

Planning for a low-carbon and resilient Downtown

To address the “energy crunch” faced in the Downtown due to growth, the City is preparing an energy strategy under TOcore aimed at:

- addressing growth in electrical demand
- improving resilience to power outages
- reducing greenhouse gas (GHG) emissions

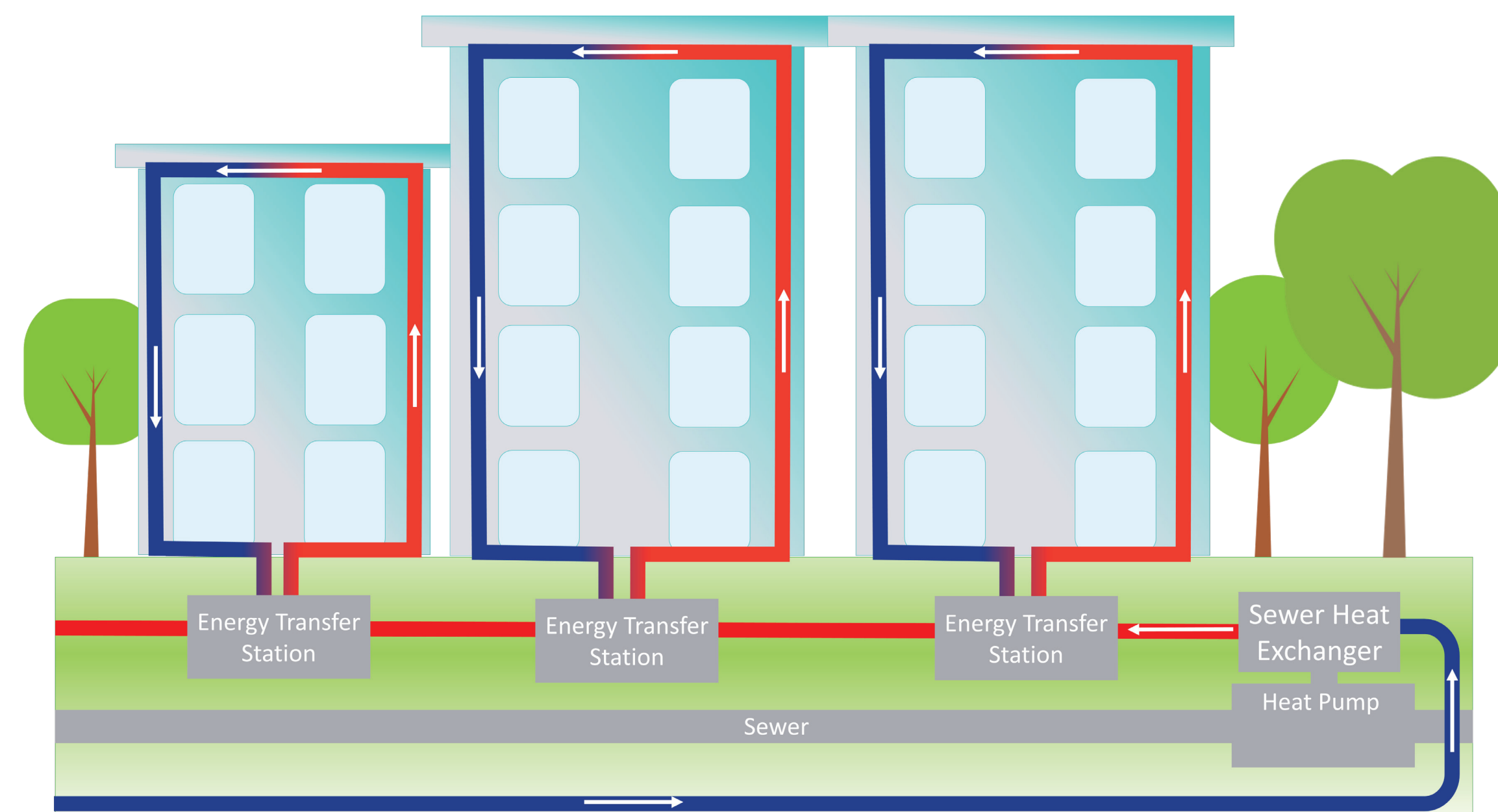
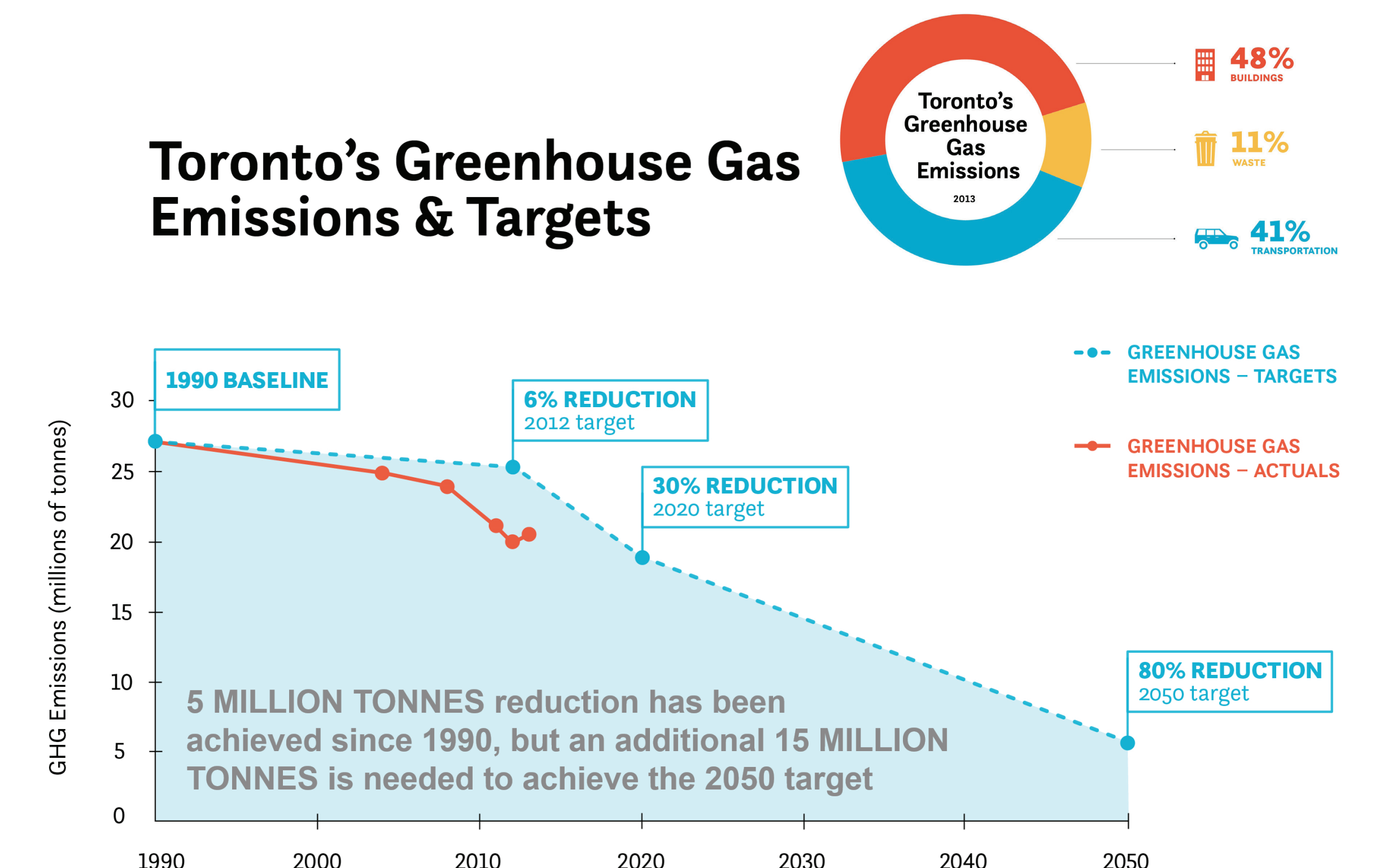
1. COMMITTING TO A LOW-CARBON FUTURE

Accessing local sources of low-carbon energy in the Downtown is fundamental to alleviating electricity constraints and reducing the use of fossil fuels.

EMERGING DIRECTIONS:

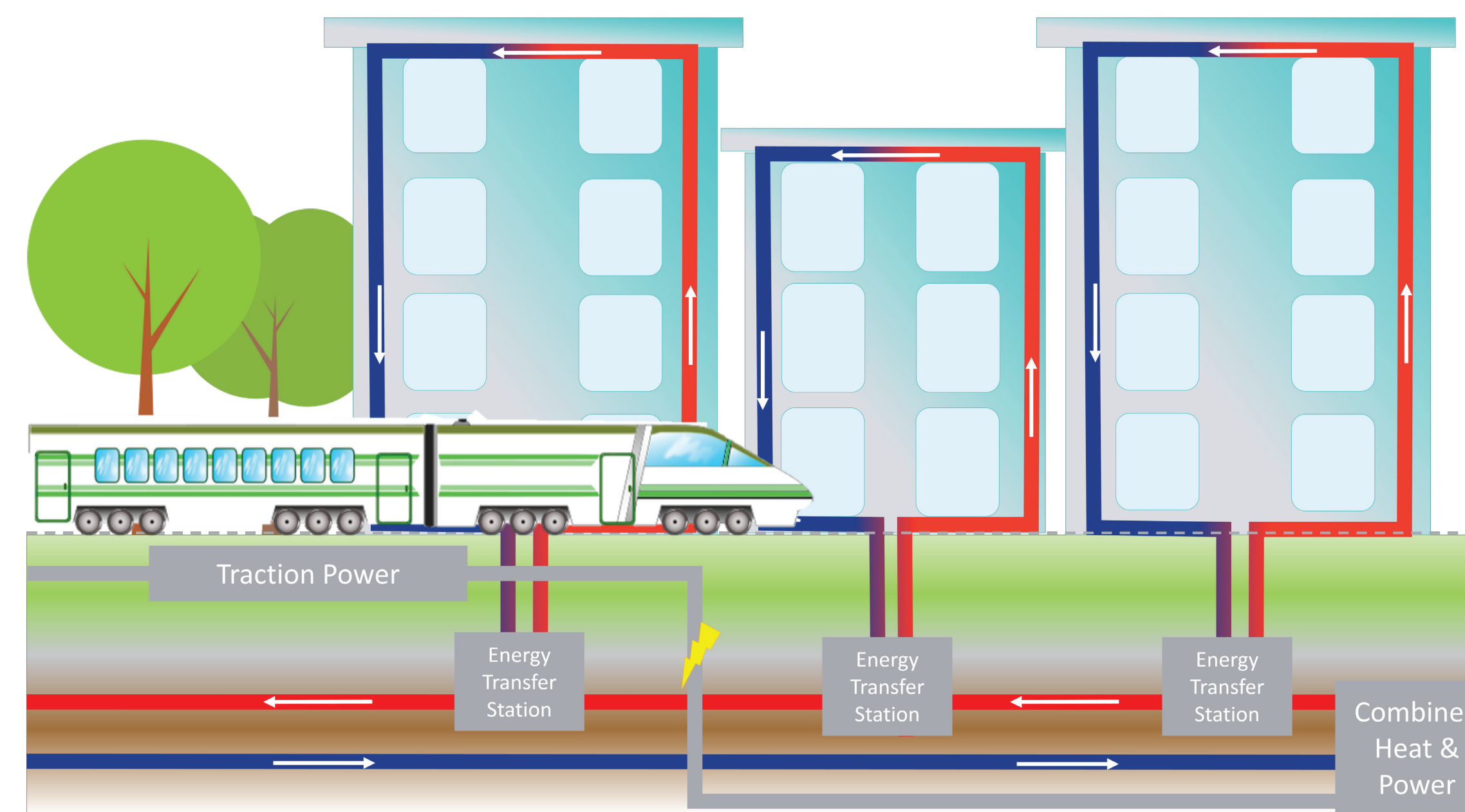
- Co-locate low-carbon energy sources with municipal infrastructure (sewers, water) and other local infrastructure (transit)
- Accelerate new thermal energy networks and expand existing networks (i.e. University of Toronto, Enwave, Regent Park)
- Target net-zero energy use from local low carbon sources for large developments

Toronto's Greenhouse Gas Emissions & Targets



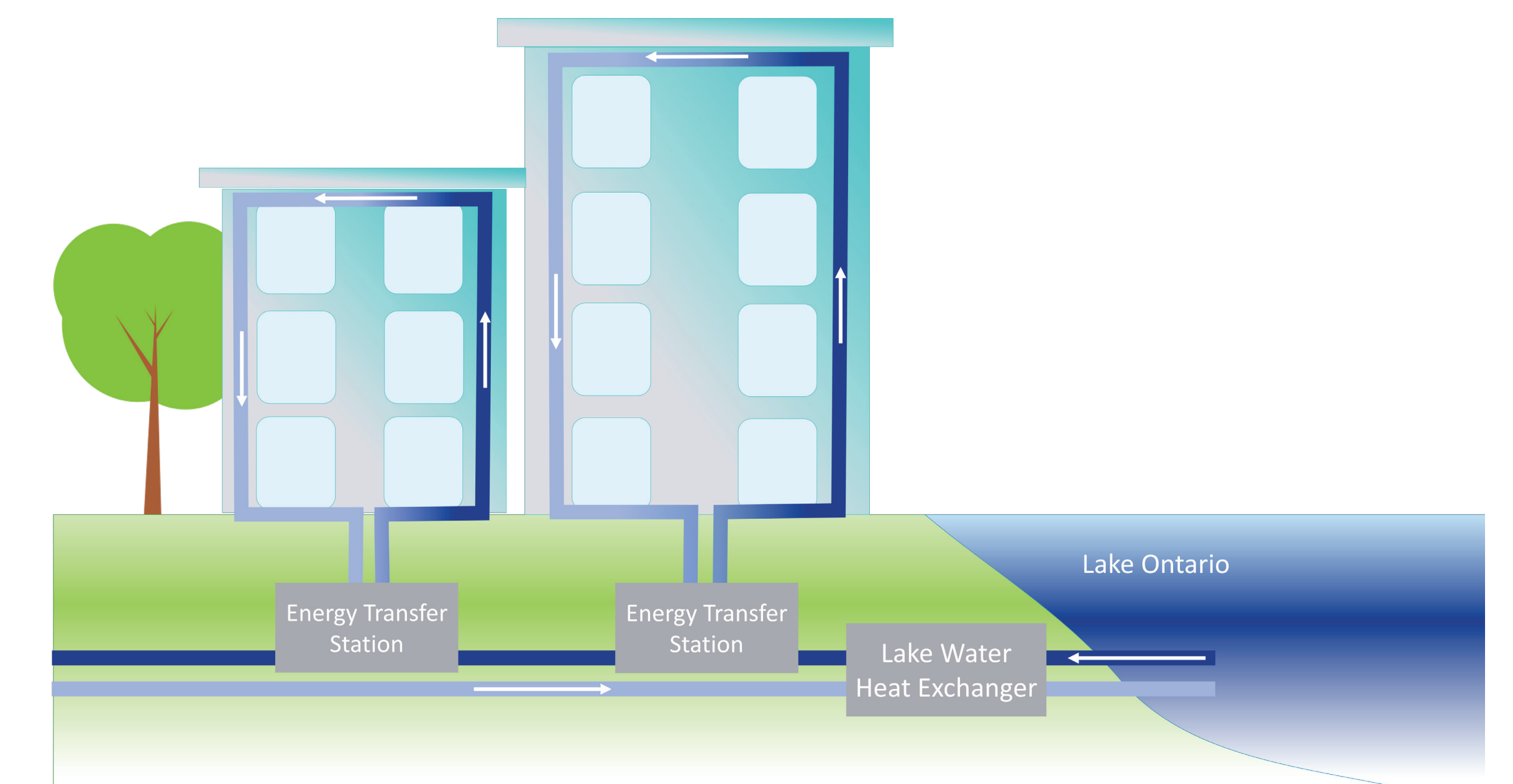
SEWER HEAT RECOVERY

Heat can be recovered from sewer lines to warm buildings, significantly reducing natural gas consumption and GHG emissions.



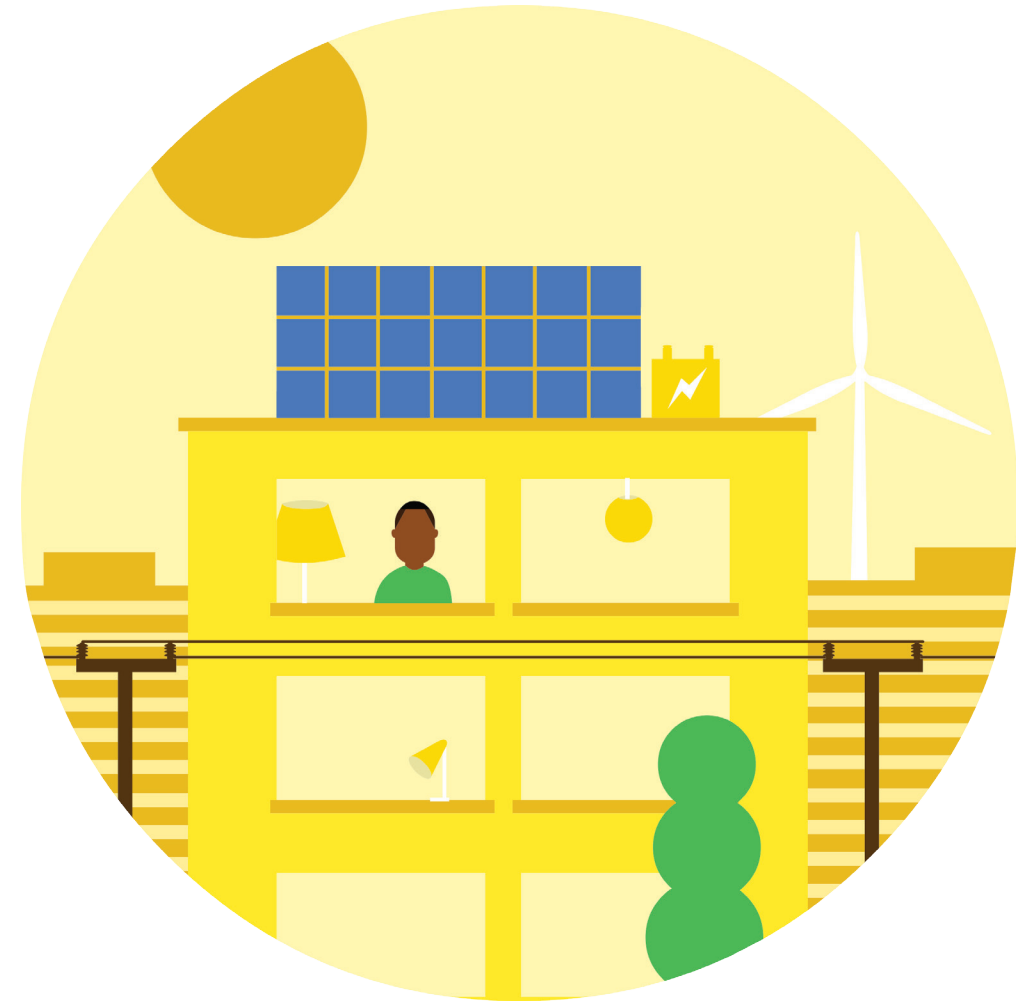
CHP + ELECTRIC TRANSIT

Combined heat and power (CHP) systems can simultaneously help power new transit lines and heat buildings.



DEEP LAKE WATER COOLING

There is an opportunity to significantly expand the number of buildings being cooled with lake water via thermal networks/district energy.

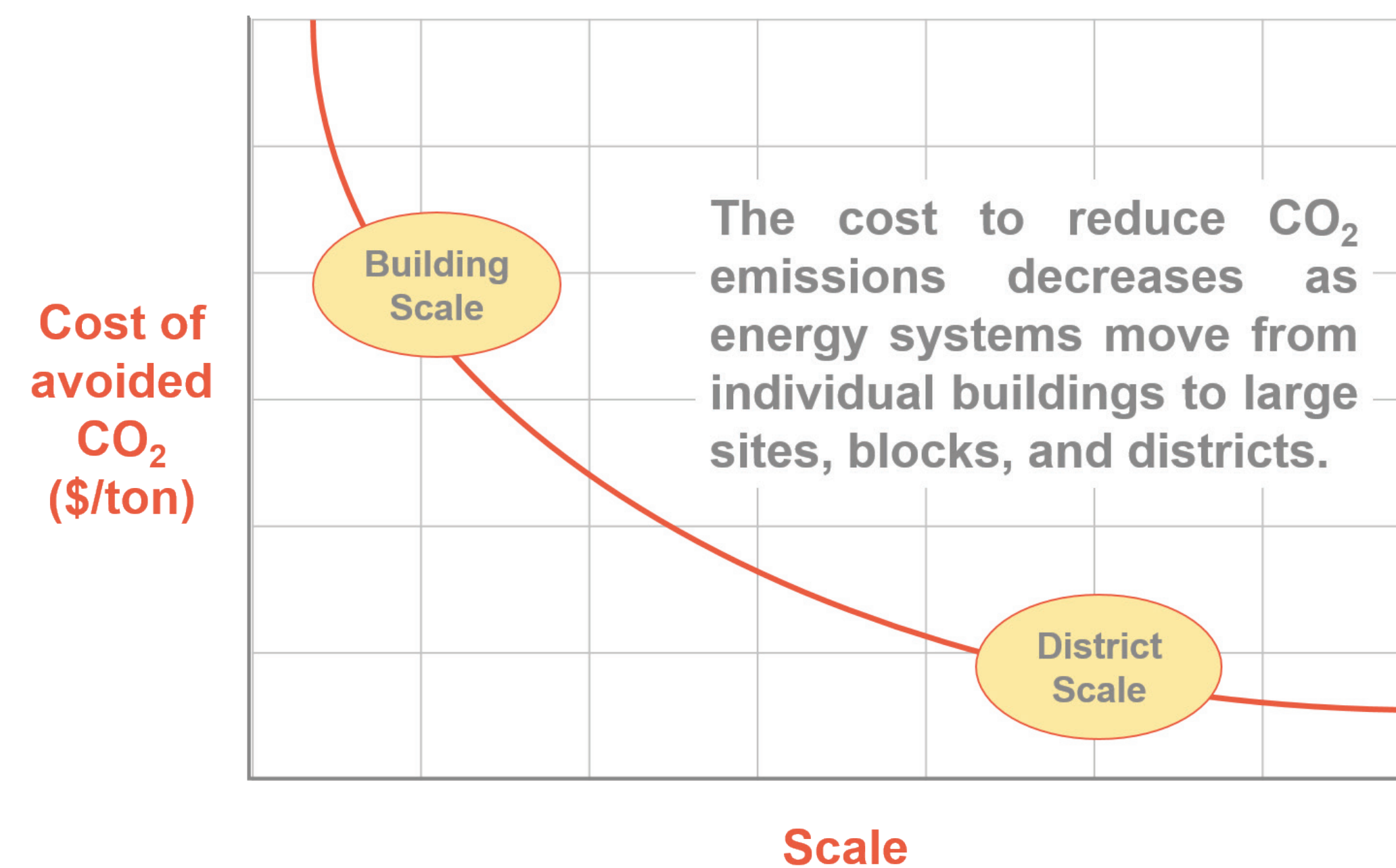


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2. CREATING NEW THERMAL ENERGY NETWORKS

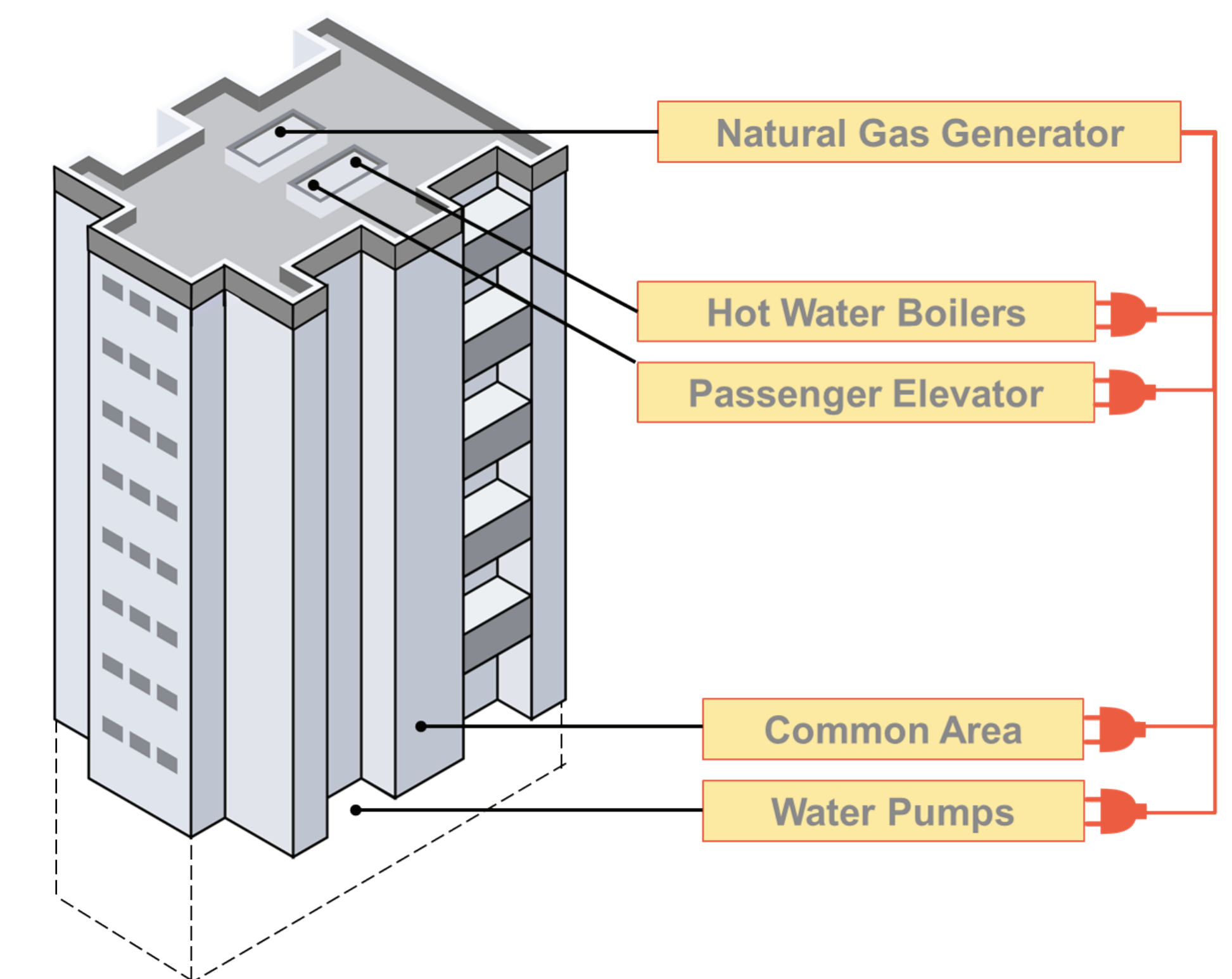
Thermal energy networks connect multiple buildings within a district, providing a platform to cost-effectively access low-carbon energy sources, including:

- deep lake water cooling
- geo-thermal
- sewer heat
- solar thermal



3. IMPROVING BACKUP POWER IN MULTI-UNIT RESIDENTIAL BUILDINGS

Taller multi-unit residential buildings (MURBs) and a higher frequency of area-wide power outages due to extreme weather increase vulnerability. Minimum backup power for essential services in MURBs allows residents to remain in their buildings and better cope with power outages.



Tell us what you think!

How can we plan for a more energy-efficient Downtown?

EMERGING DIRECTIONS:

- Establish a framework to accelerate the implementation of thermal energy networks:
 - Defining opportunities, policies and roles for energy developers, partners and the City of Toronto
 - Aligning with the provincial and federal governments to secure investments in low-carbon thermal energy networks

EMERGING DIRECTIONS:

- Finalize the minimum backup power guidelines for new and existing multi-unit residential buildings
- Engage with stakeholders to share the guidelines for implementation