommendations for Regulating Thermal Energy Network Performance through Objectives and Standards

If it will not be feasible for a municipal government to require TENs to be fully decarbonized and non-GHG-emitting at the outset, the municipality will likely wish to consider what tools it could use to phase out the use of fossil fuel energy sources over time.[43]

Municipal governments that have the power to adopt and implement their own building codes or to impose building standards that exceed provincially and territorially adopted standards may be able to use Green Development Standards and Building Emissions Performance Standards to phase out the use of fossil fuel energy sources in local TENs over time.

Green Development Standards are used to set standards for new developments, and potentially also for existing buildings if proposed alterations trigger the need for new building permits. If a municipal government has powers such as those held by the City of Vancouver—which is empowered to establish its own building code and to regulate building construction "where the reduction of greenhouse gas emissions is concerned"[44]—then it will have a good basis for exploring Green Development Standards that could require TENs to phase out the use of fossil fuels over time.

Building Emissions Performance Standards are used to impose standards on existing buildings, requiring lower GHG emissions progressively over time. Requiring existing buildings to meet new standards to comply with progressive building codes is a more complex endeavour than regulating new developments and significant renovations. A municipal government that wishes to explore its options in this regard should work with legal counsel to determine what is possible.

4.0 Establishing Supportive Connection Requirements and Opportunities

Municipal governments that aim to implement or encourage the use of TENs should consider what connection requirements and opportunities will best support TENs' success.

In some cases, mandatory connection requirements may be necessary to establish customer bases that are large enough to make TENs economically feasible. This will likely be the case when municipal governments are establishing TENs themselves as municipal energy utilities or municipal services. Municipal governments that are empowered to establish and operate their own TENs as municipal energy utilities or municipal services may have corresponding authority to control when and how new developments will connect to their systems. If this power is not granted expressly by municipal enabling legislation, arguments could be made for it being necessarily incidental to the powers that are conferred to establish municipal energy utilities or provide municipal services, as the case may be.

When TENs are established by private developers instead of by municipal governments, it is possible that municipal governments may not be able to impose mandatory connection requirements. Municipal enabling legislation typically does not confer municipal powers to control private utilities or require buildings to connect to private utility systems: utility regulation in this sense is typically governed by provincial legislation and overseen by provincially or territorially established utilities commissions or energy boards.

4.1 Mandatory and Permissive Municipal Connection Policies

Municipal TENs bylaws established by the City of Vancouver, City of Richmond, and City of Surrey in British Columbia offer useful examples of both mandatory and permissive municipal connection policies.

The City of Vancouver's Energy Utility System By-law imposes mandatory connection requirements for new building within the designated service area of the energy utility system, and it also requires mandatory connections for existing buildings that are undergoing or are proposed to undergo alterations that meet a prescribed threshold:

> 2.1 Each owner in the service area of:
>
> (a) a new building proposed for construction or under construction for which the Building By-law requires submission of a building permit application and issuance of an occupancy permit to which the owner, as at the date of enactment of this By-law, is not yet entitled; or
>
> (b) an existing building where the estimated value of proposed alterations or alterations under construction which require submission under the Building By-law of a building permit application is more than the greater of $95,000 or 100% of the building's latest assessed value according to the records of the British Columbia Assessment Authority;
>
> must make use of the energy utility system in accordance with the terms and conditions of this By-law, unless the City Engineer is of the opinion that providing the service to a building is not practical or economical.[45]

The bylaw also includes a permissive connection pathway for buildings outside the designated service area of the energy utility system:

> 2.2 An owner outside the boundaries, but in the vicinity, of the service area may apply to the City Engineer to make use of the energy utility system, and if:
>
> (a) the City Engineer is of the opinion that the energy utility system is capable of servicing the building that is the subject of the application;
>
> (b) the City Engineer is of the opinion that servicing the building is necessary or desirable; and
>
> (c) the owner enters into an agreement with the city, in form and substance satisfactory to the City Engineer and Director of Legal Services, promising to make a cash contribution to the capital cost of extending the system outside the boundaries to the owner's property in an amount and at a time determined by the City Engineer;

the City Engineer may approve the application, in which case the owner must make use of the energy utility system in accordance with the terms and conditions of this By-law.[46]

The City of Richmond's Alexandra District Energy Utility Bylaw law imposes connection requirements that are similar to, but not exactly the same as, those in Vancouver's Energy Utility System By-law. Unlike the Vancouver Bylaw, the Richmond Bylaw does not impose mandatory connection requirements for existing buildings that are undergoing or are proposed to undergo alterations that meet a prescribed threshold.[47] The Richmond Bylaw also provides more complex requirements for buildings to be exempted from the mandatory connection requirements.[48] Permissive connection is enabled under certain circumstances for buildings that are outside the designated service area of the Richmond district energy utility but still within the city.[49]

The City of Surrey's District Energy System By-law also imposes connection requirements that are similar to, but not exactly the same as, those in Vancouver's Energy Utility System By-law.[50] One notable difference is that the Surrey Bylaw establishes two service areas for Surrey's district energy system: in Service Area A, connections are mandatory for new buildings and existing buildings that are undergoing or are proposed to undergo alterations that meet a prescribed threshold; in Service Area B, new and existing buildings that are undergoing or are proposed to undergo alterations meeting prescribed threshold are required to "utilize hydronic systems that are compatible with the district energy system for all space heating and hot water heating" (i.e., such buildings are effectively required to be TEN-connection-ready).[51] Permissive connection is also enabled under certain circumstances for buildings that are outside the designated service areas of the Surrey district energy system but still within the city.[52]

A municipal government that aims to establish its own TEN as a municipal energy utility or municipal service should consider if mandatory connection requirements will be necessary to make the TEN economically feasible: if so, the mandatory connection requirements illustrated in the British Columbian examples discussed above will offer useful templates for municipal bylaw language. Municipal governments that wish to enable permissive TENs connections for buildings outside the primary service areas of municipal TENs can also look to the British Columbian examples for model language. In all cases, municipal governments will need to consult with the energy experts who are supporting TENs establishment to determine which connection requirements and opportunities will best support their TENs' success.

5.0 Enabling and Implementing Clean Heat Planning

Municipal land-use planning powers may give municipal governments opportunities to engage in clean heat planning. Provincial and territorial governments also have a role to play in advancing clean heat planning across Canada, because they hold the authority to require and more clearly empower municipal governments to include clean heat planning in their land-use policies and bylaws or regulations.

Municipal clean heat planning to advance TENs adoption can take several forms. As practical starting points, it will often include gathering information about municipal energy use and energy needs, identifying areas within the municipality that are dense enough to make TENs feasible, and identifying energy-intensive infrastructure such as data centres, supermarkets, sewers, or wastewater treatment plants that could supply waste heat to power TENs. [53] Gathering information, conducting feasibility studies, and engaging in conversations to explore opportunities are activities that should be within the power of all municipal governments across Canada.

Municipal plans can support early, practical steps of this kind by expressing municipal government intentions to gather information and explore options. As is noted above in Part 2.0 of this policy brief, the City of Brampton's Heritage Heights Secondary Plan includes the sustainability and climate objective of facilitating "efficient energy generation and distribution systems, where appropriate, including district energy, within medium and high density-rise development".[54] The Plan also recognizes the role that district energy systems can play in decarbonization, and it states that the City "will work with appropriate partners to develop a Thermal Energy Utility that will facilitate the establishment of district energy systems".[55]

In Alberta, the City of Calgary is currently proposing to incorporate a number of policies related to district energy systems in its highest-level planning document, the Calgary Plan. As a starting point, the proposed Calgary Plan defines "district energy systems" and a number of related terms. Within the proposed Plan, a "district energy system" is defined to mean: "A system with one or more energy centres to produce thermal energy, a distribution piping system to connect energy centres to individual buildings, and energy transfer stations at each building to supply domestic hot water heating and space heating and cooling".[56] The proposed Plan also defines "district energy opportunity areas", which are: "Neighbourhoods identified by The City as priority for the development of district energy systems based on anticipated density, presence and potential of low-carbon energy sources, presence of existing City-owned buildings and land, high existing building heating energy use and anticipated timing of future development".[57] The proposed Plan also defines "district energy service area", which is: "The defined area around a district energy system where a feasibility study has demonstrated economic viability and potential for greenhouse gas reductions associated with connection to the system".[58]

One of the notable aspects of these definitions is that they refer implicitly to the work the City is doing, or intends to do, behind the scenes to prepare to implement district energy systems. These proposed statements are telegraphing the City's intention to identify areas within the City that should be prioritized for district energy system development, along with the City's intention to conduct feasibility studies to support identification of appropriate system service areas.
In British Columbia, the City of Surrey's Official Community Plan includes several policy statements related to district energy, including:

B1.19 Continue to expand the City's District Energy system to service all new development in City Centre in an effort to improve housing quality, provide energy resiliency and reduce greenhouse gas emissions.[59]

B1.20 Work with private property owners to connect existing City Centre development to the City's District Energy system to reduce greenhouse gas emissions and provide existing developments with energy resiliency.[60]

B1.21 Require new development in Surrey's City Centre to be compatible with and able to connect to the Surrey District Energy system, as set out in the *City of Surrey District Energy System By-law* (as amended).[61]

C1.29 Advance the implementation of District Energy Systems (see Figure 26a) to provide thermal energy to new and existing buildings to improve community energy resilience, facilitate the use of renewable energy sources and reduce greenhouse gas (GHG) emissions.[62]

C1.30 Focus the initial development of District Energy systems to Surrey's City Centre. Consider the feasibility of using District Energy systems along high-density corridors and in Surrey's Town Centres.[63]

Other language in the Plan, outside formal policy statements, also reflects the City's desire to support district energy systems.[64]

Some of the above-noted statements in the City of Surrey's Official Community Plan refer implicitly to development control and building regulation powers that some Canadian municipalities do not enjoy. For example, the statement that the City will require new developments within the City Centre to be compatible with and able to connect to the Surrey district energy system is an intention that depends on power to regulate building systems. Municipal governments that are authorized to establish TENs as municipal energy utilities or municipal services may be able to argue that the power to require connection-ready buildings is necessarily incidental to the power to establish and operate such TENs; however, it might also be argued that a municipal government without the power to implement its own building codes or impose building standards exceeding those of provincially or territorially adopted codes is not empowered to regulate building systems to require TEN-connection-readiness.

Ultimately, any municipal government that wishes to use land-use planning policy statements as foundations for development control and building regulation will need to ensure that its enabling legislation provides the requisite authority to control developments and regulate buildings in manner envisioned.

6.0 Conclusion

This policy brief makes several recommendations for municipal governments that aim to implement or encourage the use of TENs to advance climate change mitigation through building decarbonization. In pursuing this objective, municipalities can also unlock broader benefits, including lower heating and cooling costs, improved energy resilience, and local economic development opportunities.

Concerning municipal government authority to implement or encourage the use of TENs, this policy brief recommends working with legal counsel to assess the nature and scope of municipal powers, focusing on the following areas: "general welfare", land-use planning and development control, building regulation, energy utility systems, municipal service delivery, and franchise agreements.

Municipal authority to regulate buildings is a potentially crucial source of authority to support TENs adoption; however, municipal building regulation powers vary across Canada, giving some municipalities more power than others to require GHG emissions reductions, encourage TENs adoption, and mitigate climate change through building regulation. Provincial and territorial governments that wish to empower municipalities to take action on these fronts can look to the City of Vancouver's building regulation powers as a model for law reform.

Municipal governments that wish to implement or encourage the use of TENs, and that have identified requisite sources of authority to do so, must consider how to define "thermal energy network" to best support local objectives and needs. Existing municipal bylaws to enable TENs in Canada have generally been designed to enable specific TEN projects within defined service areas. This approach is generally recommended by this policy brief, particularly for municipal TENs initiatives, because it enables municipal governments to establish nuanced parameters for TENs projects. Municipal policy statements expressing objectives related to TENs may use broader language that could accommodate multiple TENs initiatives.

Provincial and territorial governments that wish to empower municipalities to implement and regulate TENs will also need to consider how to define "thermal energy network" in legislation to best support local objectives and needs. Generally, broad and inclusive definitions of TENs will be best in provincial and territorial legislation, to empower municipalities within the province or territory to choose the TEN technologies and program designs that will best suit local needs.

Municipal governments that wish to implement or encourage the use of TENs will also need to assess whether they have the authority to implement mandatory or permissive connection requirements and determine which option will be most appropriate. In some cases, mandatory connection requirements may be necessary to establish customer bases that are large enough to make TENs economically feasible. Municipal governments that are empowered to establish and operate their own TENs as municipal energy utilities or municipal services may have corresponding authority to control when and how new developments will connect to their systems. When TENs are established by private developers, it is possible that municipal governments may not be able to impose mandatory connection requirements.

A municipal government that aims to establish its own TEN as a municipal energy utility or municipal service should consider if mandatory connection requirements will be necessary to make the TEN economically feasible: if so, the mandatory connection requirements illustrated in the British Columbian examples discussed in this policy brief will offer useful templates for municipal bylaw language. Municipal governments that wish to enable permissive TENs connections for buildings outside the primary service areas of municipal TENs can also look to the British Columbian examples for model language. In all cases, municipal governments will need to consult with the energy experts who are supporting TENs establishment to determine which connection requirements and opportunities will best support their TENs' success.

Municipal governments that wish to implement or encourage the use of TENs may also conduct clean heat planning to support TENs adoption. Municipal clean heat planning to advance TENs adoption can take several forms. As practical starting points, it will often include gathering information about municipal energy use and energy needs, identifying areas within the municipality that are dense enough to make TENs feasible, and identifying energy-intensive infrastructure such as data centres, supermarkets, sewers, or wastewater treatment plants that could supply waste heat to power TENs. Gathering information, conducting feasibility studies, and engaging in conversations to explore opportunities are activities that should be within the power of all municipal governments across Canada.

Appendix A: Prototype Language for a Municipal Definition of "Thermal Energy Network"

As is discussed in Part 3.0 of this policy brief, for municipal governments that wish to implement municipal TENs within defined service areas, the bylaws or regulations that authorize TENs can tailor their definitions of "thermal energy network" to the specific components of the local systems. In British Columbia, the City of Vancouver's Energy Utility System Bylaw takes this approach, as do similar bylaws enacted by the City of Richmond and City of Surrey.

This appendix suggests prototype language for defining a municipal TEN within a bylaw or regulation, based on the British Columbian examples discussed in this policy brief.

"**thermal energy network**" means the [energy utility system / municipal service] referred to in section […] and consists collectively of the community energy centre or community energy centres, distribution system, energy transfer stations in each designated building, and all necessary appliances and equipment;

"**community energy centre**" means an energy supply facility that provides thermal energy in the form of hot or cool water to designated buildings throughout the distribution system;

"**distribution system**" means a thermal distribution network that links the community energy centre or community energy centres with the energy transfer station in each designated building and that includes separate loops for the supply and return of thermal energy in the form of hot or cool water;

"**energy transfer station**" means equipment owned by the [City / Town / etc.] and used to meter, for billing purposes, the amount of energy consumed in a designated building and to transfer thermal energy from the distribution system to the building mechanical system in a designated building and includes pipes for the supply and return of hot or cool water, valves, controls, meters, and separate heat exchangers for domestic hot water and space heating";

"**designated building**" means a building to which this [Bylaw / Regulation] applies by virtue of section […];

As in the Vancouver, Richmond, and Surrey bylaws discussed in this policy brief, the connection between the definition of "designated building" and the sections of the municipal bylaw or regulation that identify service areas and impose mandatory and/or permissive connection requirements within those service areas is the means by which the bylaw or regulation's definition of "thermal energy network" would be tailored specifically to the system that the municipal government wishes to establish in defined areas of the community.

Endnotes

1 Henrik Lund *et al*, "Perspectives on fourth and fifth generation district heating" *Energy* 227 (15 July 2021).

2 A white paper on TENs published by the Building Decarbonization Alliance offers a useful introduction to TENs generations for readers who want to learn more: see Building Decarbonization Alliance, *Thermal Energy Networks in Canada: Unlocking Impact Potential and Advancing Enabling Policy* (25 September 2025).

3 *114957 Canada Ltée (Spraytech, Société d'arrosage) v Hudson (Town)*, 2001 SCC 40 (CanLII) ["*Spraytech*"].

4 See *ibid* at paragraph 9.

5 *Towns and Local Service Districts Act*, SNL 2023, c T-6.2 at clause 8(1)(a).

6 *Municipal Government Act*, RSA 2000, c M-26 at subsection 7(a) ["*Municipal Government Act*"].

7 See *Spraytech* (full citation above at endnote 3) at paragraphs 36-38.

8 See *ibid* at paragraph 35; see also *Croplife Canada v Toronto (City)*, 2005 CanLII 17709 (ONCA) at paragraphs 60-62 ["*Croplife*"]. While the Ontario Court of Appeal in *Croplife* held that the frustration of purpose test applies to alleged conflicts between municipal laws and provincial or federal laws in the same way that the test applies to alleged conflicts between provincial and federal laws, the same finding has not yet been made expressly by the courts of all other provinces and territories in Canada or by the Supreme Court of Canada. This policy brief reflects the view that other Canadian courts will likely endorse this conclusion.

9 *Municipal Government Act*, SNS 1998, c 18 at subsection 214(1).

10 *Minimum Planning Requirements Regulations*, NS Reg 140/20219 at section 6.

11 *Ibid* at section 9.

12 City of Brampton, *Heritage Heights Secondary Plan* (unofficial office consolidation) (March 2022) at clause 4.2(c) ["Brampton Heritage Heights Secondary Plan"].

13 *Ibid* at sections 4.4.1 and 4.4.2.

14 *Building Act*, SBC 2015, c 2 at section 2.

15 *Vancouver Charter*, SBC 1953, c 55 at subclause 306(1)(a)(vi) ["*Vancouver Charter*"].

16 *Building Code Act*, RSNS 1989, c 46.

17 *Vancouver Charter* (full citation above at endnote 15) at section 300.1.

18 *Ibid* at subsection 300.1(1).

19 City of Vancouver, Energy Utility System By-law No. 9552 (unofficial consolidation) (10 December 2024) ["Vancouver EUS Bylaw"].

20 *Community Charter*, SBC 2003, 6: c26 at subsection 8(2) and clause 8(3)(a) ["*Community Charter*"].

21 City of Richmond, Alexandra District Energy Utility Bylaw No. 8641 (unofficial consolidation) (25 November 2019) ["City of Richmond DES Bylaw"].

22 City of Surrey, District Energy System By-law, 2012, No. 17667 (unofficial consolidation) (13 February 2023) ["City of Surrey DES Bylaw"].

23 See for example Alberta's *Gas Distribution Act*, RSA 2000, c G-3, *Gas Utilities Act*, RSA 2000, c G-5 and *Municipal Government Act* (full citation above at note 5), which recognize municipal franchises for natural gas services, and Ontario's *Municipal Franchises Act*, RSO 1990, c M.55, which deals with municipal franchises for natural gas and other gas services and does not appear to enable municipal franchises for thermal energy networks.

24 See for example the Northwest Territories' *Public Utilities Act*, RSNWT 1988, c 24, where the definitions of "energy" and "public utility" would appear to accommodate TENs serving as public utilities, and which contemplates municipal corporations granting franchises to public utilities: see for example section 1 and subsection 38(1). See also subsection 22(1) of British Columbia's *Community Charter* (full citation above at endnote 20), which contemplates municipal councils entering into franchise agreements for "energy supply systems".

25 See *Creative Energy Vancouver Platforms Inc Application for Approval of the Restated and Amended Northeast False Creek and Chinatown Neighbourhood Energy Agreement*, 2016 BPUC G-88-16.

26 See City of Calgary, "The Calgary Plan: Final Draft" (4 December 2024), available for download at City of Calgary, "The Calgary Plan: Guiding how the city will grow and change over the next 30 years" (undated) ["The Calgary Plan"].

27 *Ibid* at page 85.

28 Vancouver EUS Bylaw (full citation above at endnote 19).

29 City of Richmond DES Bylaw (full citation above at endnote 21).

30 City of Surrey DES Bylaw (full citation above at endnote 22).

31 Vancouver EUS Bylaw (full citation above at endnote 19) at section 1.2.

32 *Ibid* at section 3.1.

33 *Ibid* at section 1.2.

34 *Ibid*.

35 *Ibid*.

36 *Ibid*.

37 *Ibid* at section 2.1.

38 *Ibid* at section 2.2. The bylaw allows these buildings to be outside the defined service area, but they must be in the vicinity of the service area.

39 City of Surrey DES Bylaw (full citation above at endnote 22) at section 1.2. For an Albertan example taking a similar approach, see City of Edmonton, Bylaw 17943: Blatchford Renewable Energy Utility Bylaw (1 January 2024).

40 Building Decarbonization Coalition and Vermont Institute for Energy and the Environment, *Thermal Energy Networks (TENs) Legislative Guidebook* (20 March 2025) at pages 6-8 ["Thermal Energy Networks Legislative Guidebook USA"].

41 *Halifax Regional Municipality Charter*, SNS 2008, c 39 at subsection 3(va).

42 Thermal Energy Networks Legislative Guidebook USA (full citation above at endnote 40) at page 7.

43 The City of Montréal's bylaw banning combustion heating systems in new buildings was designed not to apply to buildings connect to TENs, which suggests that TENs may be seen as stepping stone systems on the path towards full decarbonization of building heating and cooling systems, even if TENs are not yet fully decarbonized themselves: see City of Montréal, "Ban on combustion heating devices in new buildings" (16 September 2025).

44 *Vancouver Charter* (full citation above at endnote 15) at subclause 306(1)(a)(vi).

45 Vancouver EUS Bylaw (full citation above at endnote 19) at section 2.1.

46 *Ibid* at section 2.2.

47 See City of Richmond DES Bylaw (full citation above at endnote 21) at sections 3.1 and 3.3.

48 See *ibid* at section 3.3.

49 *Ibid* at section 3.2.

50 See City of Surrey DES Bylaw (full citation above at endnote 22) at sections 2.1-2.3.

51 See *ibid* at section 2.2.

52 *Ibid* at section 2.4.

53 For further examples, see Clean Air Council and Clean Air Partnership, "Briefing Note: District Energy Systems" (August 2025) at page 2.

54 Brampton Heritage Heights Secondary Plan (full citation above at endnote 12) at clause 4.2(c).

55 *Ibid* at section 4.4.2.

56 The Calgary Plan (full citation above at endnote 26) at page 85.

57 *Ibid*.

58 *Ibid*.

59 City of Surrey "Plan Surrey 2013: Official Community Plan" (20 October 2014) at page 117.

60 *Ibid*.

61 *Ibid*.

62 *Ibid* at page 153.

63 *Ibid*.

64 *Ibid* at page 147.