City of Vancouver Neighbourhood Energy Utility

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Clean Air Partnership: Energy Recovery Webinar
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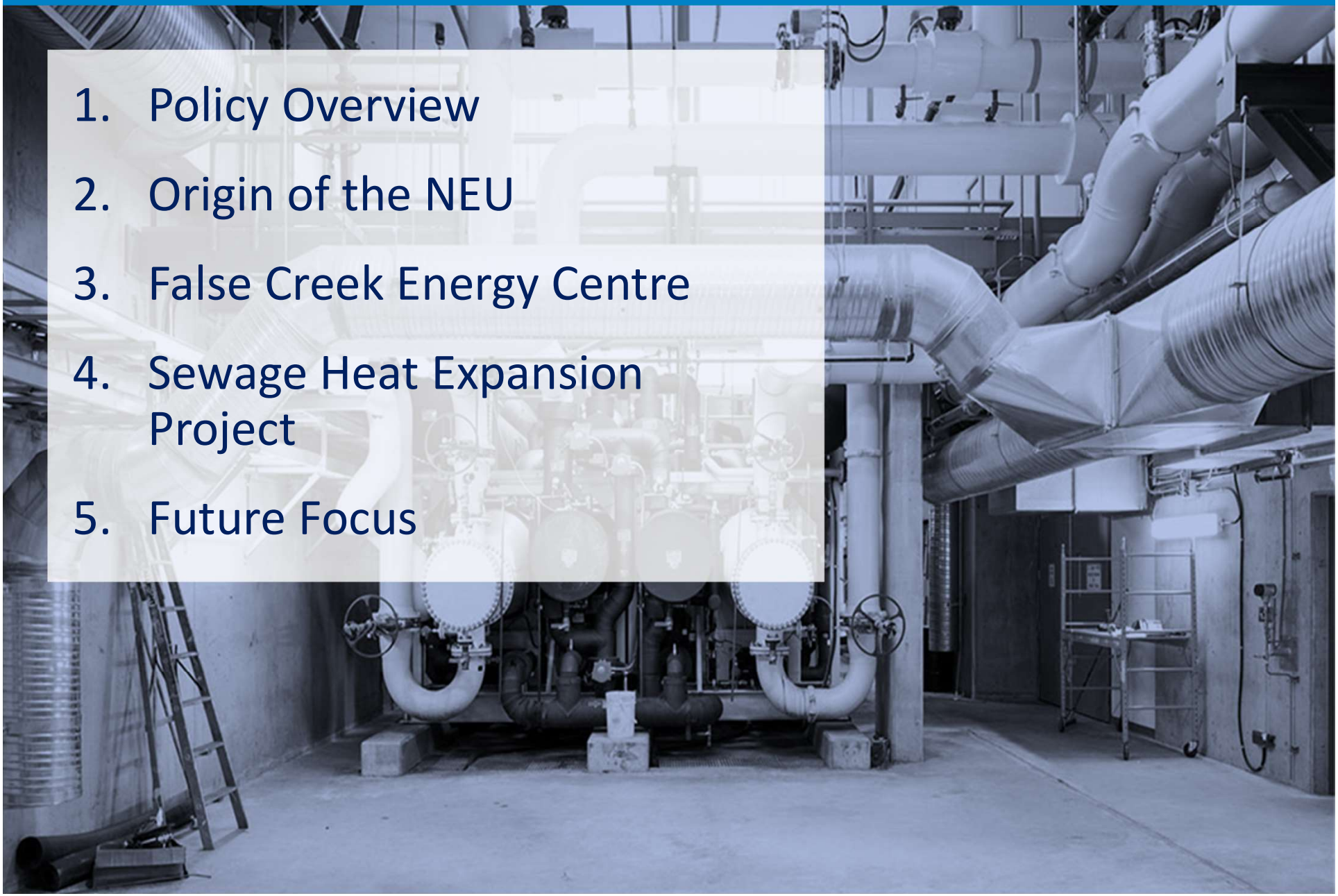
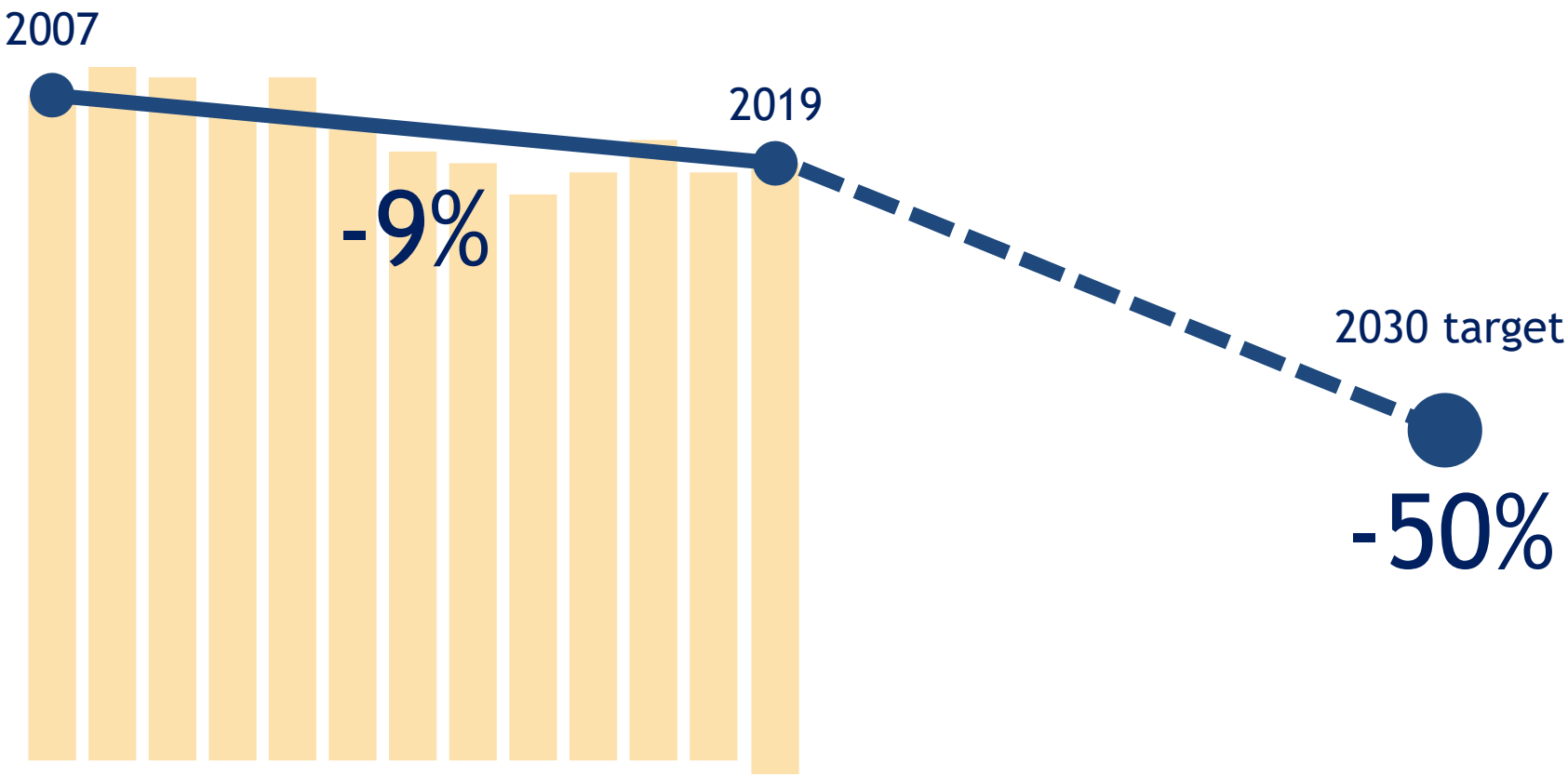
Overview



1. Policy Overview
2. Origin of the NEU
3. False Creek Energy Centre
4. Sewage Heat Expansion Project
5. Future Focus

VANCOUVER'S CARBON POLLUTION



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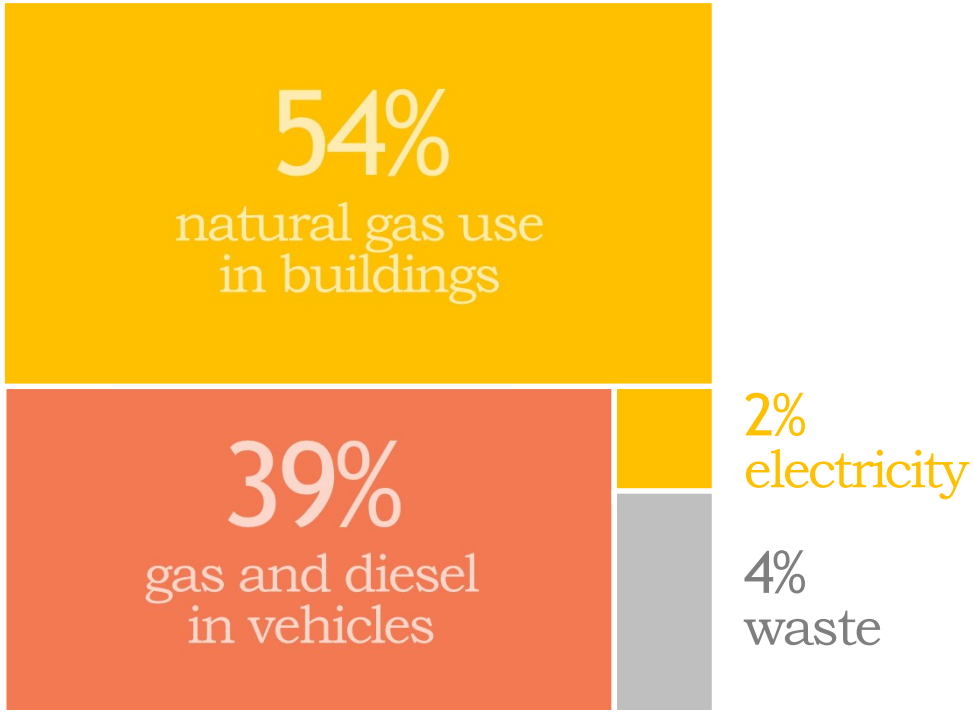
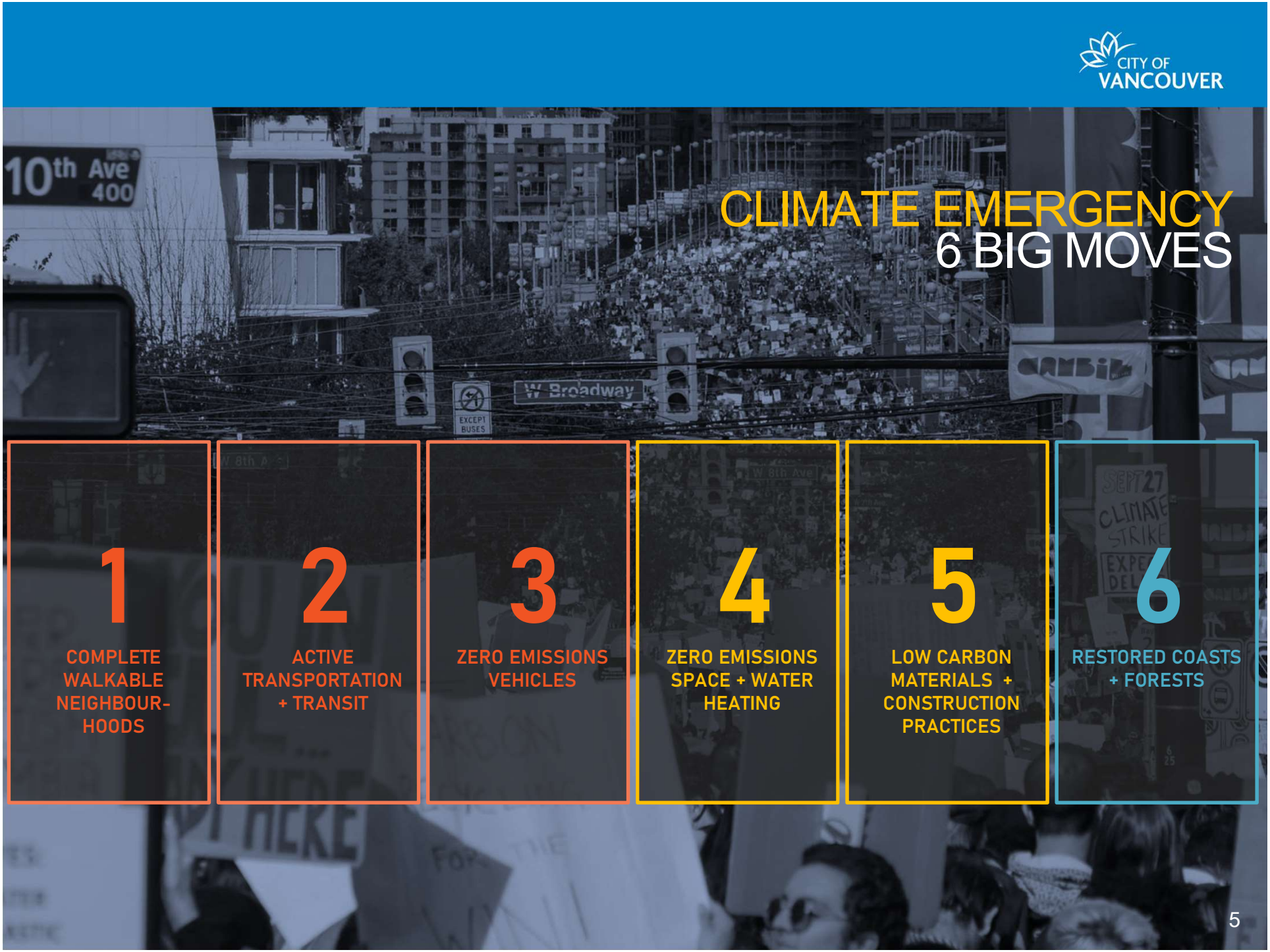


scopes 1 & 2

City of Vancouver 2019 emissions inventory (GPC)

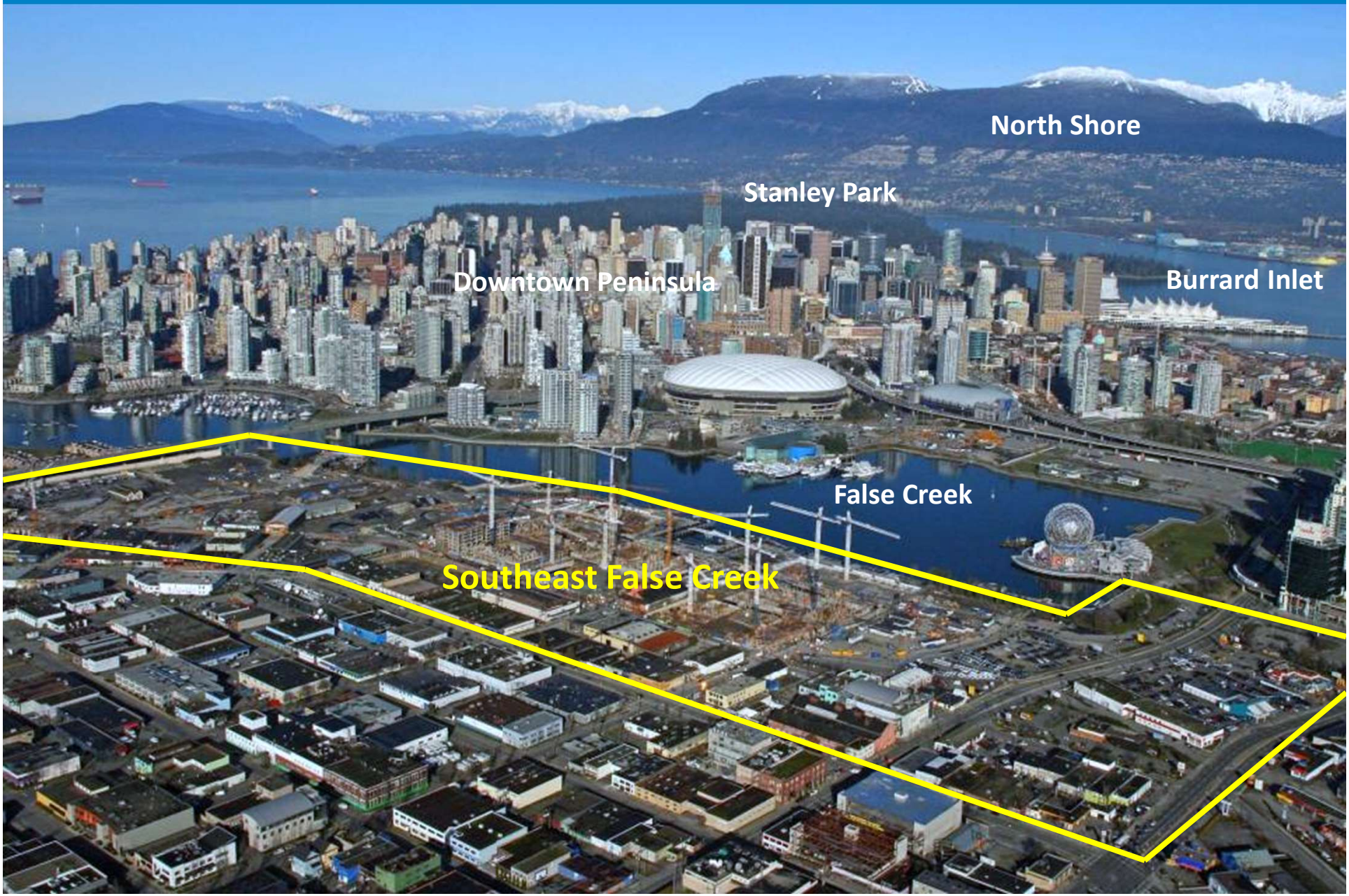
Due to rounding, numbers presented may not add up to exactly 100%


10th Ave
400
W Broadway
EXCEPT BUSES
CLIMATE EMERGENCY
6 BIG MOVES
1
COMPLETE WALKABLE NEIGHBOUR-HOODS
2
ACTIVE TRANSPORTATION + TRANSIT
3
ZERO EMISSIONS VEHICLES
4
ZERO EMISSIONS SPACE + WATER HEATING
5
LOW CARBON MATERIALS + CONSTRUCTION PRACTICES
6
RESTORED COASTS + FORESTS
SEPT 27
CLIMATE STRIKE

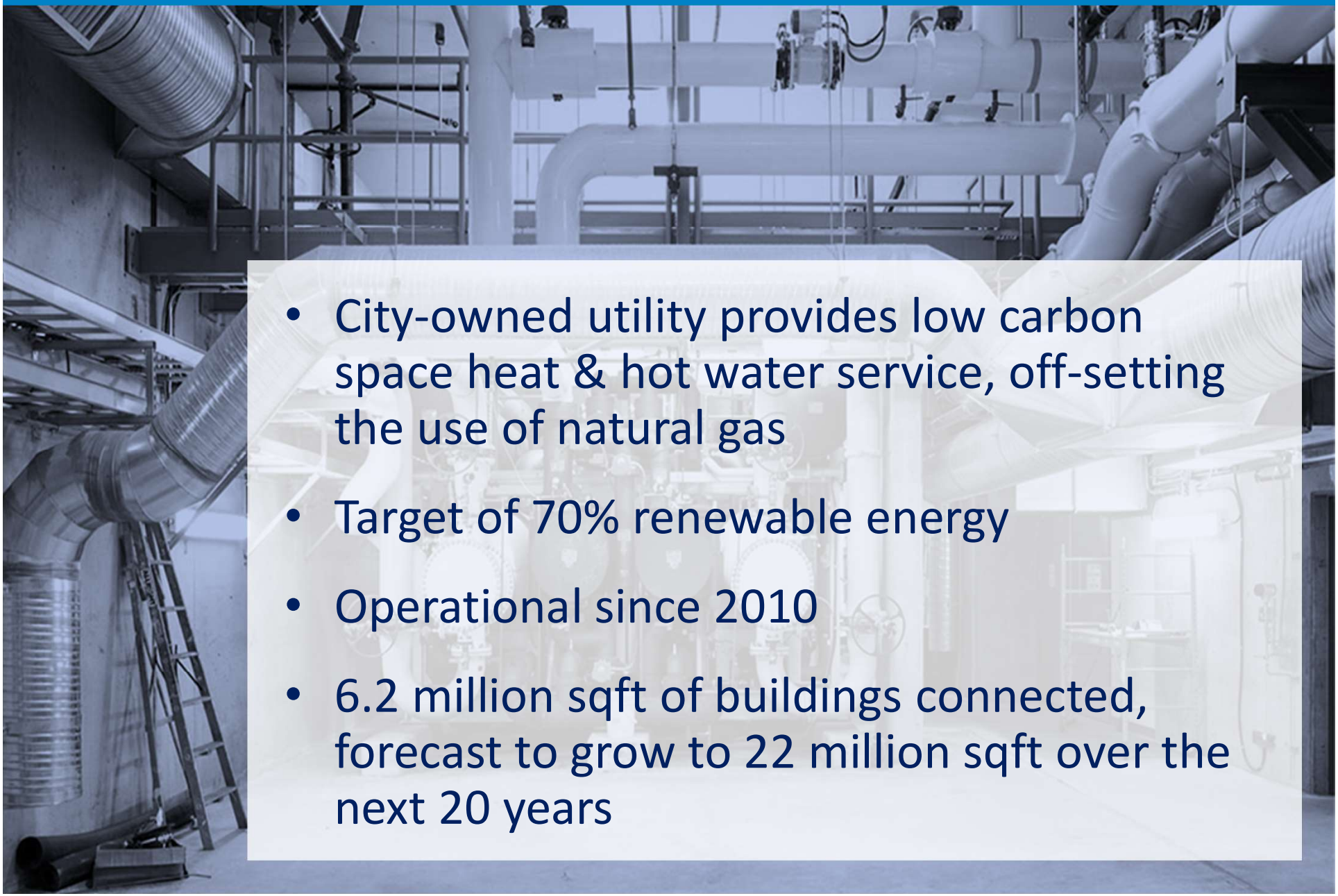
Origin of Neighbourhood Energy Utility

- 80 acre brownfield site with 120 years of industrial use
- Southeast False Creek Official Development Plan approved in 2006, including 6 million sqft of development at built-out and 16,000 new residents
- Community built on environmental, social and economic sustainability principles
- Low Carbon District Energy System to supply thermal energy (space heat & hot water) in-lieu of traditional gas boilers

Southeast False Creek (SEFC)

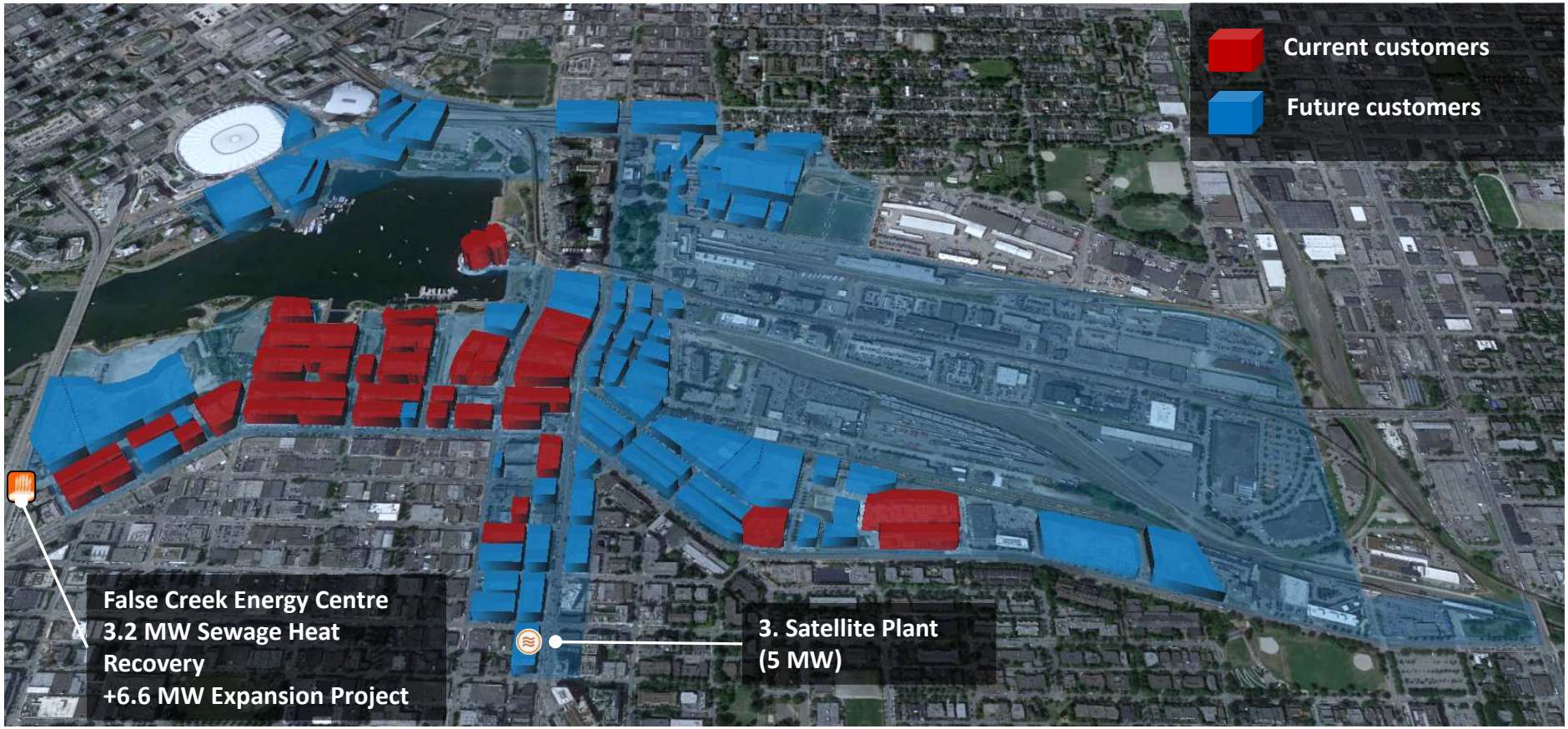


False Creek NEU Overview



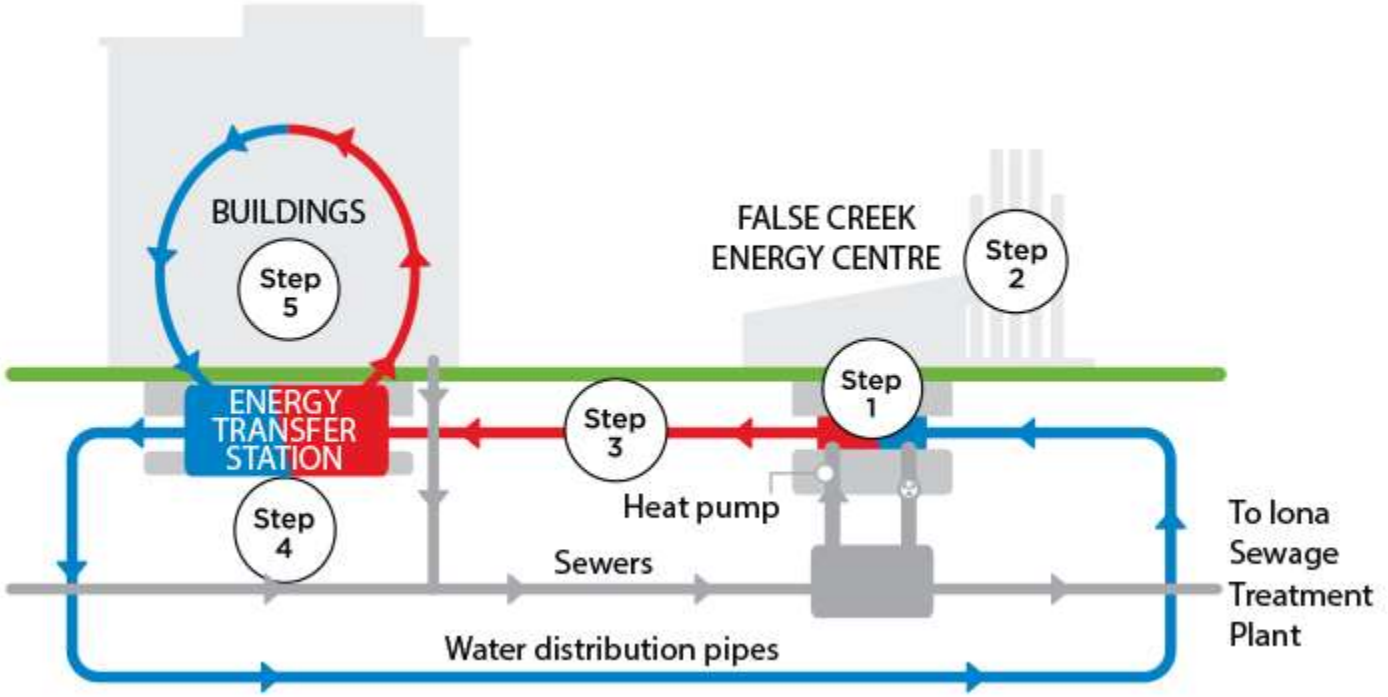
- City-owned utility provides low carbon space heat & hot water service, off-setting the use of natural gas
- Target of 70% renewable energy
- Operational since 2010
- 6.2 million sqft of buildings connected, forecast to grow to 22 million sqft over the next 20 years

False Creek NEU Service Area



Components of the System

1. CoV Sewage Pump Station
2. Centralized thermal energy facility (hot water)
3. Hydronic distribution pipe network
4. Energy transfer station(s)
5. Building mechanical system (not owned by Utility)



False Creek Energy Centre: Heat Pump

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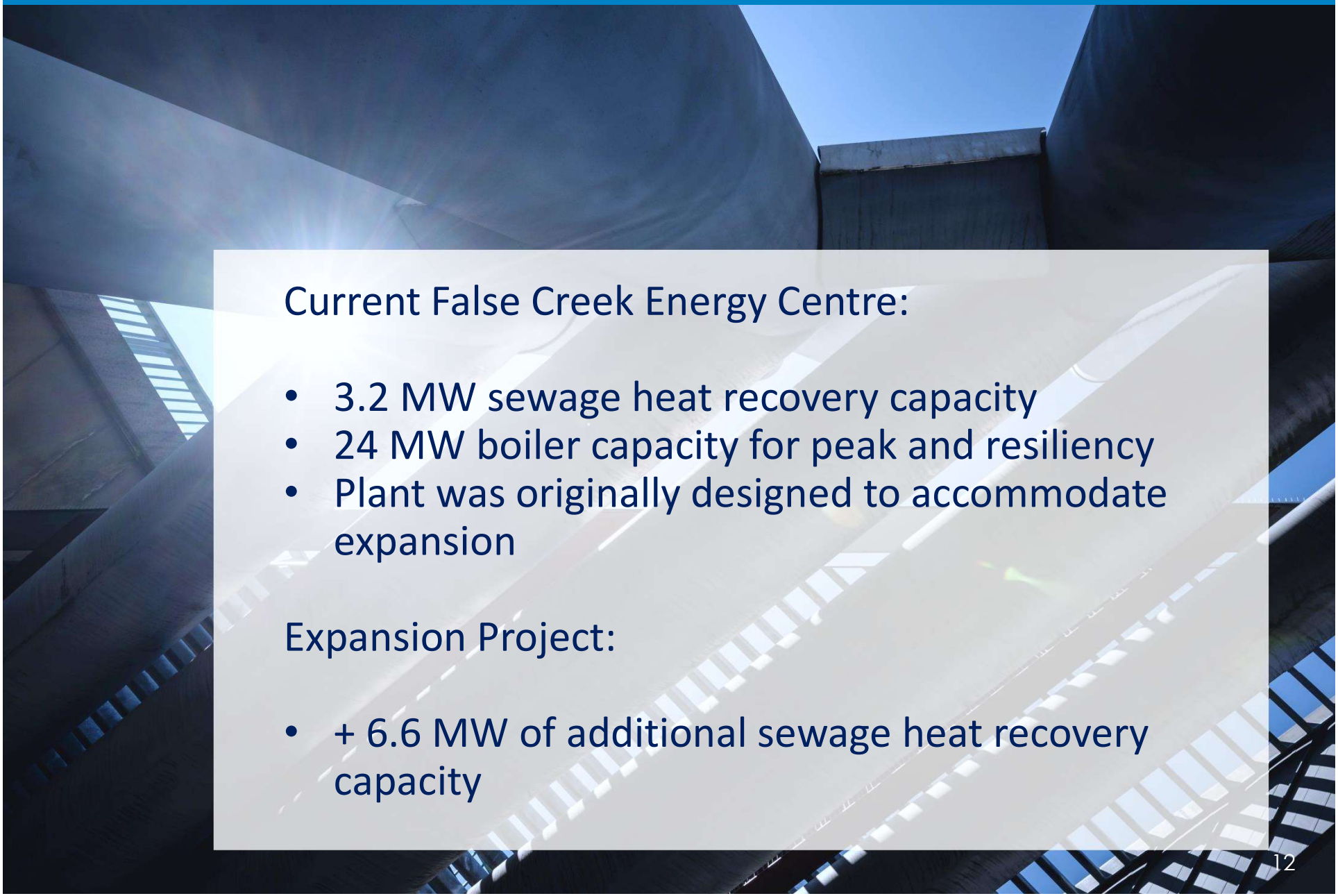
Sewage Heat Recovery Expansion Project



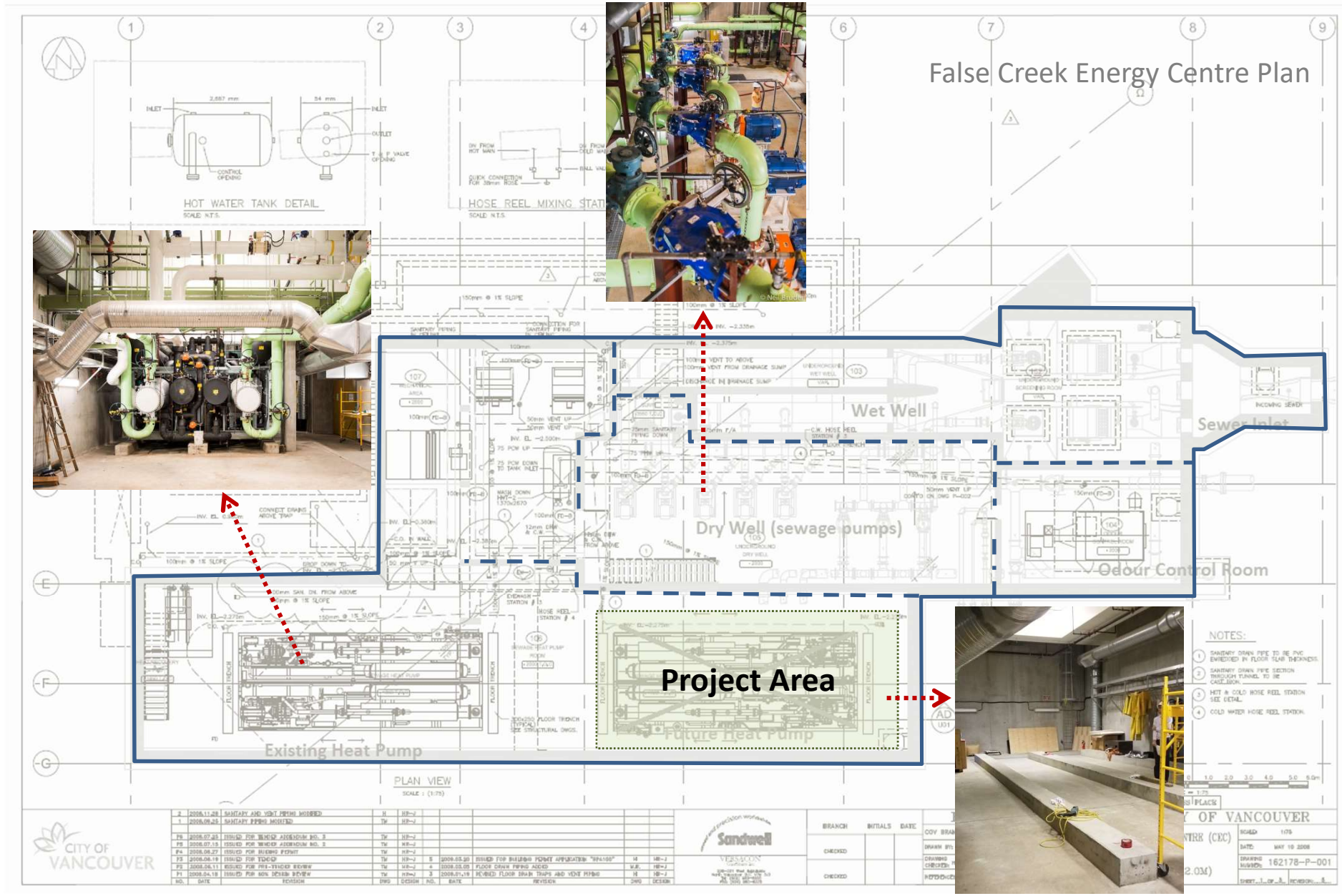
Current False Creek Energy Centre:

- 3.2 MW sewage heat recovery capacity
- 24 MW boiler capacity for peak and resiliency
- Plant was originally designed to accommodate expansion

Expansion Project:

- + 6.6 MW of additional sewage heat recovery capacity

Sewage Heat Recovery Expansion Project Area



Success of the NEU

We:

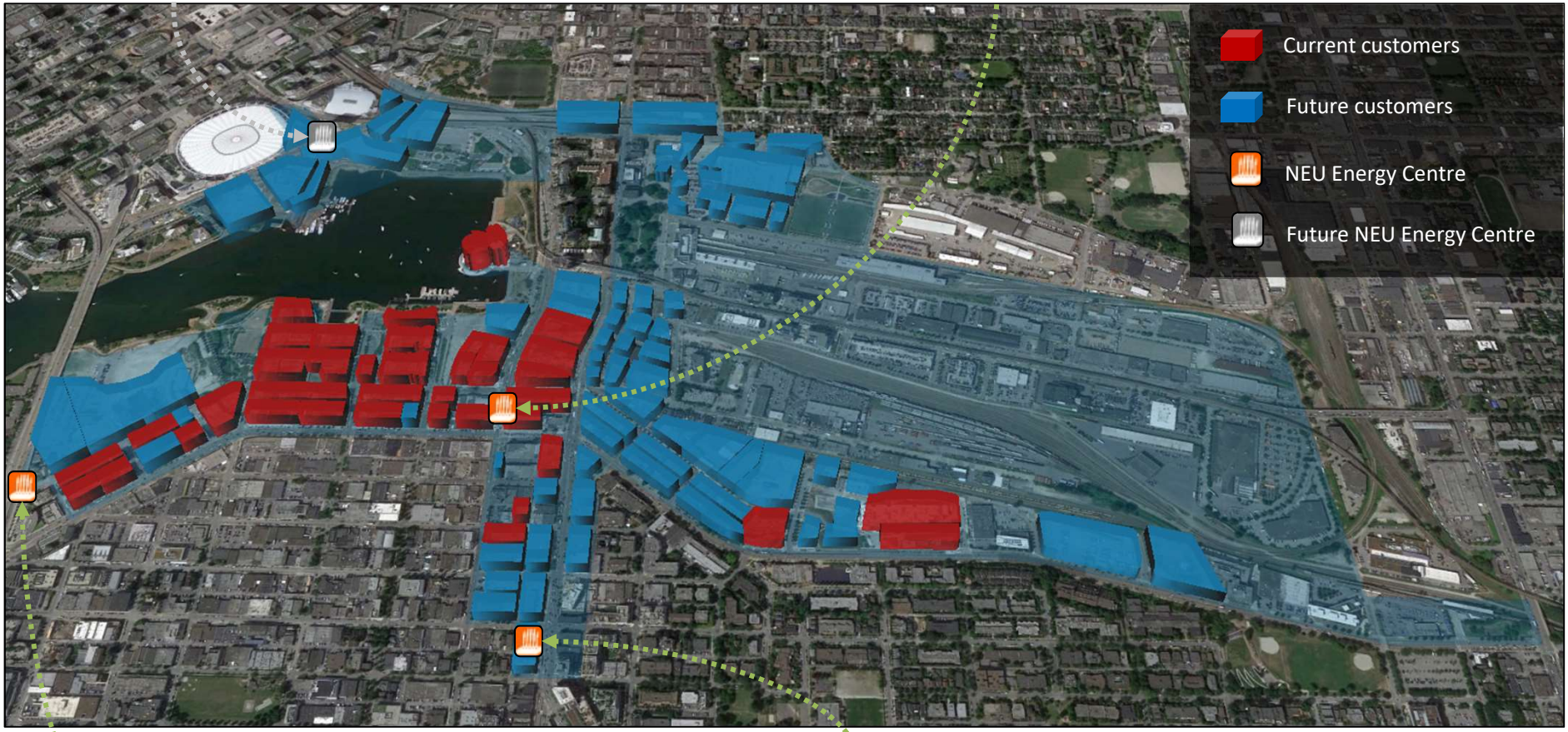
- Have had significant **success in securing grant funding**
  - Pre-2010: $10.17M (UBCM & Federal)
  - 2020: ~$10M (CCF and FCM)
- **Demonstrate leadership**:
  - First application of sewage heat recovery in North America
  - Chair c40 cities Clean Energy Network
  - Chair local District Energy Working Group
- **Value Community Engagement**: Facility Tours, “Doors Open” event, Media Interest, Pop-up Plaza
- **Demonstrate continued innovation**: sewage heat recovery, waste heat from buildings, SHARC

Future NEFC Low Carbon Supply

- NEU expansion
- Private sector partnership & innovation
- Up to 20 MW low carbon generation

MEC Waste Heat Recovery

- Waste heat recovery from commercial cooling
- No rooftop cooling towers
- Green rooftop space + rainwater capture



False Creek Energy Centre

- Integrated with CoV sewage pump station
- 3 MW sewage heat recovery
- 24 MW boiler capacity
- 6.6 MW expansion of sewage heat recovery

Mount Pleasant Peaking Plant

- NEU generation integrated with new development
- 5 MW boiler capacity
- Increased system peaking & resiliency

Current and Future Focus

- Low Carbon Expansion: second sewage heat pump
- Expansion to Northeast False Creek: Energy Purchase Agreement
- Roadmap to 100% Renewable Energy (To Council: 2023)
- Rates: Green Heat and Enhanced Green Heat Offerings
- Asset Management Plan
- System Resiliency and integration of multiple energy sources

Thank you!

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Questions?