

Clean Air Council Corporate Energy Managers
Meeting Notes
October 10th, 2019



1. **Khaled Abu-Eseifan & Vista, City of Mississauga’s Experience with Business Intelligence Tool to Support Energy Budgeting Provide a summary of what the goal of the presentation is**

Vesta Solutions is a data analytics company specialized in report automation, data visualization and advanced analytics. Vesta Solutions helps companies extract insights out of data, so they improve their decision-making process. The way they do that is by looking at the business need. Once established, they identify data sources, build the analytical model, run it to obtain insights and track outcomes.

The purpose of the application is to use the utilities billing data and other criteria imposed by the business to create the budget for utilities – the forecast. The Application includes three main sections: inputs, adjustments, and outputs/reports and two processing sections: run calendar and run the main reports. The application runs a process called “calendar normalization,” where both consumption and amounts are calculated per month. The application tracks the correlation between the weather and consumption using the CDD and HDD. The application allows for adjustments for future projects: new building, extensions, retrofitting, etc. The outcomes of this application are various reports on Budget; Forecast; Variance analysis; Reporting at the granular level.

Q: Are GHG emissions incorporated in the dashboard?

A: The purpose of the software is for energy budgeting and not for GHG emissions. Tracking, however, based on the outcomes of the software analysis for budgeting, can easily be converted to GHG emissions, but it isn’t done within the software.

1. **Dejan Skoric, City of Toronto, Recoverable Debt Financing Model & Mount Dennis Net Zero Emission Building**

Toronto just recently passed a Climate Emergency and increased its GHG reduction target to be net zero emissions by 2050.

The City used to have an energy efficiency revolving fund but that fund was moved towards a recoverable debt financing model. That recoverable debt model has been used to finance energy efficiency for the City and its Agencies, Boards and Commissions through a program called the Sustainable Energy Plan Financing Program. In 2018 the City approved the expansion of that program to include academic, social, healthcare, industrial, and commercial sectors, including privately-owned buildings and condominium buildings located in the city of Toronto to better align the program with TransformTO. This approval will have no immediate financial impact as the rate charged to all participants in the Sustainable Energy Plan Financing (SEPF) program is the City's cost of borrowing.

Since 2013, the total participation in the SEPF program stands at $53 Million, including projects with approved upcoming scheduled disbursements. $35.2 Million of the total participation consists of one loan to Toronto Community Housing Corporation (TCHC) to perform deep energy retrofits in nine of their buildings. In conjunction with a $28.4 million grant from the Province of Ontario, TCHC was able to undertake a $63.6 Million energy retrofit, which reduced its state of good repair backlog by $41 Million. The remaining participation is comprised of a $7.2 million loan to the YMCA and various projects for City agencies, corporations, divisions and community-based entities (including not-for-profits).

The eligibility of energy efficiency paybacks that is eligible for the financing has been moved to the lifecycle of measure or 20-year payback.

The initial focus during the first year of this expansion has been education to newly eligible participants. For example, 2.5% is better than a bank provides (approx. 5%), so that provides a better rationale to move them towards Tier 2 or 3 of the Toronto Green Standard.

Q: How are you handling default risk?

A: The City has not had any issues with recoverability on any of the loans in the program to date. Further, the SEPF program developed a process for monitoring loan repayments, which also defines the actions to take in the event a loan is in arrears. It is not expected that newly qualified borrowers will significantly affect the risk profile of the Sustainable Energy Plan Financing program. Under the current SEPF program, arms-length applicants undergo a financial review through Corporate Finance to assess the risk of repayment. Under the amended program eligibility criteria, the financial review process will remain unchanged, and Corporate Finance will perform the same risk assessment of new applicants.

Q: How do you address the differences between avoided costs and cost savings with the participants in the program?

A: So they reduced their energy use, but as a result of energy prices, there is an increase in energy costs. The focus is on avoided costs, and the expectations and communications speak to energy reductions.

Q: How do you control for after getting the money that they will comply with GHG reduction?

A: We are building ways to keep them honest – trying not to use the stick but incentivize to do better – but we still need to work on a solution.

Q: How many people are the energy staff dealing with RD?

A: A few senior engineers are involved in the technical feasibility review and a business case analysis to determine if the proposed project can repay the principal loan and interest with the projected energy savings. While there are a number of staff involved in the program it isn’t their full time job it is for their review of applications.

**Mount Dennis Childcare: The City of Toronto's first Net Zero Facility**

The Request for Proposal (RFP) for Architect asked to specify fo a Net Zero Building, incorporating Passive design principles, Carbon Embodied Solutions, and Net-zero Energy. The RFP required that design meets the CaGBC’s Zero Carbon Standard and have a third-party M&V.

The building can adapt to changing conditions and to maintain or regain functionality and vitality in the face of stress or disturbance. Its resilience features include a back-up generator, infiltrate rainwater on-site, permeable landscaping, and low flood risk.

Mount Dennis 2026 zero-emissions building overview:

* 100% electric
* Low embedded carbon building
* On-site renewables
* Incorporate Passive House/Air Tightness/Vapor Barrier/Insulation
* Added resilience (to avoid ice storm effects) + emergency back power
* Shading

Q: How was it funded?

A: It was funded using a lifecycle cost approach to bring together the capital and operating costs. The City did receive some funds from Metrolinx (as a result of the old daycare being moved to accommodate the Eglington Cross Town).

1. **Kathryn Wilson and Ian Jarvis, Mayors’ Megawatt Challenge – A Program of Climate Challenge Network: Practical Pathways to Net-Zero Municipal Buildings.**

Mayors’ Megawatt Challenge was launched in 2003 in the City of Mississauga. The 2019 Climate Challenge Program goal is rapid scaling up of reductions in emissions caused by buildings. The four pillars are energy management, knowledge, peer networking, and recognition of leaders.

The proposed steps of this challenge are:

* Step 1 - Demand Reduction (Energy Efficiency)
* Step 2 – Advanced Heat Recovery
* Step 3 – Renewables
* Step 4 – Align with Asset Management
1. **Corporate GDS Discussion**
* Many municipalities have a Corporate Green Development Standard (CGDS) in place. Most often that CGDS is LEED Silver. Those standards have not been updated in quite some time, and many municipalities are in the process of updating their Corporate Green Development Standard.
* The direction that most municipalities are planning for their update is to head as close to net-zero emissions as possible. The intention is to head as close to net-zero emissions as possible and base the business case on a lifecycle cost analysis.
* The challenge is that the procurement process needs to be able to accommodate the net-zero emission goal. Payback policies need to be updated to look at lifecycle costing rather than shorter paybacks. Some municipalities indicated that their payback policy is between 5 – 10 years which is undermining the deeper retrofits that need to occur for their facilities.
* Some municipalities are exploring options to bring in the Social Costs of Carbon (rather than just the carbon price of 20$ a tonne) into their business case. Ex. Burlington
1. **Next Steps and To Dos from Municipal Energy Managers COP Workshop**
* Corporate Green Development Standard webinars/working group to work collaboratively on advancing the standard. Integrating energy management and asset management. Ex. Caledon has a policy requirement where the Energy Team needs to be consulted when assets are being renewed/updated. In Simcoe County, all capital projects have to be reviewed by Energy Team.
* Learning more about Building Automation Systems (Brampton has some good experience on this).
* Benchmarking facilities across jurisdictions to better inform energy performance based on actual performance rather than just energy efficiency measures estimates. Which are the best performing buildings, and what are they doing right. Which are the poorest performers so that they can be prioritized for improvements.
* More examples and learnings from other net-zero emission buildings (particularly municipal buildings). Net Zero emissions building training/toolkit/examples/issues
* Interdepartmental engagement strategies and municipal recognition efforts to engage municipal staff and increase awareness.
* How to use thermal comfort issues to drive energy efficiency?
* Building into the business case how much it will cost to retrofit building in 10 – 15 years.
* Low carbon technologies of interest include: geothermal, heat pumps, solar walls, building envelope upgrades, prefab building envelope upgrades, sharing of energy efficiency measures across the network, operational efficiency efforts and their results, challenges and maintenance.
* Comparison across the network on energy efficiency efforts such as what is undertaken in the US through their [***2019 State Energy Efficiency Scorecard***](https://www2.aceee.org/e/310911/research-report-u1908/dy1n6x/426341247?h=slTiyrx99gO-aP5_eFz22Z0JptrISXn_LV2zXjLlU8c) **(**[**link**](https://aceee.org/research-report/u1908)**) and what has been done by** [**Efficiency Canada**](https://www.scorecard.efficiencycanada.org/) **at the provincial level (**[**link**](https://www.scorecard.efficiencycanada.org/)**)**
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