

# The Future of Heat: Thermal Energy Networks in Stockholm & New York



31 Chambers Street  
New York, NY

This Climate Week, join BE-Ex, the Swedish Energy Agency, and NYSERDA for a timely discussion of thermal energy networks, as part of our International Pathways series. These networks present an innovative solution to dramatic carbon reduction through sharing heat, including repurposing wasted energy, over an optimized network.

#### Opening Remarks:

**Richard Yancey**, Exec. Director, Building Energy Exchange  
**Veronica Eade**, Director of Built Environment, Swedish Energy Agency  
**Ke Wei**, Senior Advisor, NYSERDA

#### Moderator:

**Molly Dee-Ramasamy**, Director, Deep Carbon Reduction Group, JB&B

#### Panelists:

**Erik Rylander**, Head of Carbon Dioxide Removals, Stockholm Exergi  
**Johan Börje**, Head of Voluntary Carbon Market, Stockholm Exergi  
**JP Flaherty**, Managing Director, Global Head of Sustainability, Tishman Speyer  
**Travis Smith**, Principal, Smith Engineering

September 20, 2023  
9:00 - 10:30 am

1.5 LU





Stockholm's District Heating Network  
- a platform for innovation

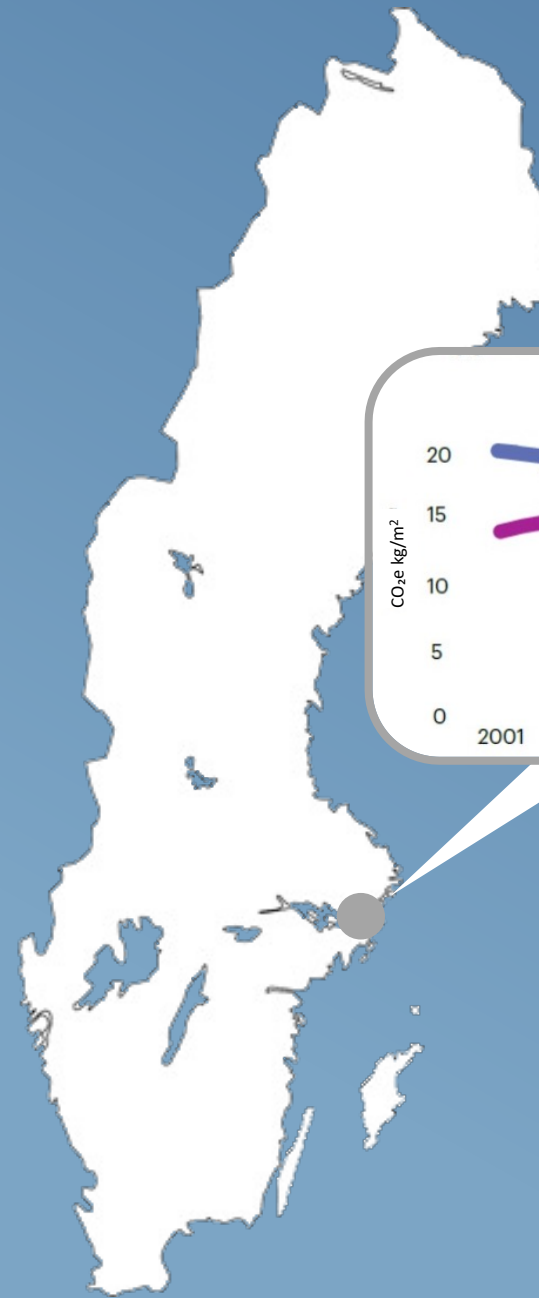
Erik Rylander, Head of Carbon Dioxide Removal

*The Future of Heat: Thermal Energy Networks in Stockholm and New York*

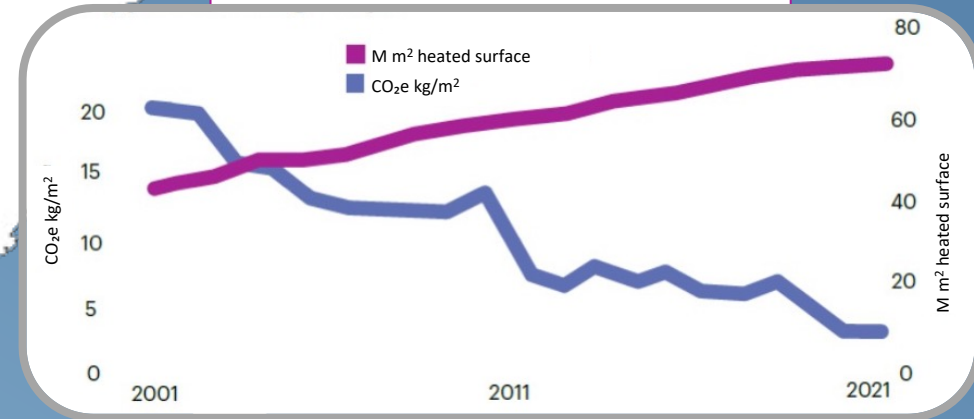
*NYC Sept 20, 2023*

# Stockholm Exergi

- District heating and cooling to 12 000 buildings and power to the electrical grid, totaling 10 TWh p.a.
- 50% owned by City of Stockholm
- €700 m turn-over
- Last coal-fired plant phased out in 2020; now 99 per cent of production from recovered, reused and renewable sources
- Next step: Become EU's largest supplier of CO<sub>2</sub> removals with permanent storage



**Stockholm's decoupling of growth and fossil emissions for heating**



Stockholm Exergi has two owners (each with a 50% share)



**Stockholms  
stad**

and

Ankhiale, which is owned by the following companies:

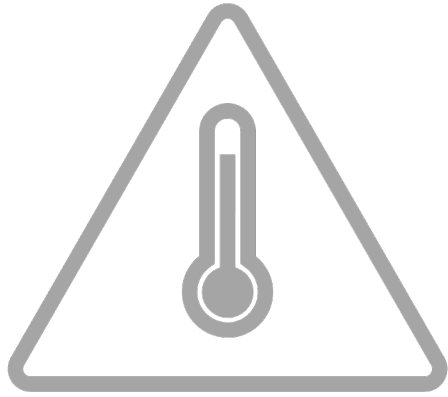
**alecta**  **apg**

**KE  
VA**

  
**PGGM**

  
**AXA**

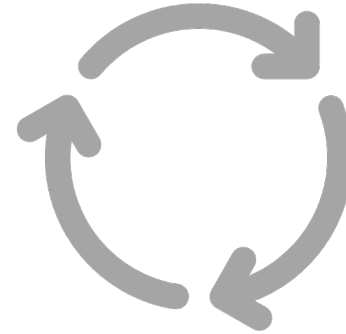
# Four business areas



Heat / Cool



Power  
(energy + capacity)



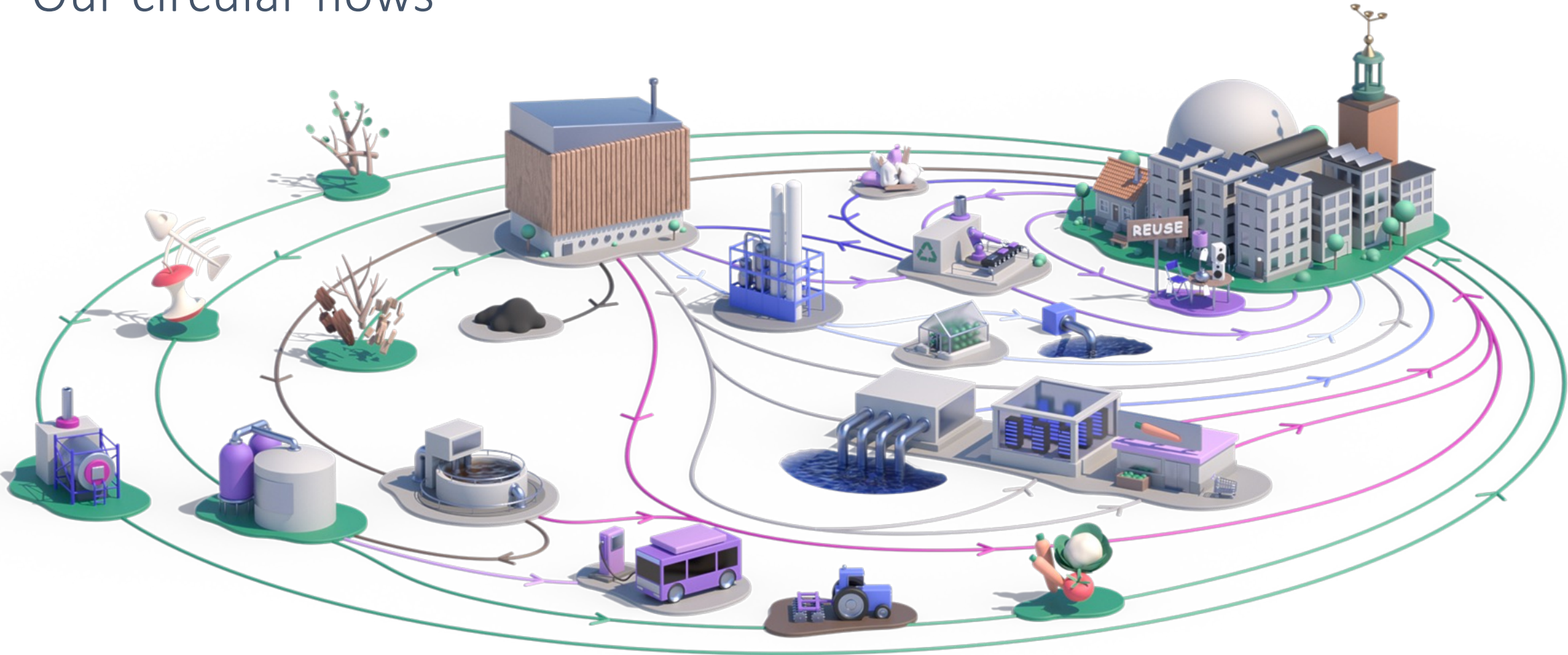
Waste Treatment



Carbon Dioxide  
Removal



# Our circular flows



# Smart buildings enable smart cities



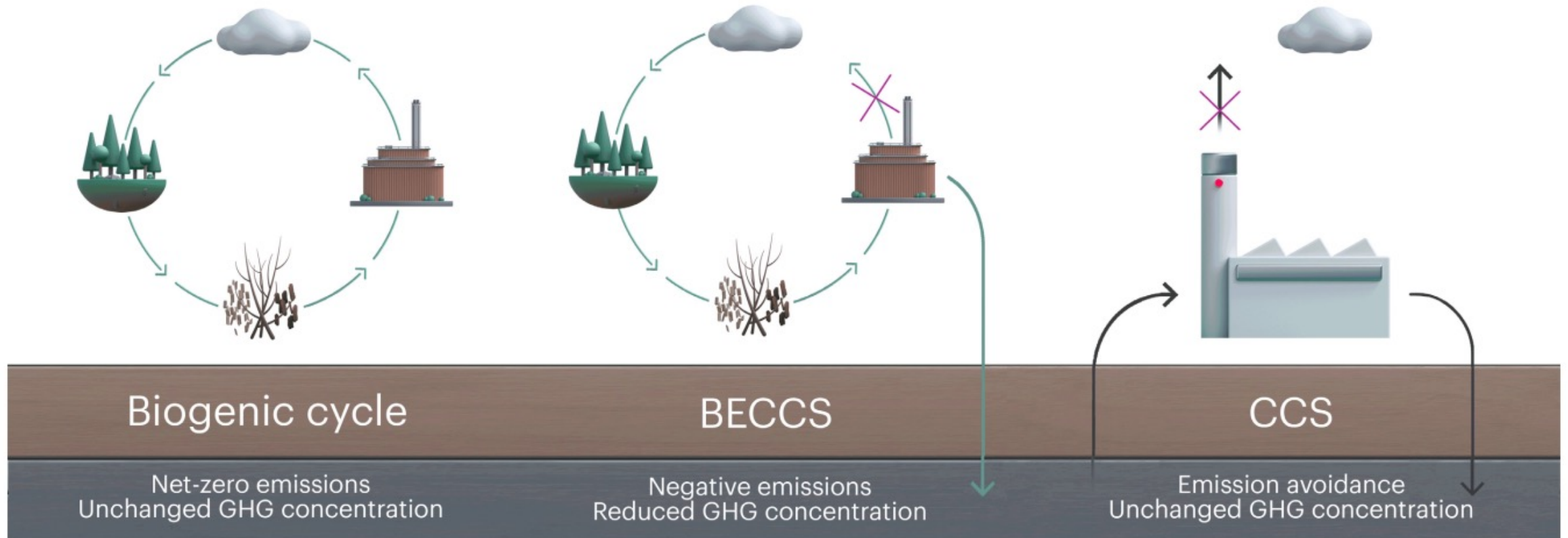
# We buy excess heat



- **With the** Open District Heating concept, we make use of heat that would otherwise go to waste.
- We pay market prices, i.e. we put our own production under cost competition.
- Process waste heat, data centres, supermarkets, etc.
- Vision to source 10% of Stockholm's heating needs from reusing 3<sup>rd</sup> party waste energy.
- Stockholm Data Parks – **to** scale Open District Heating.
- In 2022, we recovered enough heat for approximately 15,000 modern flats.



# BECCS w. geological storage (Negative Emissions) remove carbon dioxide from the atmosphere permanently



# Beccs Stockholm – a full-scale BECCS plant

Starting 2027  
BECCS KVV8 will remove  
**800,000 tonnes** of  
biogenic carbon dioxide  
per year from the  
atmosphere, more than  
Stockholm's annual fossil  
road traffic emissions.

Beccs Stockholm

NEGATIVE EMISSIONS BY STOCKHOLM EXEROI



This project is co-funded by the  
European Union's Innovation Fund  
under grant agreement no 101051202

*Helen Clark* 2022

# Beccs Stockholm

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NEGATIVE EMISSIONS BY STOCKHOLM EXERGI

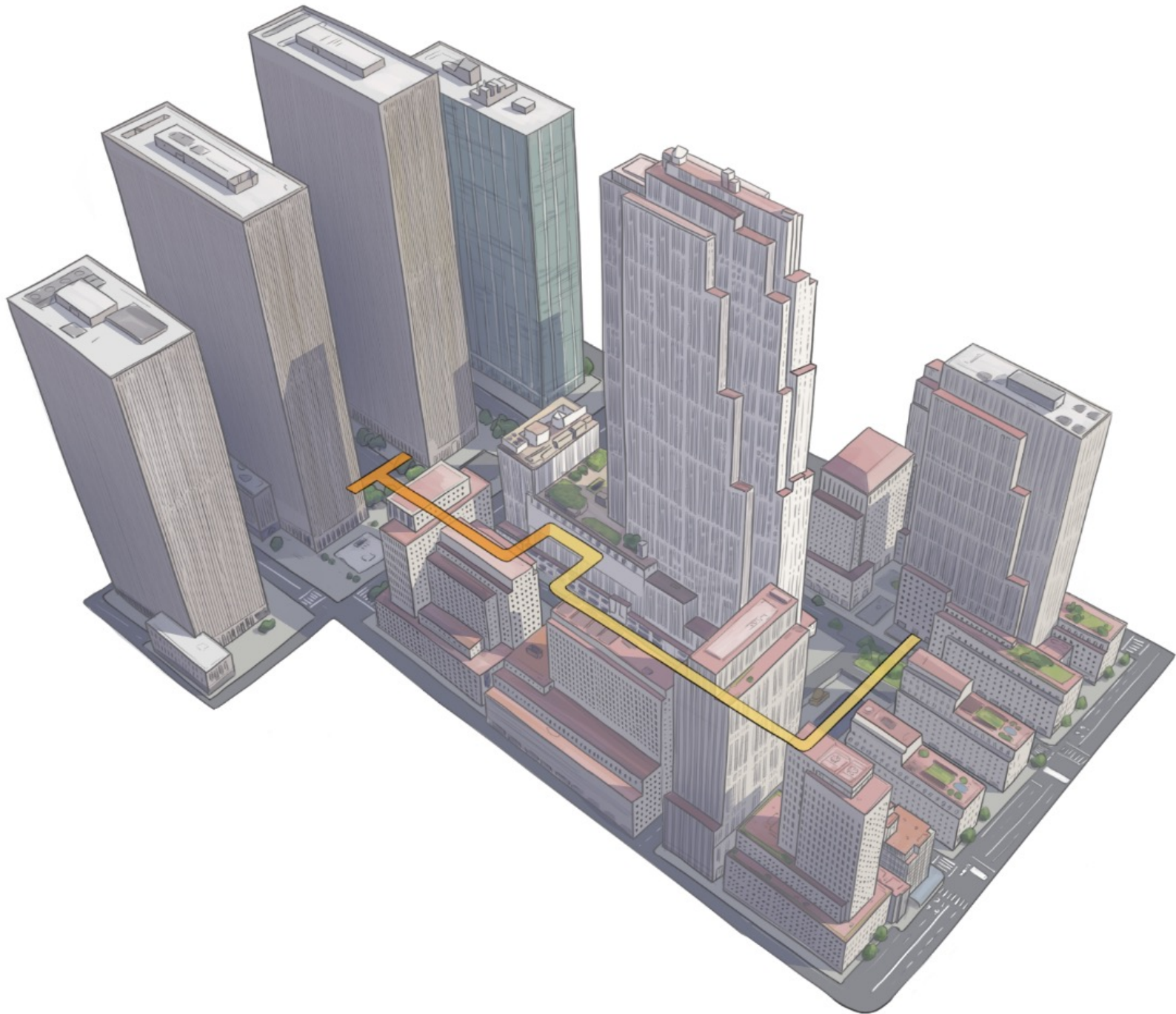
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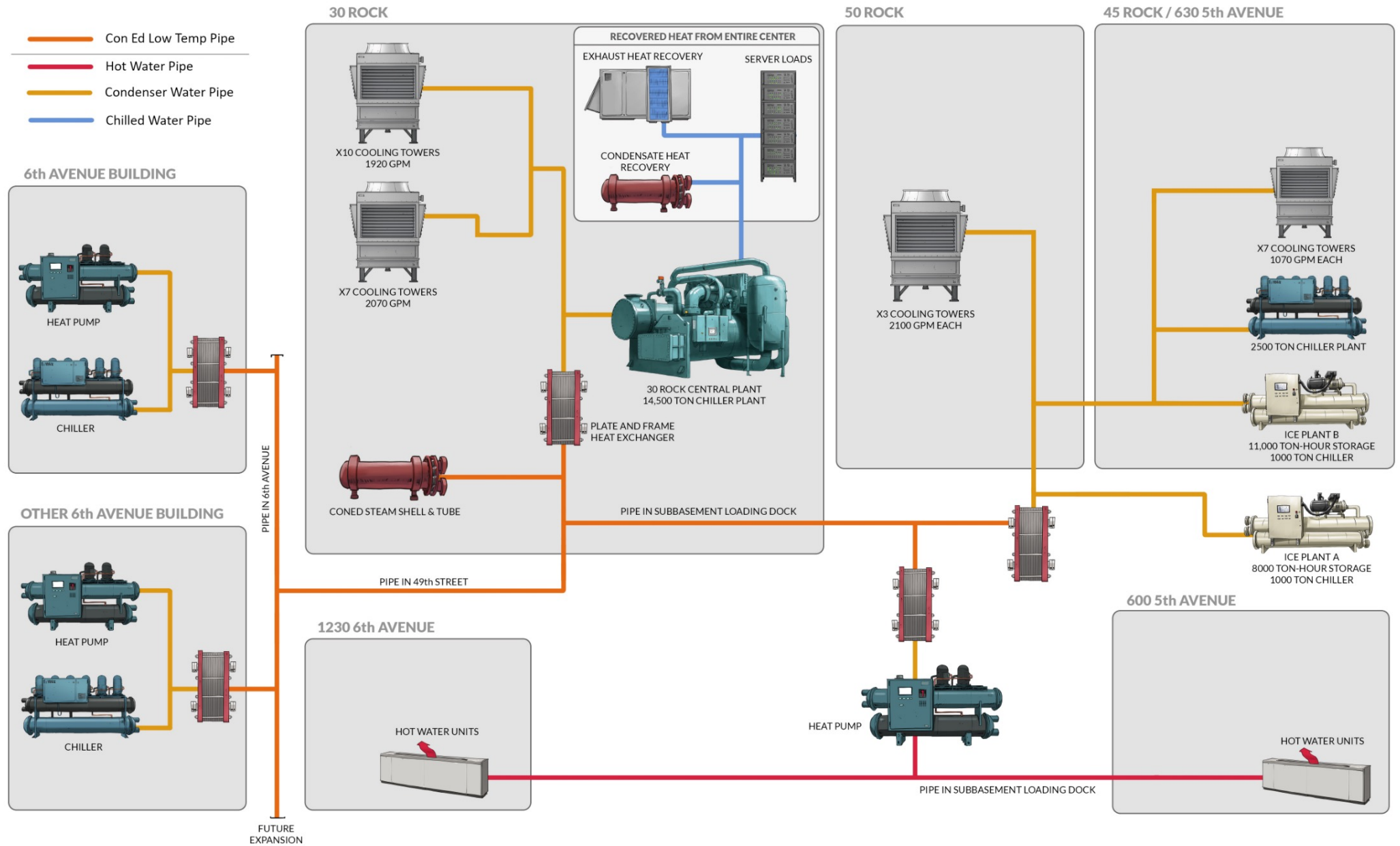
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# Proposed Infrastructure





be  
ex

building  
energy  
exchange

discuss.

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be  
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thank you.

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