

Southeast False Creek Neighbourhood Energy Utility ("NEU")

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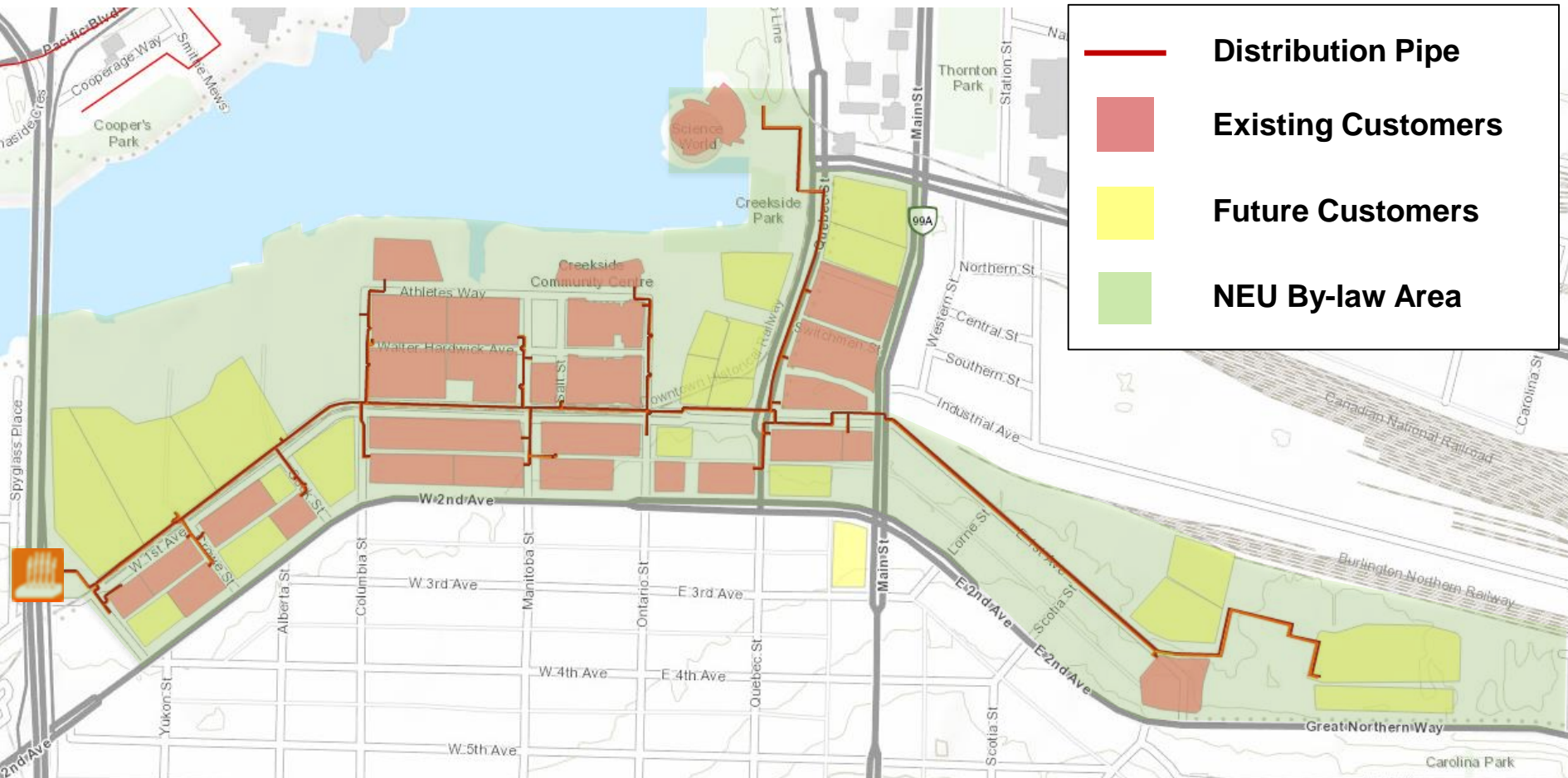


- 2003 - City of Vancouver Awarded 2010 Winter Olympic Game
- 2006 - Council made decision to establish NEU in overarching goal to **minimize GHG emissions** in the Olympic Village and SEFC Neighbourhood
- 2010 - Started Commercial Operation in time for Olympics



Current Customer Base

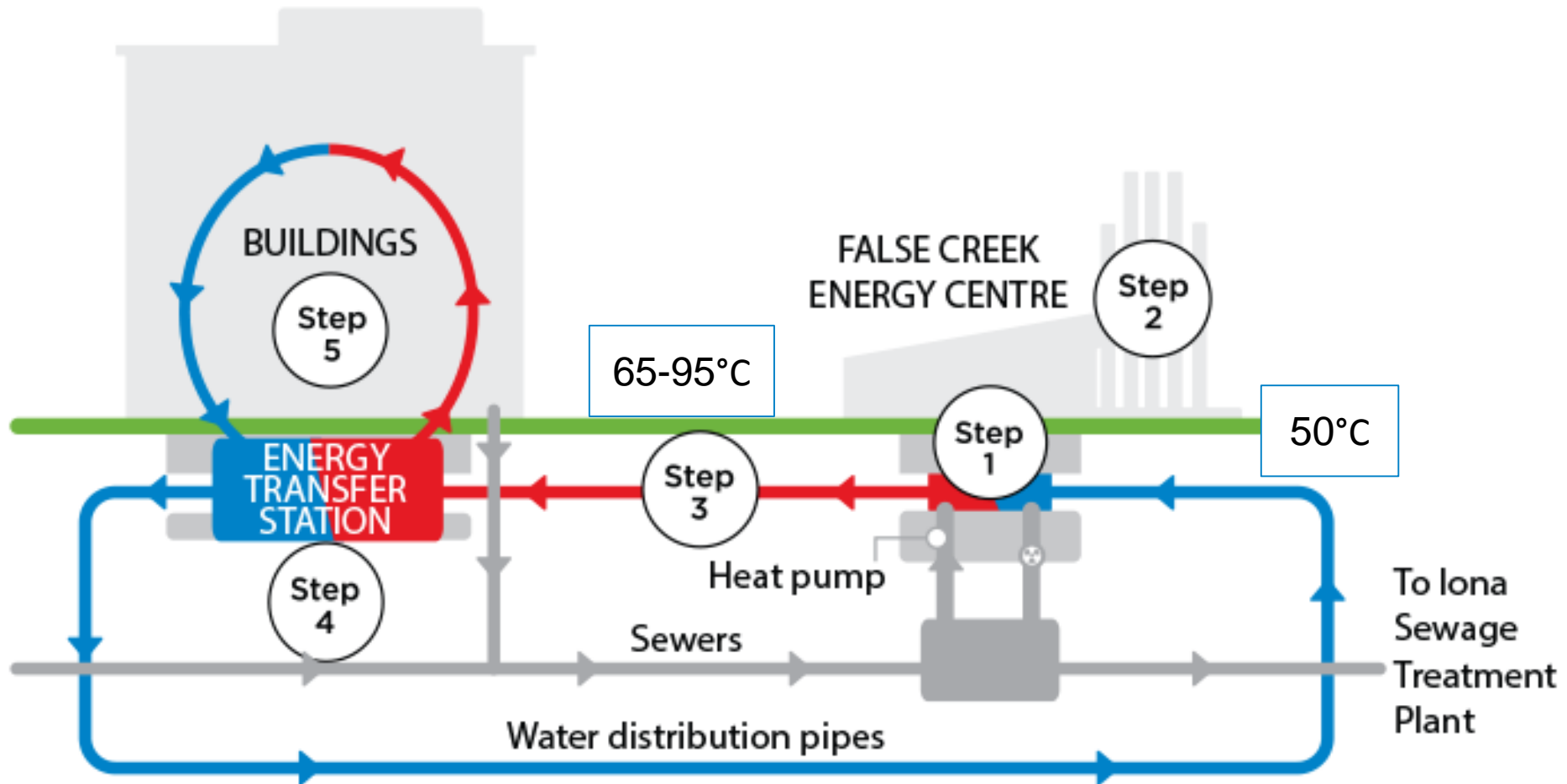
- 27 Building Connected
- 4,250,000 ft² of floor area connected (7,770,000 ft² at current build-out forecast)



Ownership/Finance Model

- **Ownership**
 - Owned and Operated by the City of Vancouver
- **Governance oversight:**
 - City Council with independent expert Rate Review Panel
- **Funding:**
 - \$40M invested to date
- **Rates:**
 - Financially self-sufficient, recovering capital/operating costs and ROI with competitive customer rates





NEU Infrastructure – Energy Centre

Centralized thermal energy
(hot water) production
facility

1. Sewage Pumping Station
2. Sewage Heat recovery - supplies 70% of the SEFC annual energy demand
3. Natural gas boilers used for back-up and peaking heat



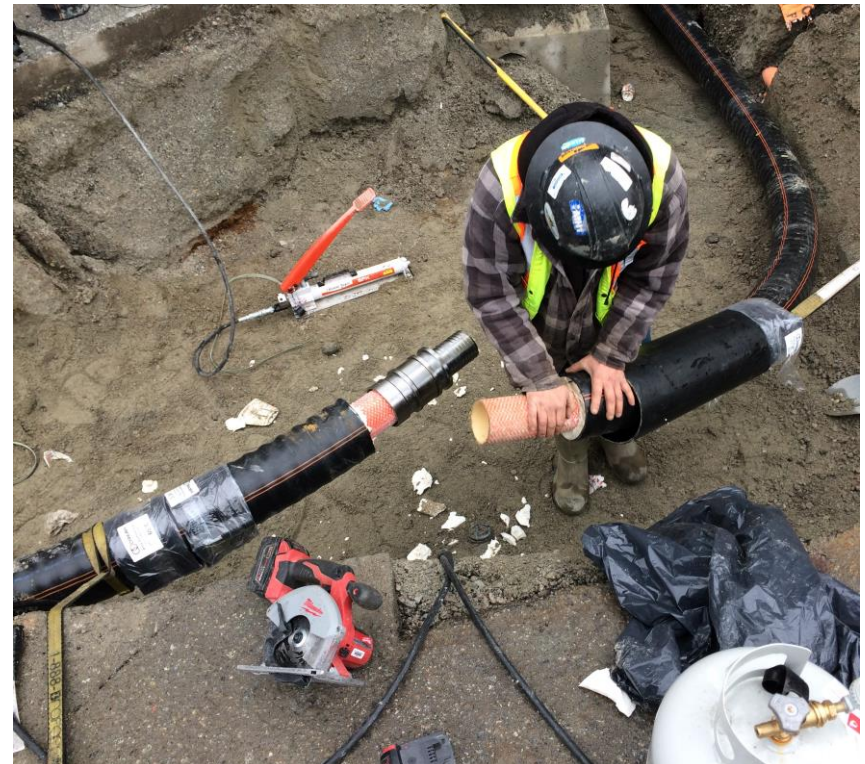
NEU Infrastructure – Distribution System

- Two-pipe closed loop system delivers thermal energy to customer buildings
- Max Operating Parameters: 95°C, 1,034 kPa (150 psi)

Logstor Piping System



Kelit PEX 115R Piping System

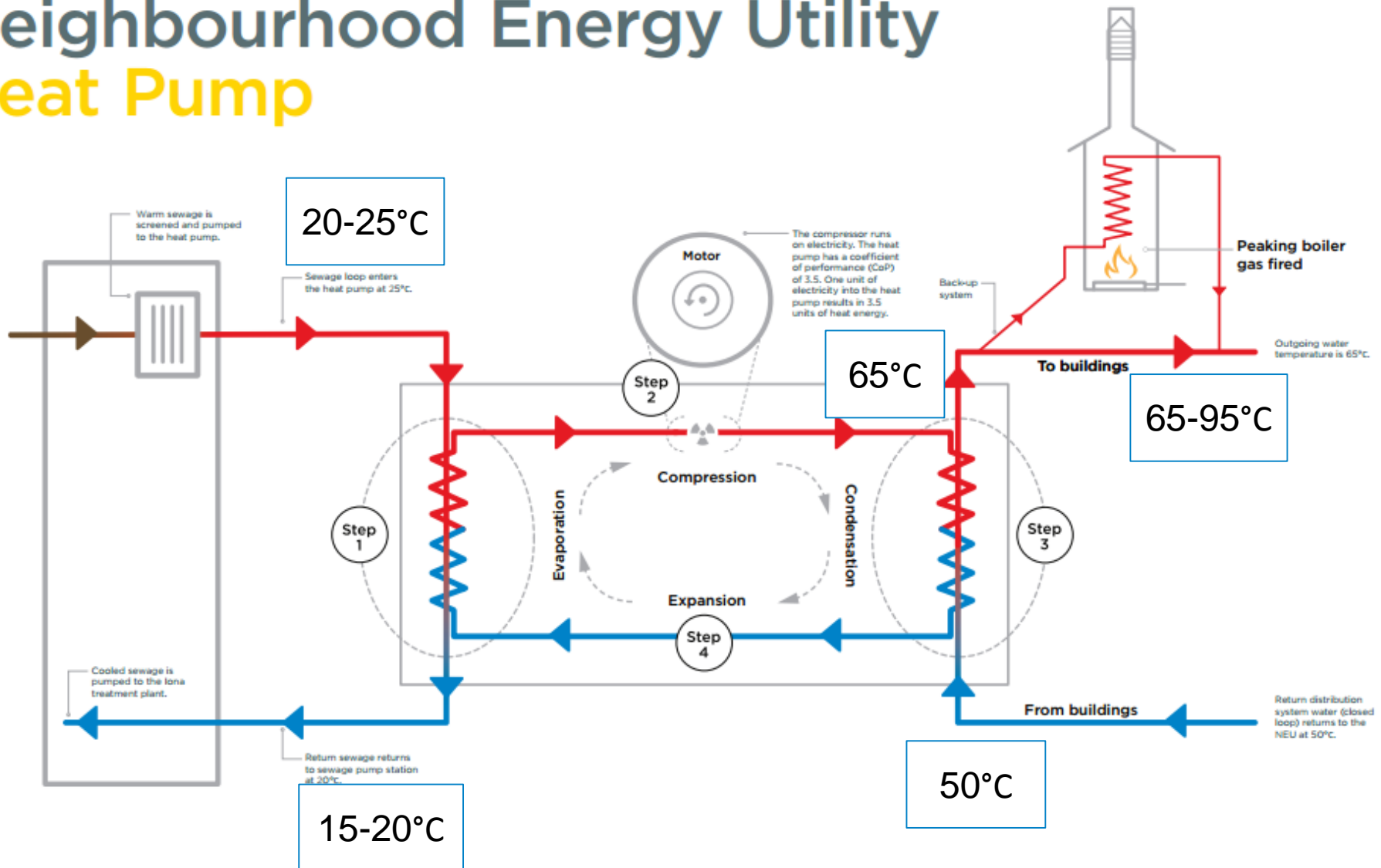


- Each building has an Energy Transfer Station owned by the NEU that produces space heat and domestic hot water, and meters consumption.
- Automated controls and remote monitoring to ensure reliability.
- Heat and domestic hot water is delivered to occupants by the building mechanical system, which is property of the customer.



Renewables – Sewage Heat Recovery

Neighbourhood Energy Utility Heat Pump



Solar Thermal

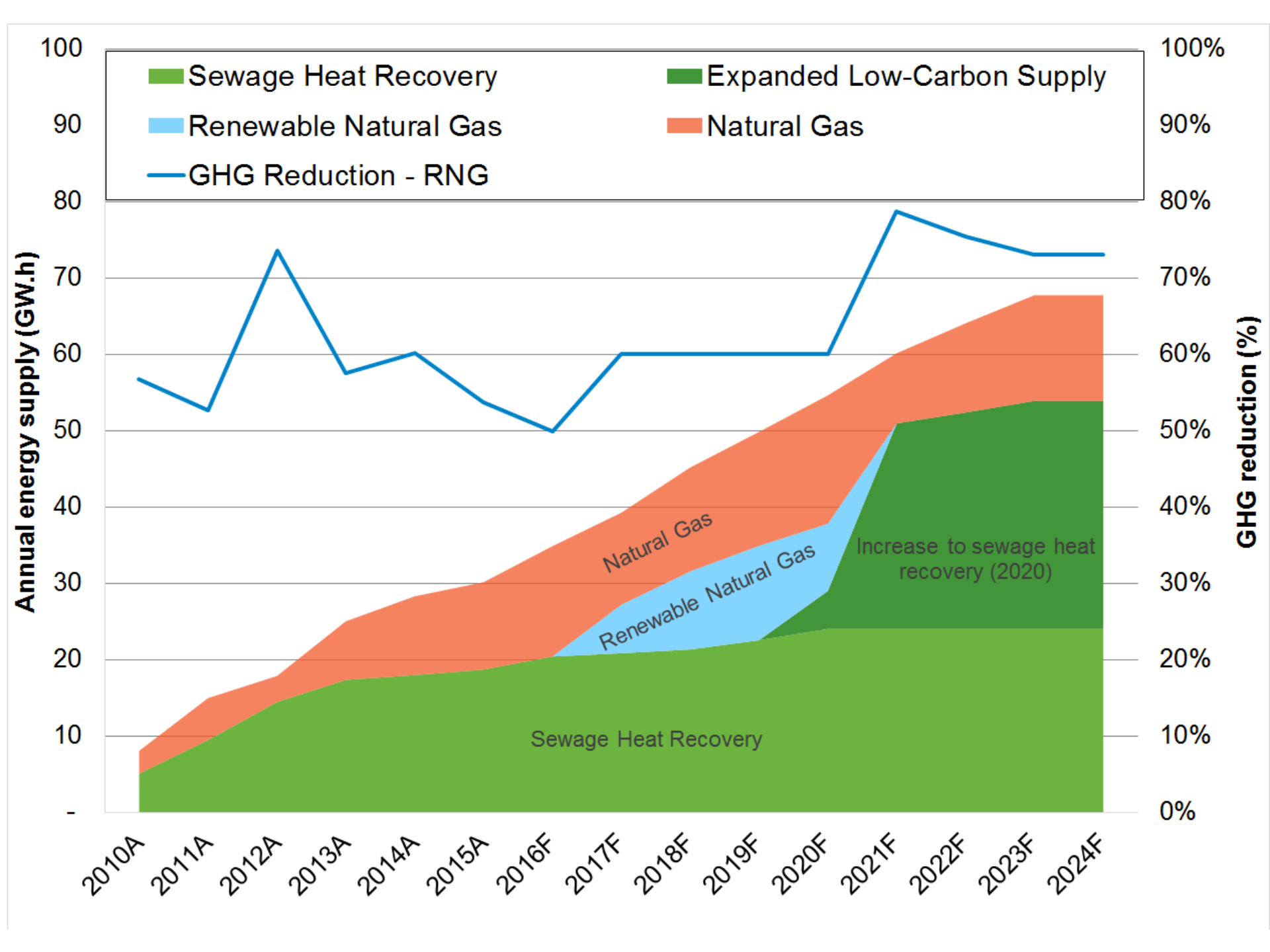


Renewable Natural Gas



Building Waste Heat





- **Environmental Performance:**
 - Eliminates building boilers and >60% of GHG emissions (*using waste heat recycled from sewage system*)
- **Customer Base:**
 - Has grown 260% since 2010 (4.2M square feet of buildings now connected)
- **Reliability**
 - Highly reliable, near zero downtime
- **Customer Rates:**
 - Competitive with traditional forms of heating



GOAL

VANCOUVER IS A CITY THAT USES **ONLY RENEWABLE SOURCES OF ENERGY**

renewable energy is
naturally replenished as it is used

TARGETS

Derive 100% of the energy
used in Vancouver from
renewable sources before
2050

All new buildings to be
zero emissions by 2030
(or sooner)



Discussion