
TO: Mayor Kogon and Members of Council

SUBMITTED BY: Andrew Fisher, Manager of Planning & Strategic Priorities

DATE: April 29, 2019

SUBJECT: Solar for Community Buildings – Stadium PV solar installation

ORIGIN: On April 30, 2018 Council passed the following motion:

*That Council direct staff to connect with the Cumberland Energy Authority to explore the possibility of having **the Town of Amherst be included in their application to the NS Department of Energy's Solar for Community Buildings Program**, and further to this that staff research the PACE Program.*

LEGISLATIVE AUTHORITY: Municipal Government Act (MGA), section 65 *The council may expend money required by the municipality for (ac) a system for the supply or distribution of electricity, gas, steam or other source of energy.*

RECOMMENDATION: That Council include the costs of Solar Photovoltaic (PV) Project Development, Installation, and Commissioning in the amount of \$256,491, plus applicable taxes, NSPI connection fees of approximately \$3,000, and a structural engineer's fees of approximately \$10,000 in the capital budget for 2019-20

BACKGROUND: In August 2018, the Clean Foundation and the NS Department of Energy awarded the Town's bid to install a solar PV system on the Stadium and sell electricity to NSPI through a 20-year Power Purchase Agreement. The Alternative Resource Energy Authority (AREA) in partnership with Thermo Dynamics Ltd. (TDL) developed the bid for the town, as well as, bids submitted by other municipal units including the Cumberland Energy Authority, Municipality of the District of Argyle, the Town of Yarmouth, and others. Under the agreement TDL is responsible for the design, installation, and commissioning of the system in conjunction with NSPI. The Town does not pay the full contract price until NSPI confirms that the system has achieved operation under the Power Purchase Agreement.

The total AC power output of the system will be 75 kW and cover approximately 33% of the roof. The attached Profit Projections are based on the details provided in the chart below. These projections take into account operating and maintenance costs, and include an estimated \$3,000 in connection cost, subject to NSPI's requirements that are site specific. \$6,000 is also included for removal of the system.

Total AC Power output	75 KW
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Estimated Annual Output	123,000 kWh
Total Installation Cost	\$256,491 + tax
Bid Price	24.65 cents/kWh
Total 20-yr revenue	\$550,918
Total Operational Costs	\$432,775
Total Net Profit over 20-years	\$118,143
Margin	27.3%

These projections do not include consideration for a roof structure analysis to be performed by a structural engineer. A conservative estimate to provide the analysis is \$10,000. Should the engineer's report identify significant alterations to the roof structure necessary to support the solar PV system, an estimated cost will be brought to Council for consideration.

This arrangement qualifies for alternative procurement as AREA offered the ability to submit bids at no up-front cost to the Town. Furthermore, AREA completed an RFP process and selected TDL as a solar PV system provider based their experience, expected costs, and ability to carry the risk and cost until the commercial operation is approved for multiple projects simultaneously. The combined purchase volume of multiple projects allows for premium equipment at a lower cost. Staff are not aware of any other entity that provide this type of arrangement.

Regarding warranties, the panels and racking have a 25-year warranty, and installation warranties of 2-years. The warranty period varies amongst different components within the system, but its generally 1-2 years. AREA have advised that typically with solar PV systems, any problems as likely to emerge within the first 2 years.

DISCUSSION: The Solar for Community Buildings program is a unique opportunity to sell green energy at a price subsidized by the Provincial Department of Energy. The program is currently offered for one additional year. Staff have had preliminary discussions with AREA to review and adjust unsuccessful bids from last year to resubmit them in 2019.

FINANCIAL IMPLICATIONS: Capital costs of \$256,491 (plus applicable tax), and approximately \$10,000 in additional engineering costs to evaluate the stadium roof structure. The engineering cost will reduce the projected profit margin by less than 1%.

COMMUNITY ENGAGEMENT: While to-date, no public engagement has been part of this initiative, there may be future educational and promotional opportunities upon installation of the system.

ENVIRONMENTAL IMPLICATIONS: Adoption of renewable energy reduces GHG emissions.

ALTERNATIVES:

- 1) Do not participate in the program.
- 2) Direct staff to select a solar PV system installer through the regular procurement process.
- 3) Direct staff to provide more information.

ATTACHMENTS:

1) Profit Projections Chart

Report prepared by: A. Fisher
Report and Financial approved by: