

**CAPITAL PROFILE REPORT**

|                 |   |   |
|-----------------|---|---|
| PROFILE NAME:   | <b>DISTRICT ENERGY NETWORK STRATEGY AND DISTRICT ENERGY NODES</b> | <b>FUNDED</b>                               |
| PROFILE NUMBER: | <b>CM-83-0001</b>   | <b>PROFILE STAGE: Approved</b>              |
| DEPARTMENT:     | <b>Integrated Infrastructure Services</b>                         | <b>PROFILE TYPE: Composite</b>              |
| LEAD BRANCH:    | <b>Blatchford Redevelopment Office</b>                            | LEAD MANAGER: <b>Tom Lumsden</b>            |
| PROGRAM NAME:   |   | PARTNER MANAGER:                            |
| PARTNER:        |   | ESTIMATED START: <b>January, 2023</b>       |
| BUDGET CYCLE:   | <b>2023-2026</b>  | ESTIMATED COMPLETION: <b>December, 2026</b> |

**Service Category: Utilities****Major Initiative:**

|               |                |                              |               |
|---------------|----------------|------------------------------|---------------|
| <b>GROWTH</b> | <b>RENEWAL</b> | <b>PREVIOUSLY APPROVED:</b>  | <b>34,500</b> |
| <b>100</b>    |                | <b>BUDGET REQUEST:</b>       | <b>-</b>      |
|               |                | <b>TOTAL PROFILE BUDGET:</b> | <b>34,500</b> |

**PROFILE DESCRIPTION**

This profile would provide the funding to plan and design upgrades to Checkpoint 3 for District Energy Network Strategy and District Energy Nodes with funding from Tax Supported Debt. Edmonton's Community Energy Transition Strategy promotes the pathway of "renewable and resilient energy transition in Edmonton". This includes to "plan for and enable the development of community renewable energy projects and the expansion of a renewable district energy network". This profile lays out the immediate near-term opportunities for development of District Energy networks, aligned with the City's District Energy Strategy. District Energy nodes identified for this profile are the Downtown, River Crossing, Exhibition Lands, Heritage Valley and the Bonnie Doon development. Investment need and strategy is foreseeing the City funding and facilitating the initial development of District Energy nodes and then over time divesting them as assets to private companies/ utilities to only invest in new nodes in accordance with the Strategy.

**PROFILE BACKGROUND**

The profile identifies capital investments and operational impact for the build out requirements for the key district energy nodes beside Blatchford (Downtown, River Crossing, Exhibition Lands and Heritage Valley). It also identifies necessary design and operational support to implement the district energy strategy and the initial years of the operation of the Downtown District Energy Initiative until more buildings become connected. With the growth of the overall district energy portfolio in the City there will also be a need to increase staff contingency. Over the next budget cycle the goal is to introduce two or three new FTEs to the projects.

**PROFILE JUSTIFICATION**

The development of a city-wide low carbon district energy network is identified as a big win in Edmonton's Community Energy Strategy. Starting the development of these low carbon and renewable energy systems in the Blatchford development the City manifested the opportunity and importance of district energy as one of the key actions for climate adaptation and resilience. Design and construction on the Downtown District Energy Initiative is ongoing and further feasibility studies have started in the River Crossing Development and for the Bonnie Doon project. The District Energy Strategy has been developed outlining the pathway for the City to develop the city-wide network over the next decades. Overall expected GHG reduction goals for the full implemented district energy strategy is 240,000 tCO2 per year.

**STRATEGIC ALIGNMENT**

This profile is aligned with the goals of the City Plan and Edmonton's Community Energy Transition Strategy. Edmonton's Community Energy Transition Strategy promotes the pathway of "renewable and resilient energy transition in Edmonton". This includes to "plan for and enable the development of community renewable energy projects and the expansion of a renewable district energy network".

**ALTERNATIVES CONSIDERED**

The alternatives for these low or net zero carbon district energy system is business as usual: thermal and energy utility systems. The majority of current energy systems are leaving behind a significant larger carbon footprint and increasing costs. District energy system have various advantages due to the lower carbon footprint, longer term decoupling of fossil fuel costs, better climate adaptation criteria and increased customer comfort. However the challenges are that they are mostly compared to current fossil fuel utility systems which are more cost effective in the short run.

**COST BENEFITS**

Eventually these district energy systems are providing cost benefits by decoupling from fossil fuel costs and provide longer lasting resilient infrastructure.

**KEY RISKS & MITIGATING STRATEGY**

The recently completed city-wide district energy strategy provides opportunities and processes for the City to initially facilitate, invest, and later divest these district energy network utility assets. A roadmap was developed looking at feasibility studies, policy and planning instruments, and developing external funding opportunities to partner with private industry to bear the investment costs and risk ahead. The City is also actively identifying funding opportunities from other levels of government.

**RESOURCES**

Resourcing is included in accordance with the Project Development and Delivery Model (PDDM) utilized within the Integrated Infrastructure Services Department.

## CONCLUSIONS AND RECOMMENDATIONS

Following the goals and objectives of the Edmonton's Community Energy Transition Strategy, this project is recommended for approval until Checkpoint 3 in accordance with the Project Development and Delivery Model (PDDM) utilized within the Integrated Infrastructure Services Department.

# CAPITAL PROFILE REPORT

PROFILE NAME: **District Energy Network Strategy and District Energy Nodes**

**FUNDED**

PROFILE NUMBER: **CM-83-0001**

PROFILE TYPE: **Composite**

BRANCH: **Blatchford Redevelopment Office**

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

| APPROVED BUDGET          |   | Prior Years | 2022 | 2023  | 2024  | 2025   | 2026   | 2027 | 2028 | 2029 | 2030 | Beyond 2030 | Total  |
|--------------------------|---|-------------|------|-------|-------|--------|--------|------|------|------|------|-------------|--------|
|                          | Approved Budget                         |             |      |       |       |        |        |      |      |      |      |             |        |
|                          | Original Budget Approved                | -           | -    | -     | -     | -      | -      | -    | -    | -    | -    | -           | -      |
|                          | 2022 Cap Budget Request for Next Cycle  | -           | -    | 1,725 | 8,625 | 10,350 | 13,800 | -    | -    | -    | -    | -           | 34,500 |
|                          | <b>Current Approved Budget</b>          | -           | -    | 1,725 | 8,625 | 10,350 | 13,800 | -    | -    | -    | -    | -           | 34,500 |
| Approved Funding Sources |   |             |      |       |       |        |        |      |      |      |      |             |        |
|                          | Tax-Supported Debt                      | -           | -    | 1,725 | 8,625 | 10,350 | 13,800 | -    | -    | -    | -    | -           | 34,500 |
|                          | <b>Current Approved Funding Sources</b> | -           | -    | 1,725 | 8,625 | 10,350 | 13,800 | -    | -    | -    | -    | -           | 34,500 |

| BUDGET REQUEST |  | Prior Years | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | Beyond 2030 | Total |
|----------------|--|-------------|------|------|------|------|------|------|------|------|------|-------------|-------|
| Budget Request |  | -           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -           | -     |

| REVISED BUDGET (IF APPROVED) |                                 | Prior Years | 2022 | 2023  | 2024  | 2025   | 2026   | 2027 | 2028 | 2029 | 2030 | Beyond 2030 | Total  |
|------------------------------|---------------------------------|-------------|------|-------|-------|--------|--------|------|------|------|------|-------------|--------|
| Revised Budget (if Approved) |                                 | -           | -    | 1,725 | 8,625 | 10,350 | 13,800 | -    | -    | -    | -    | -           | 34,500 |
| Requested Funding Source     |                                 |             |      |       |       |        |        |      |      |      |      |             |        |
|                              | Tax-Supported Debt              | -           | -    | 1,725 | 8,625 | 10,350 | 13,800 | -    | -    | -    | -    | -           | 34,500 |
|                              | <b>Requested Funding Source</b> | -           | -    | 1,725 | 8,625 | 10,350 | 13,800 | -    | -    | -    | -    | -           | 34,500 |

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

| REVISED BUDGET (IF APPROVED) | Activity Type | Prior Years | 2022 | 2023  | 2024  | 2025   | 2026   | 2027 | 2028 | 2029 | 2030 | Beyond 2030 | Total  |
|------------------------------|---------------|-------------|------|-------|-------|--------|--------|------|------|------|------|-------------|--------|
|                              | Construction  | -           | -    | 75    | 6,563 | 7,875  | 11,738 | -    | -    | -    | -    | -           | 26,250 |
|                              | Design        | -           | -    | 1,650 | 2,063 | 2,475  | 2,063  | -    | -    | -    | -    | -           | 8,250  |
|                              | <b>Total</b>  | -           | -    | 1,725 | 8,625 | 10,350 | 13,800 | -    | -    | -    | -    | -           | 34,500 |

## OPERATING IMPACT OF CAPITAL

Type of Impact:

| Branch:                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                               | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE |
| <b>Total Operating Impact</b> | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |