



DATE: May 11, 2022

TO: Mayor and Members of Council

FROM: Haiqing Xu, Deputy City Manager, Planning & Growth Management

RE: COMMUNICATION – Council, May 17, 2022

Report #21, Item #1
SUSTAINABILITY METRICS PROGRAM UPDATE FILE 22.4.3

1. Purpose

The purpose of this Communication is to inform Mayor and Members of Council on how solar panels and photovoltaics (PV) are recommended as a renewable energy technology through the Sustainability Metrics Program (SMP). The current Municipal Energy Plan (MEP) Revision will evaluate how solar panels, PVs and other alternative energy performance metrics can be used to contribute to the City's Greenhouse Gas (GHG) emission reduction targets. The recommendations from the MEP revision will be presented to Council for endorsement in Q1 2023.

2. Background

a. Energy and Heat Island Effects Sustainability Metrics

Solar and PV panels are types of renewable energy technologies. PV panels convert thermal energy into electricity, whereas solar panels convert solar radiation into heat. Renewable energy technologies are identified throughout the suite of metrics but are one of many tools that contribute to greater building efficiency and resilience. Nine of the fifty-two (52) metrics offered through the updated SMP contribute to creating more efficient buildings. City staff will continue to examine a minimum energy performance requirement to align with partner municipalities in order to achieve Vaughan's climate targets.

b. Municipal Energy Plan Revision

The City is currently updating the MEP to identify opportunities to reduce GHG emissions per capita by half of the 2013 levels by 2030 as identified by Action #4 of the 2019 Council Climate Emergency Declaration and to meet the target of net-zero emissions by 2050. The MEP is examining different energy alternatives needed to meet Council's targets for Vaughan, and the sustainability metrics are implementation tools that support these actions. In addition, the MEP Revision will examine the need to retrofit existing private and public buildings to improve energy efficiency.

3. Analysis

Private Development

At pre-consultation meetings (PACs) for development applications, applicants are advised of the SMP and of the requirement to submit a sustainability metrics scoring tool as part of a complete application. With Council's endorsement of the updated SMP and threshold scores, all new applications will be required to meet the updated bronze threshold scores outside of intensification areas, and silver threshold scores within intensification areas, once the updated web-form scoring tool comes into effect by Q1 2023. The discussion between City staff and applicant is an iterative process and opportunities to implement sustainable design features are assessed on a site-by-site basis.

For example, the following sustainable design features can be applied to low-rise industrial buildings with larger roof surfaces:

- solar or PV panels to reduce heating and cooling costs
- passive green or cool roof treatments to reduce heat island effect of buildings

Policy Planning and Special Programs (PPSP) staff will continue to coordinate with applicants and City staff to identify opportunities to implement sustainable design features throughout the development application process.

Public Development

In 2008, Council adopted the Corporate Green Building Policy that reflects the City's commitment to encouraging sustainable construction practices aligned with the Leadership in Energy and Environmental Design (LEED™) certification process. PPSP staff have been working collaboratively with the Infrastructure Delivery staff in Facilities Management to promote and implement energy efficient buildings and design following actions in Green Directions Vaughan, 2019 and the City-wide Urban Design Guidelines, 2018.

The City is building Carrville Community Centre & Library and Fire Hall 7-12 to meet CAGBC Net Zero Carbon certification. City staff are also retrofitting Fire Hall 7-1 to be a zero-carbon building by 2023. Solar or PV panels have not been implemented to this date on City projects, but staff are currently looking for implementation opportunities. To move this initiative forward, City staff will formalize the corporate green building policy.

4. Conclusion

As the form of development changes in the City of Vaughan, more attention to building efficiency is needed with respect to reducing and conserving energy, renewing the loss of thermal energy, or producing electricity. There are multiple opportunities through the development planning process to implement sustainable building design features. Solar and PV panels are renewable energy technologies that can conserve heat or produce electricity and contribute to sustainable community development.

The City of Vaughan is leading by example by:

- mandating LEED Gold™ certification or higher for all City buildings;
- endorsing the updated SMP and associated threshold scores as a mandatory requirement in the development review process;

- continuing to examine a minimum energy performance requirement as part of the SMP; and,
- revising the Municipal Energy Plan.

For more information, contact Ruth Rendon, Senior Environmental Planner, ext. 8104

Approved by

A handwritten signature in black ink, appearing to read 'Haiqing Xu', written in a cursive style.

Haiqing Xu
Deputy City Manager, Planning & Growth Management