

# CAPITAL PROFILE REPORT

PROFILE NAME: **DISTRIBUTION PIPING SYSTEM**  
 PROFILE NUMBER: **21-83-8384**  
 DEPARTMENT: **Utilities**  
 LEAD BRANCH: **Blatchford Renewable Energy Utility**  
 PROGRAM NAME:  
 PARTNER: **Infrastructure Delivery**  
 BUDGET CYCLE: **2023-2026**

**FUNDED**

|                       |                |
|-----------------------|----------------|
| PROFILE STAGE:        | Approved       |
| PROFILE TYPE:         | Standalone     |
| LEAD MANAGER:         | Tom Lumsden    |
| PARTNER MANAGER:      | Brian Latte    |
| ESTIMATED START:      | January, 2021  |
| ESTIMATED COMPLETION: | December, 2026 |

|                   |                   |
|-------------------|-------------------|
| Service Category: | Major Initiative: |
|-------------------|-------------------|

|               |                |                              |               |
|---------------|----------------|------------------------------|---------------|
| <b>GROWTH</b> | <b>RENEWAL</b> | <b>PREVIOUSLY APPROVED:</b>  | <b>15,467</b> |
| <b>100</b>    |                | <b>BUDGET REQUEST:</b>       | <b>-</b>      |
|               |                | <b>TOTAL PROFILE BUDGET:</b> | <b>15,467</b> |

## PROFILE DESCRIPTION

To maintain consistency with similar utility infrastructure (i.e. Natural Gas), funding needs to be secured to allow for the extension of the Distribution Piping Network concurrently with the other development servicing. The estimated cost for the entire distribution piping network in Blatchford is \$80 Million over the full development horizon. This cost has been included in the financial model for Blatchford Renewable Energy, however there has been no funding approved to date of the installation of this piping.

The Utility's first Energy Center, connected to the first geoexchange field under the future storm water pond, has been in operation since late 2019 and is now serving the first 20 customers in the first stage of the Blatchford land development. With full development of stage 1 in Blatchford the Utility is expected to connect 27,000 square meter of space and provide 2,000 kW of thermal energy services. The first Energy Center will also be able to provide energy to the second stage of land development in Blatchford, which is currently prepared for construction. In stage 2 of the land development the Utility is expected to further connect 36,000 square meter of space and provide 2,200 kW of thermal energy services at full stage 2 development.

In 2018 The Northern Alberta Institute of Technology (NAIT) and the City agreed on a land sale for 13.27 hectares of land within the Blatchford Community. This will allow NAIT to advance their Campus Development Plan and become part of the Blatchford community. As a requirement in the land sale agreement the City will have to provide development to the NAIT parcels in Blatchford by 2023.

This Capital Budget adjustment is necessary for the design and delivery of the Distribution Piping System for the current development stage, including the NAIT development. It will further allow for the expansion of the utility pipe network and to follow the growth in the development, representing a prudent and flexible approach to ensure that essential utility services will be provided to future residents, institutions, and businesses in the Blatchford Community.

The following table provides an overview of the timing and costs of the next stages in Distribution Piping System development in Blatchford:

Stage 1 Residential Development  
 2021 \$1,600,000  
 2022 \$0  
 2023 \$0  
 Total \$1,600,000

Stage 2 Residential Development  
 2021 \$1,000,000  
 2022 \$ 250,000  
 2023 \$0  
 Total \$1,250,000

NAIT Development  
 2021 \$0  
 2022 \$4,600,000  
 2023 \$1,200,000  
 Total \$5,800,000

Summary  
 2021 \$2,600,000  
 2022 \$4,850,000  
 2023 \$1,200,000  
 Grand Total \$8,650,000

## PROFILE BACKGROUND

The Distribution Piping System transfers energy by connecting the District Energy Centers to the individual properties in Blatchford. It consists of a two water pipe system, supply and return, which runs under the road network in Blatchford and connects to each property line. Blatchford Renewable Energy will own and operate the Distribution Piping System. This Capital Budget adjustment is necessary for the design and delivery of the Distribution Piping System for the current development stages, including the NAIT development. At full build out of Blatchford all the Distribution Piping System will be connected under the Blatchford lands and will supply sustainable heating and cooling energy to the residents and businesses in the community.

## PROFILE JUSTIFICATION

The design and construction of the Distribution Piping System as part of the Blatchford District Energy Sharing System is needed to transfer energy from the generation point to the utility customers. The network of pipes are connecting the Energy Center in the community to the individual parcels and customers. The implementation of the District Energy Sharing System was manifested in the business case approved by Council in December of 2016.

## STRATEGIC ALIGNMENT

Blatchford Renewable Energy was established to help achieve the City's long-term goal of 100 percent renewable energy and carbon neutrality for the Blatchford development. This new City-owned utility owns and operates an innovative District Energy Sharing System in the community.

The establishment and growth of Blatchford Renewable Energy supports City Council's objective of Edmonton becoming a climate resilient City, and aligns with the objectives and actions outlined in the City Plan and the currently updated Community Energy Transition Strategy.

## ALTERNATIVES CONSIDERED

With the establishment of the District Energy Sharing System and Blatchford Renewable Energy (through Utility Bylaw 17943) by City Council and the construction of the first Energy Center in the community, Blatchford Renewable Energy is now connecting the first customers. To allow the growth of the Utility to connect future residents and businesses the design and construction of the Distribution Piping is necessary. The alternative would be to not connect these customers to the District Energy Sharing System, which would be contradictory to the Utility Bylaw.

## COST BENEFITS

The construction of the Distribution Piping System will allow the potential connection of approximately 250,000 square meter of development space to the District Energy Sharing System and provide about 32,000 kw of thermal energy, reducing significantly greenhouse gas emissions. These connections will in turn generate revenue for the Utility in terms of fees and ongoing rate revenue, which forms a key part of the Utility's financial model.

## KEY RISKS & MITIGATING STRATEGY

The key risk for this capital profile is the proper design and construction of the Distribution Piping System as part of the District Energy Sharing System in Blatchford. This risk is mitigated by professional project management oversight by qualified City of Edmonton project managers.

## RESOURCES

The work to design and construct the Distribution Piping System will be conducted by qualified consultants and contractors and will be managed by Blatchford Renewable Energy staff. No additional resource impact is anticipated.

## CONCLUSIONS AND RECOMMENDATIONS

This Capital Profile is needed for the design & construction of the Distribution Piping System as part of the District Energy Sharing System for the current development stages in Blatchford, including NAIT. It allows the potential connection of 250,000 m2 of development space & provides about 32,000 kw of thermal energy, significantly reducing greenhouse gas emissions. These connections will generate revenue for Blatchford Renewable Energy, which forms a key part of the Utility's financial model.

The recommendation is to approve the profile a total of \$ 8.65M over 2021, 2022 & 2023, for \$2.6M, \$4.85M, and \$1.2M respectively.

The work to design & construct the Distribution Piping System will be conducted by qualified consultants & contractors & will be managed by the Blatchford Branch.

## CHANGES TO APPROVED PROFILE

2023 Spring SCBA (#23-14, 3.3-1): Increase existing capital profile for the Distribution Piping System by \$1.94M with 30% of costs funded through the NRCan grant and 70% through self supported tax guaranteed debt.

2023 Spring SCBA (#23-14, 3.3-2): Adjust funding source to allocate NRCan grant funding to previously approved capital expenditures (30% of project costs) and reduce self-supported tax guaranteed debt (the original financing source).

# CAPITAL PROFILE REPORT

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 PROFILE NUMBER: **21-83-8384**  
 BRANCH: **Blatchford Renewable Energy Utility**

**FUNDED**  
 PROFILE TYPE: **Standalone**

## CAPITAL BUDGET AND FUNDING SOURCES (000's)

|                               |  | Prior Years | 2023  | 2024  | 2025  | 2026  | 2027 | 2028  | 2029 | 2030 | 2031 | Beyond 2031 | Total  |
|-------------------------------|--|-------------|-------|-------|-------|-------|------|-------|------|------|------|-------------|--------|
| APPROVED BUDGET               | Approved Budget                        |             |       |       |       |       |      |       |      |      |      |             |        |
|                               | Original Budget Approved               | -           | -     | -     | -     | -     | -    | -     | -    | -    | -    | -           | -      |
|                               | 2021 Cap Capital Budget Adj (one-off)  | 7,450       | 1,200 | -     | -     | -     | -    | -     | -    | -    | -    | -           | 8,650  |
|                               | 2021 Cap Carry Forward                 | -           | -     | -     | -     | -     | -    | -     | -    | -    | -    | -           | -      |
|                               | 2022 Cap Budget Request for Next Cycle | -           | 1,220 | 1,220 | 1,220 | 1,220 | -    | -     | -    | -    | -    | -           | 4,881  |
|                               | 2022 Cap Carry Forward                 | -5,804      | 5,804 | -     | -     | -     | -    | -     | -    | -    | -    | -           | -      |
|                               | 2023 Cap Council                       | -           | -     | -     | -     | -     | -    | 1,936 | -    | -    | -    | -           | 1,936  |
|                               | Current Approved Budget                | 1,646       | 8,224 | 1,220 | 1,220 | 1,220 | -    | 1,936 | -    | -    | -    | -           | 15,467 |
|                               | Approved Funding Sources               |             |       |       |       |       |      |       |      |      |      |             |        |
|                               | NRCan SREPs Grant - Fed                | -           | 2,467 | 366   | 366   | 366   | -    | 581   | -    | -    | -    | -           | 4,146  |
| REVISSED BUDGET (IF APPROVED) | Self Supporting-Tax Guaranteed         | 1,646       | 5,757 | 854   | 854   | 854   | -    | 1,355 | -    | -    | -    | -           | 11,321 |
|                               | Current Approved Funding Sources       | 1,646       | 8,224 | 1,220 | 1,220 | 1,220 | -    | 1,936 | -    | -    | -    | -           | 15,467 |

|                |                |   |   |   |   |   |   |   |   |   |   |   |   |
|----------------|----------------|---|---|---|---|---|---|---|---|---|---|---|---|
| BUDGET REQUEST | Budget Request | - | - | - | - | - | - | - | - | - | - | - | - |
|----------------|----------------|---|---|---|---|---|---|---|---|---|---|---|---|

|                               |                                |       |       |       |       |       |   |       |   |   |   |   |        |
|-------------------------------|--------------------------------|-------|-------|-------|-------|-------|---|-------|---|---|---|---|--------|
| REVISSED BUDGET (IF APPROVED) | Revised Budget (if Approved)   | 1,646 | 8,224 | 1,220 | 1,220 | 1,220 | - | 1,936 | - | - | - | - | 15,467 |
|                               | Requested Funding Source       |       |       |       |       |       |   |       |   |   |   |   |        |
|                               | NRCan SREPs Grant - Fed        | -     | 2,467 | 366   | 366   | 366   | - | 581   | - | - | - | - | 4,146  |
|                               | Self Supporting-Tax Guaranteed | 1,646 | 5,757 | 854   | 854   | 854   | - | 1,355 | - | - | - | - | 11,321 |
|                               | Requested Funding Source       | 1,646 | 8,224 | 1,220 | 1,220 | 1,220 | - | 1,936 | - | - | - | - | 15,467 |

## CAPITAL BUDGET BY ACTIVITY TYPE (000's)

|                               | Activity Type | Prior Years | 2023  | 2024  | 2025  | 2026  | 2027 | 2028  | 2029 | 2030 | 2031 | Beyond 2031 | Total  |
|-------------------------------|---------------|-------------|-------|-------|-------|-------|------|-------|------|------|------|-------------|--------|
| REVISSED BUDGET (IF APPROVED) | Construction  | 1,646       | 8,224 | 1,220 | 1,220 | 1,220 | -    | 1,936 | -    | -    | -    | -           | 15,467 |
|                               | Total         | 1,646       | 8,224 | 1,220 | 1,220 | 1,220 | -    | 1,936 | -    | -    | -    | -           | 15,467 |

## OPERATING IMPACT OF CAPITAL

Type of Impact:

| Branch:                | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Total Operating Impact | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |