



**Partners in
Project Green**

A Program of Toronto and Region Conservation Authority

Energy Leaders Consortium

GHG Reduction Program at Toronto Pearson

March 7, 2023

We respectfully acknowledge that we are situated on the Traditional Territories and Treaty Lands, in particular those of the Mississaugas of the Credit First Nation, as well as the Anishinaabe of the Williams Treaty First Nations, the Huron Wendat, the Haudenosaunee, and the Metis Nation.

As stewards of land and water resources within the Greater Toronto Region, Toronto and Region Conservation Authority appreciates and respects the history and diversity of the land and is grateful to have the opportunity to work and meet on this territory.



Additional Resources

- yrnature.ca/acknowledging_land
- edgeofthebush.ca
- native-land.ca
- Text 1-855-917-5263 with your City and Province to learn whose traditional territory you're on
(standard text messaging rates may apply)



Agenda

Time	Activity
2:30pm – 2:35pm	Welcoming Remarks & Introduction <i>from PPG</i>
2:40pm – 3:25pm	GTAA Presentation
3:25pm – 3:35pm	Travel to Central Utilities Plant
3:35pm – 4:25pm	Central Utilities Plant Tour – PPE is required
4:25pm – 4:35pm	Travel to GTAA Admin Building
4:35pm – 6:30pm	Networking and Recognition Event with EMC and CEC continued



Introduction



Welcome Julia!

- Julia Kole joins PPG as our Coordinator, Community Learning
- Over 8 years of experience working in non-profit environments supporting events, stakeholder relations and project management
- She has experience conducting energy audits and providing environmental consultation to community groups
- Julia will be supporting PPG's energy performance programs



Julia Kole

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Upcoming ELC Sessions

Date	Topic
April 20 @ 1:00pm	Educational Session – Decarbonizing Industry with Trane Technologies (Virtual)
May 11 @ 1:00pm	Member Roundtable – Trillium Health Presentation (Virtual)
June 15 @9:00am	Site Visit – Sheridan College Meeting & Tour (In-person)
July 13 @ 1:00pm	Educational Session – Scope 3 Carbon Accounting with CarbonZero (Virtual)
August TBD	Member Roundtable – Mother-Parkers (Virtual)

**Please contact Matt Brunette if you are interested in hosting an ELC Site Visits or presenting at a Member Roundtable this year



Updates and Reminders

- NRCan's [Green Industrial Facilities and Manufacturing Program](#)
 - Manufacturers are eligible for up to \$20 million
 - Track 1: Energy Efficiency Solutions (call for proposals open now, close **March 31, 2023**)
 - Track 2: Industrial Facility track (accepting proposals **Spring 2023**)
- Save on Energy's [Industrial Energy Efficiency Program](#)
 - Applications for current round of funding deadline: **March 15, 2023**
 - Application for final round of funding in 2023 deadline: **Aug 15, 2023**
- Free National Training initiative focused on a greener economy – [Quick Train Canada](#) with 18 courses targeting 10,000 people
 - Wide range of course, some have already concluded
- Region of Peel [Water Efficiency for Business](#)
 - Resource Hub with free water audits for eligible industrial facilities



Today's Presenter



Craig Rock

Manager of Energy and High Voltage Maintenance

Craig.rock@gtaa.com

- Responsible for starting and running GTAA's Energy Conservation Program from 2005 to 2012
- Returned to the Energy Conservation Program in 2020 and also runs the High Voltage Maintenance, and Utility Metering and Sub-Metering Maintenance Groups





GTAA Presentation

The background of the slide is a photograph of a server room. The left side of the image is overlaid with a semi-transparent blue filter. A diagonal line splits the image from the top right to the bottom left. On the right side, the server racks are visible in their natural colors, including a prominent red light on one of the units. The overall scene is a modern data center environment.

Energy Leaders

— □ Consortium

Mar 7, 2023

ELC/PPG RFP

Scope of Work **Greenhouse Gas Reduction Program** **at** **TORONTO PEARSON INTERNATIONAL AIRPORT**

GTAA Environmental Policy

New Environmental Policy released May of 2021

GHG Goals

- Reduce emissions by 45% from 2010 levels by 2030
- Net zero GHG by no later than 2050

Energy Goals

- 100% clean energy use by

Introduction

The GTAA was looking at procuring contracted work for infrastructure projects. This work is meant to reduce energy consumption and increase on-site energy production to reduce both Scope 1 and Scope 2 GHG emissions associated with airport activities and operations. The Scope 3 emissions, were not included within the scope of reductions associated with this Work.

GHG Emissions

Scope 1 emissions are direct emissions from owned or controlled sources.

Examples include:

- CoGen turbines,
- Natural gas or fuel oil fired boilers
- Stationary backup generators
- Mobile vehicles owned and operated by the GTAA
- Other sources of stationary combustion or methane and carbon dioxide release by assets

Scope 2 emissions are indirect emissions from the generation of purchased electricity.

- Electricity purchased from OPG used for such activities as: lighting, heating/cooling, baggage belts, information systems, ground power, pre-conditioned air (PCA), etc.
- **Scope 3 emissions are indirect emissions relating to uncontrolled, unowned assets.**
- Contractor or tenant activities
- Employee business travel and commuting
- Downstream waste disposal emissions
- Upstream emissions related to manufacture of purchased products within the GTAA's supply chain

Project Objectives

- Demonstrated improvement of energy conservation and efficiency, including electrical energy and/or heating energy
- Quantification and documentation of potential energy improvements and resulting greenhouse gas reductions,
- Demonstrated commitment to clean and renewable energy production (or purchasing) where possible for each proposed solution.
- Demonstrated science-based potential greenhouse gas reductions and associated reduction timelines through either Scope 1 or Scope 2 emissions
- Demonstrated ability to deliver solutions that meet the technical and business requirements of a large airport, considering solutions that involve previous and new, innovative solutions.
- Leading edge solutions and designs catered to the unique features and geographical footprint or the Airport are encouraged.
- Proposed alternative financing for capital projects as part of proposed delivery on each phase of work detailed within the SOW.

Financing

The GTAA is seeking innovative solutions for alternative financing structures for each of these three capital works projects. Successful proponents must demonstrate a thorough knowledge of provincial and federal granting bodies for green infrastructure development, such as the Canada Infrastructure Bank and IESO energy incentives.

Alternative financing models based on energy savings or other long-term structured financing for capital expenditures related to climate change, greenhouse gas reduction, or energy conservation projects must also be suggested where applicable for any of the three scopes of services described within this SOW.

Proponents shall have demonstrated experience delivering on capital expense projects using alternative financing models, and the knowledge and experience to help the GTAA navigate requirements for such programs.

Scope of Services

- **Scope of Service 1: Lighting Decarbonization**
- **Scope of Service 2: Clean Heat Energy Services**
- **Scope of Service 3: On-Site Solar PV and Electric Vehicle Charging**

Partners Selected

- . **AECOM**
- . **Alectra**
- . **Enwave**

Scope of Work 1 Description

Lighting decarbonization for:

- T1 Parking Facility
- T3 Parking Facility
- Viscount Parking Facility

Methodology

- Determining existing lighting equipment and lighting controls.
- Establishing a baseline energy consumption for existing system.
- Propose of new lighting and control technologies to determine the potential energy savings and GHG reductions.

Scope of Work 2 Description

Clean Heat Energy System:

Served Buildings (In Scope)

- Cargo 1 340,000 sq ft
- Cargo 2 290,000
- Cargo 3 156,900
- EMB 16,860
- Concourse T (Infield) 217,500
- 3 Bay Hangar 296,535

Potential Additional Buildings

- Sky Service Hangar 103,000
- Sky Service Lounge 16,300
- NAV CAN ATCT 45,000
- Gategourmet Facility 228,500
- ACC Facility 69,800
- Central De-Icing Facility 13,000

Scope of Work 2 Opportunities

Decentralized

- Morrison & Hershfield BAU – Electric boiler + NG boiler backup
- High performance decentralized – ASHPs + NG boiler backup

Centralized

- Central heating and cooling plant with ASHPs, electric peaking boiler and NG backup
- Same as 2.a. but with sewer water heat recovery (SHR) added
- Same as 2.a. but with GSHP added

Scope of Work 3 Description

EV Charging Infrastructure

Proposed approach to network development:

- Identify priorities and objectives
- Development of EV Network Strategy
- Agree and design short-term option

PV Solar

4 buildings – FedEx (primary focus) and 3 parking structures.

- FedEx
- Structural provisions; original system designed for 400 kW, 250 kW DC more realistic 300 MWh/yr

Parking Structures

- Mounting options: penthouse roof, superstructure, carports, canopies
- Structural and operational considerations

Questions? Discussion



GTAA Central Utilities Plant Tour



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Thank You!