



# District Energy

Board of Directors  
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TORONTO WATERFRONT  
REVITALIZATION CORPORATION

# Overview

- Key issues:
  - Why district energy?
  - How much are emissions reduced?
  - What technologies are there?
  - Who should execute implementation?
  - When should TWRC sell or do a concession?
  - Is district energy financeable?
  - What are Enwave's initial operating costs?
- Recommendations
- Resolution

# Why district energy?

- Enhanced quality of life:
  - Insulates users from increasing energy costs
  - Consistent and reliable heating and cooling
- Sustainable urban development:
  - Reduction in demand for non-renewable energy due to increased conversion efficiency from 65% to 80%
  - Reduction in emission of greenhouse gases
- Enhancing international image:
  - Model of sustainability and revitalization

# How much are emissions reduced?

- 14,000 tonnes/year CO2 for DE (26%)
- 50,000 tonnes/year CO2 for CHP (96%)
- Emissions reductions cited take into account increased efficiency in use of natural gas and electricity compared to alternative

# What technologies are there?

- Technologies being considered:
  - Cogeneration (and thermal offtake from third party cogen)
- Technologies deferred:
  - Bioenergy
- Technologies rejected:
  - Heat pumps
  - Solar thermal
  - Photovoltaic
  - Fuel cells

# Who should execute? (1)

- The following government partners will execute parts of district energy if a deal can be struck:
  - TCHC: interconnection with Regent Park system to defer capital expenditures
  - PEC: purchase of “waste” heat to service much of TWRC (and TCHC) demand
  - Toronto Hydro: long-term thermal supply contract with or without joint venture
  - Enwave: “super-advisor” and short-term O&M; broader involvement rejected by Enwave board

## Who should execute? (2)

- Parts of district energy not executed by a government partner will be executed by a competitively selected concessionaire.
- The concessionaire may be either quasi-public (such as Enwave) or private (such as Dalkia).
- While most business risks will be transferred, take-or-pay arrangements will likely be required, even in the case of a concession.

# When should TWRC sell?

- TWRC intends to exhaust potential deals with government partners.
- If TWRC is unable to reach a deal with government partners, TWRC will do an RFP for a district energy concession.
- TWRC could also roll any deal it reaches with government partners into a concession.
- The concession will be set up to protect TWRC's sustainability and price-setting interests and provide a revenue stream to TWRC.
- At any point in time, TWRC could monetize its concession revenues to secure cash in a lump sum.



# Is district energy financeable?

- District energy is exposed to start-up risk.
- Debt has to be serviced by long-term customer contracts which may not be in place fast enough.
- The customer base will be a very good credit.
- Government partners, such as TCHC, Toronto Hydro, or PEC, may build and finance some infrastructure in exchange for future payments.
- Also, Infrastructure Ontario has confirmed TWRC's eligibility for funding.
- A revised pricing model that includes the developer/condo corporation paying for the Energy Transfer Station (ETS) has reduced the annual per unit revenue requirements to \$1080.



# What are Enwave's initial costs?

- Enwave's initial operating costs charged to TWRC will depend on the model which is chosen.
- Optimal staffing levels depend on regulation and on desired service standards.
- Operating costs based on time may be available from Enwave in the interim stage.
- Enwave is seeking recovery for employee severance due upon termination of an O&M contract.
- TWRC may be able to obligate a successor O&M contractor to take on the legacy workforce.



# Recommendations

- Exhaust potential deals with government partners.
- Do a concession on the project components not included in deals with government partners.

# Resolution

- That TWRC implement district energy for Toronto's waterfront.
- That TWRC diligently pursue negotiations with TCHC, PEC, Toronto Hydro and Enwave to advance district energy.
- That TWRC implement a concession agreement on elements of district energy not provided by TCHC, PEC, Toronto Hydro, or Enwave.
- That all contracts be subject to specific Board / finance committee approval.