SARC is Town?s biggest energy consumer as Aurora looks towards Net Zero emissions

The SARC in Aurora's northeast is the biggest consumer of energy when it comes to municipal facilities, according to a report before Council.

The statistic comes as the Town continues its efforts towards net-zero Greenhouse Gas (GHC) emissions by 2050.

In 2022, the SARC's energy consumption was 7,777,000 kilowatt hours, down from the benchmark of 8,411,000 measured in 2018. While it's a sign that the Town is moving in a positive direction towards its goal, there is still much to do, according to Natalie Kehle, Energy and Climate Change Analyst for the Town of Aurora.

?The 2024 Energy Conservation and Demand Management Plan (ECDMP) sets ambitious GHC reduction targets from Town operations for the short, medium and long-term, initiating a vision of net-zero by 2050,? said Kehle in a report presented to Council this month.

?The overall goal in the 2019 ECDMP was to reduce electricity consumption by 10.5 per cent, natural gas consumption by 9.7 per cent, and GHG emissions by 15.9 per cent from the 2018 baseline by the end of 2023. In that timeframe, the Town decreased electricity consumption by 2 per cent and natural gas consumption by 27 per cent. This resulted in an overall reduction in GHG emissions of 20 per cent, surpassing the goal of 16 per cent. Several factors impacted energy consumption during this time: COVID-19 facility closures and re-opening, weather impacting heating and cooling demand, acquisition of new Town facilities (Yonge Street properties and Sports Dome), major construction at Town facilities (Aurora Cultural Centre and the Library) and impacts from energy conservation measures.?

Looking towards the 2050 goal, Kehle's report recommends several measures in the short- and medium-term.

Short term goals recommended to be accomplished by 2030 include retrofitting remaining lights in municipal facilities to LED, complete converting water fixtures to low-flow, install pool covers at recreation centres, HVAC upgrades at the Aurora Public Library and Seniors' Centre, the continued ?greening? of the municipal vehicle fleet, and possible opportunities to change over sports field lights to LED.

Medium-term goals include a switch-over to low carbon fuels, electrification of equipment and building systems, on-site renewable energy systems to offset energy use, and the potential purchase of carbon offsets to meet targets.

Energy targets for the short-term goals include reducing electricity consumption by 8 per cent, natural gas by 11 per cent, propane by 100 per cent, ethanol by 10 per cent, biodiesel by 8 per cent, and the overall reduction of utility costs by 8 per cent.

?If the proposed 2024 Energy Conservation and Demand Management Plan is endorsed by Council, the proposed total of $3,943,519 in capital and $22,000 in operating costs will be considered as part of the development of the 2025 budget,? said Kehle. ?Of note, the Town's current 2024 10-year capital plan does already include a portion of these proposed initiatives.?

The devil was, however, in the details for local lawmakers when the report was presented Council at this month's Committee of the Whole meeting.

Ward 6 Councillor Harold Kim, for instance, said he was bolstered by the cost-savings in the report but questioned some of the methods, including the continued installation of LED lighting.

Looking back on when the Town began the process of converting to LED lighting in 2016, Councillor Kim said the cost-savings originally estimated by the measure didn't materialize.

?I am encouraged but also wary,? he said.

Ward 3 Councillor Wendy Gaertner also expressed concern over the ?tremendous? energy consumption at the SARC, which offers two ice pads, a pool, and, in the coming months, a gymnasium that is presently under construction.

?30 per cent of the total carbon of the entire Town is the SARC, which I think greater than 50 per cent of the building component,? said staff. ?The SARC is one building which will have the detailed feasibility study completed on it to understand a pathway to decarbonize the SARC in particular because that is such a major component.?

Energy consumption at the Joint Operations Centre (JOC) on Industrial Parkway North also caught Ward 6 Councillor John Gallo's eye as the building was built to LEED Gold standard when it comes to emissions and environmental impact.

?We went above and beyond and built it to LEED standard,? he said, questioning whether the total consumption could be broken up into how much is used by the administrative offices there versus other amenities on site. ?Considering the fact we spent all that extra money during the capital project to build it to a higher standard, we would expect the results on an energy level to be much better.?

Staff said they would try to break it down to understand each of the systems and how much they consume.

?I was quite shocked to see the JOC on the list (of recommendations) with?almost $6 million in spending [on] a relatively new building,? Councillor Gallo continued, drawing particular attention to HVAC systems and other projects to improve the $35 million facility.

?It's a situation we're encountering fairly regularly,? said staff. ?The industry standard over the past number of years is that heating for space heating and domestic hot water is typically through natural gas and natural gas is the largest contributor [for greenhouse gases] in all of the buildings and a large contributor to carbon emissions for the Town. Certainly, we recognize that it is a fairly new facility and designed fairly recently, but there are still significant systems consuming natural gas and those primary measures are to electrify or decarbonize those systems, which is why there is a big investment required.?

By Brock Weir