

# **Staff Report – Greater Sudbury Community Energy and Emissions Plan (CEEP)**

## **Purpose**

This report responds to the direction by the City of Greater Sudbury to:

- a) prepare a Community Energy and Emissions Plan (CEEP) that includes a framework for its implementation (Resolution CC2017-173);
- b) set a target for the CEEP of net zero greenhouse gas (GHG) emissions by 2050 (CC2019-151, in part); and,
- c) describe potential approaches for collaborating with reThink Green (CC2019-255).

## **Background**

Global GHG are reaching record levels and show no sign of peaking. These emissions, which are mainly due to human activities, are widely held by climate scientists to be the main cause of increases in temperatures world-wide. The average global temperature for 2015-2019 is on track to be the warmest of any equivalent period on record. Increases in temperature in turn lead to an accelerating sea level rise, changes in precipitation patterns, increases in the frequency and duration of droughts and heat waves, more intense hurricanes and lead to many ecological and social impacts. Growing climate impacts increase the risk of crossing critical tipping points. A recent report entitled “[United in Science](#)”, prepared by the leading climate science organizations, highlights the urgency of fundamental socio-economic transformation in key sectors such as land use and energy in order to avert dangerous global temperature increase with potentially irreversible impacts.

Worldwide, governments at all levels are committing to reducing GHG emissions. Some have gone a step further, declaring that they will achieve net zero GHG emissions by 2050. Honouring these commitments will require facing two important challenges:

- 1) replacing current carbon-intensive energy sources (i.e., fossil fuel) with low- or zero-carbon alternatives that are secure, cost efficient, and reliable over the long-term and,
- 2) continuing to meet people's lifestyle and standard of living expectations while achieving overall GHG emission reductions.

Municipalities are thought to be in direct or indirect control of 70% of global GHG emissions. As such, municipalities and their representative communities are best positioned to be climate action champions. In Canada, many municipalities are facing the energy and associated GHG emission challenges through the development of CEEPS. These Plans document local priorities on how energy should be generated, delivered and used in the community now and into the future in ways that reduce or eliminate GHG emissions.

## **Benefits of a CEEP**

CEEPs can benefit municipalities in multiple ways. As stated in the in document [‘Advancing Integrated Community Energy Planning in Ontario: a primer’](#) (Quest, 2013), key benefits of a CEEP include:

- “Generate economic development opportunities and investment;
- Secure energy reliability, resiliency and diversity;
- Reduce environmental impacts, including greenhouse gas emissions;
- Use energy more efficiently while providing better energy services; and,
- Set a local vision for energy.”

## **Developing Greater Sudbury’s CEEP**

Greater Sudbury’s Community Energy and Emissions Plan began in June of 2017 when Council directed staff to apply for federal and provincial funding for the CEEP’s development. Funding was secured from the Federation of Canadian Municipalities (\$175,000) and from Ontario’s Municipal Energy Program (\$61,000). The City is contributing 8% of the funds (\$20,000) through EarthCare Sudbury’s operating budget. Council has maintained its support of the Plan through the 2018 and 2019 budgets.

Local stakeholders with an energy interest, including Greater Sudbury Utilities, Hydro One, Enbridge Inc., Vale, Sudbury Integrated Nickel Operations (a Glencore company), Sudbury & District Home Builders’ Association, reThink Green, four local school boards, post-secondary institutions and many others, were assembled in the fall of 2017 as the Stakeholder Working Group to assist with Plan preparation. A qualified consulting firm was retained in early 2018 to lead the CEEP’s preparation, including the required modelling and public engagement components. CEEP development was ongoing from early 2018 to early fall of 2019 and involved the comprehensive collection, review and analysis of energy-related data, energy modelling, and development and assessment of future energy scenarios.

On May 28, 2019 City Council re-emphasized the importance of the Climate Change priority it had set in its Strategic Plan by passing Resolution CC2019-151, as follows:

“WHEREAS the UN Intergovernmental Panel on Climate Change ‘Global Warming of 1.5 °C’ report states that we have less than 12 years to avert the worst impacts of climate change and identifies cities and urban areas as one of four critical global systems that can accelerate and upscale climate action;

AND WHEREAS cities around Canada and the world are taking the lead on acting on climate change;

AND WHEREAS Greater Sudbury is a member of the Federation of Canadian Municipalities’ Partners for Climate Protection program, and a member of the Federation of Canadian Municipalities which adopted a resolution in 2016 recognizing the need to pursue efforts to limit global temperature increases to 1.5°C;

AND WHEREAS Greater Sudbury will be completing its Community Energy and Emissions Plan and undertaking its Climate Change Adaptation Plan in 2019;

AND WHEREAS Sudbury has received international recognition for achievements in regreening and municipal energy retrofits, and is making important progress in areas such as sustainable transportation that will assist in meeting carbon reduction goals;

AND WHEREAS there are significant economic opportunities if Greater Sudbury were to become a leader on climate change mitigation, adaptation and technology in Northern Ontario;

AND WHEREAS Greater Sudbury is already experiencing large and rising costs and risks from climate change impacts such as extreme weather events, flooding and forest fires;

AND WHEREAS as of February 22, 2019, 288 Municipal and City Councils in Canada have declared a climate emergency;

AND WHEREAS climate change solutions not only reduce carbon output, but they also offer multiple benefits including improved health and air quality, greater community resilience, economic development and reduced costs;

THEREFORE BE IT RESOLVED that the City of Greater Sudbury officially declare a climate emergency to name and deepen our commitment to protecting our economy, our eco systems, and our community from climate change;

BE IT FURTHER RESOLVED THAT the City of Greater Sudbury reaffirms action on climate change as a strategic priority;

BE IT FURTHER RESOLVED THAT the City of Greater Sudbury direct staff to bring a report to City Council for its consideration before the end of 2019 that describes an approach for creating a Climate Change Adaptation & Mitigation Plan that includes adaptation or mitigation measures including, but not limited to:

- a) The reduction of municipal carbon emissions including the identification of specific targets and, ultimately, net zero carbon emissions by 2050;
- b) Policy choices that increase the proportion of residents that can choose active transportation modes or public transit for their daily needs;
- c) Operating standards for municipal facilities and technical specifications for municipal construction contracts that reduce carbon pollution;
- d) The development of measurement and reporting systems for energy utilization and carbon reduction to inform policy and budgeting choices;
- e) Collaboration with other governments, institutions and industry associations to improve standards and protocols that can positively address climate adaptation and mitigation;
- f) The potential to create an advisory committee that provides guidance and support for the City's efforts to respond to the climate emergency;
- g) A Business Case for consideration as part of the 2020 Budget that secures the resources required to develop the Plan."

Items b) to f) of the resolution will be addressed during the implementation phase of the CEEP. The target set by Council of net zero GHG emissions by 2050 was used as a basis for developing and modelling a future energy scenario and for developing the CEEP implementation framework that outlines the actions necessary to meet the target. A desired target of 80% reduction of GHG emissions (2016 base year) by 2050 was also expressed by the public during the engagement sessions and is used in the draft CEEP for comparison.

### **Key Points of Greater Sudbury's CEEP**

A draft CEEP has been prepared (see attachment). The CEEP uses energy, emissions, land-use, and financial modelling to determine the community-wide efforts required to meet the target of net-zero greenhouse gas emissions by 2050, as set by Council in its recent declaration of a climate emergency for Greater Sudbury. Recommended actions required to meet the target are discussed under 18 goals in 8 strategy sectors:

1. Compact, complete communities;
2. Energy efficient buildings;
3. Water, wastewater, and solid waste;
4. Low-carbon transportation;
5. Industrial efficiency;

6. Local clean energy generation;
7. Low-carbon energy procurement; and,
8. Carbon sequestration.

The high-level financial analysis reveals that CEEP implementation requires major upfront investments by the City, public and non-profit institutions, residents, and the private sector. However, energy savings, operations and maintenance savings, and avoided carbon taxes far outweigh the costs, and will therefore create significant economic value for the community over the long-term. Costs incurred on high-emitting fuels and activities decline as the CEEP actions are implemented. Energy costs decrease overall and go increasingly toward clean, renewable energy sources. Almost all CEEP actions save money while reducing emissions and create substantial new employment opportunities.

The CEEP also includes three appendices:

- Greater Sudbury CEEP – Implementation Framework;
- Greater Sudbury Electric Vehicle Study report; and,
- Greater Sudbury CEEP – Engagement Summary.

It is anticipated that opportunities for community input on the draft CEEP will be offered through a stakeholder and public engagement session to be set for early December. As with other phases of the CEEP, the City's 'Over To You' engagement platform will be used to solicit citizen input on the draft CEEP starting in mid-November. A final CEEP will be prepared and brought to Council for its consideration in 2020.

## **Next Steps – CEEP Implementation**

### **Dealing with Uncertainties**

The CEEP's model and implementation framework is based on assumptions, which may be perfectly valid today but not so in 10 years, let alone 30 years. The longer the timeframe, the greater the influence of uncertainty on factors determining future realities. In a recent [white paper](#), the World Economic Forum contrasts two narratives used to explain the evolving energy system. The Gradual Transition narrative is that the world of tomorrow will look roughly the same as that of today. Gradual scenarios extrapolate current patterns of policy, industry, consumption and investment and imply considerable inertia in the global energy system. The Rapid Transition narrative is that new energy technologies are rapidly supplying all the growth in energy demand, leading to peak fossil fuel demand in the 2020s. Rapid scenarios anticipate that new

technologies and policies will reshape markets, business models and patterns of consumption leading to a low-carbon economy while creating considerable economic and social benefits. The white paper concludes that "at the time of writing in 2019, it is not yet clear which narrative is likely to prevail." Forecasting systemic change is difficult to predict beyond 10 years with any accuracy due to developments in three key areas: technology, policy and society. These three areas are central to the energy transition.

Given all of the inherent uncertainties, especially over a 30-year timeframe, the approach recommended by staff is to adopt an incremental approach to the CEEP and its implementation. As such, the CEEP will be reviewed and updated on a 5-year basis. Its model will be applied every five years to ascertain whether the CEEP objectives are being attained and, if not, determine where areas of additional focus should lie. Staff intend to develop and present to Council a CEEP Implementation Strategy – Phase One in 2020 that would outline actions to be undertaken in the first 5 years of CEEP implementation. Phase One of the Strategy will address items b) to f) of Resolution CC2019-151.

### **Implementation Coordination and Stakeholder Participation**

Attaining Council's ultimate target of net zero carbon emissions by 2050 will be very challenging. Required actions will necessitate substantial commitments in time, effort and resources from many community stakeholders. Close collaboration between City divisions and between the City and community stakeholders will be critical. For over two decades, EarthCare Sudbury has been working with various municipal divisions, with community stakeholders, and with the public on sustainability and climate change initiatives. As such, it is well-positioned to initially play a central coordinating role in the CEEP implementation. The Implementation Strategy will include a proposed governance model for coordinating CEEP implementation, presumably a form of coordinating steering group supplemented by several sector- or technology-specific working groups. The steering group may be administered by the City or may be community-based like the Greater Sudbury Food Policy Council. Consultation with local stakeholders will inform the preferred CEEP implementation coordination approach to be adopted.

EarthCare Sudbury will be able to fulfill a coordinating role for the implementation of the CEEP within its current operating budget. Many of the anticipated actions, such as hosting meetings and workshops for stakeholders, hosting broad and specific community outreach projects on sustainability themes, community engagement through various channels, including social media, and reporting to the community are either currently being undertaken or could be undertaken by the City's EarthCare Sudbury Program and the City's Communications & Community Engagement Division

within existing operating budgets. EarthCare Sudbury's nine sustainability focus areas allow considerable flexibility in budget allocation in any given year(s).

Many stakeholders will play key roles either in overall coordination or within specific sectors. For example, Greater Sudbury Utilities will continue to be a key CEEP partner during its implementation phase. GSU's many years of experience in energy delivery and conservation as well as in-depth knowledge of the local electricity system will help ensure the success of the CEEP's implementation. As another example, the Electric Vehicle Society, Greater Sudbury Chapter, which has been integral to the CEEP's development, will be pivotal in advancing EV actions locally.

Local non-government organizations will also have important roles. Rainbow Routes, for example, has been active in planning and building the infrastructure and programs that encourage active transportation. Coalition for a Liveable Sudbury has developed a number of projects and programs that help support sustainability and GHG reductions locally.

### **Resolution CC2019-255**

On August 13, 2019 City Council passed Resolution CC2019-255, as follows:

"WHEREAS Climate Change is a strategic priority of City of Greater Sudbury Council;

AND WHEREAS a number of City staff are developing a variety of approaches for inclusion in 2020 work plans to address Council's desired outcomes;

AND WHEREAS reThink Green is an organization with valuable resources, relationships with other organizations and experience that can support Greater Sudbury Council's desired outcomes for climate change;

THEREFORE BE IT RESOLVED that the City of Greater Sudbury directs staff to prepare a report no later than the fourth quarter of 2019 describing potential approaches for collaborating with reThink Green, with business cases incorporated in the 2020 Budget as appropriate, for Council's consideration."

reThink Green is a non-governmental organization with a sustainability focus that has experienced considerable expansion locally since it was established in 2007. reThink Green has been a stakeholder in the development of the CEEP. This organization, which is an EarthCare Sudbury partner for sustainability, is demonstrating positive change through programs like its member-funded Green Economy North program that works collaboratively with several local businesses and institutional partners in achieving measurable GHG reductions. Through this program, reThink Green provides advice to members on how to reduce energy and GHG emissions, helps members track emissions,

and celebrates member successes in emissions reductions through a website, annual reporting and an annual gathering. This self-funding program is highly encouraged to continue as it will serve an important role in implementing the CEEP within the sectors represented by the membership.

In fulfillment of the resolution above, staff propose the following approaches for expanding its collaboration with reThink Green:

- The City of Greater Sudbury, through its EarthCare Sudbury program and programs from other City divisions, will continue to work jointly with reThink Green on local sustainability efforts, such as promoting the Commuter Challenge, hosting booths at Green Expo, Earth Festival, and many other community-based initiatives that will help implement the CEEP at the citizen level.
- Through the EarthCare Sudbury program, the City of Greater Sudbury and the broader group of community stakeholders can help promote Green Economy North and grow its membership to ensure financial self-sufficiency.
- Transportation and Innovation Services at the City has offered to retain reThink Green to administer its ridesharing system to promote active transportation, which would fulfill an important role in helping to reduce GHG emissions.
- reThink Green will be invited to participate in the CEEP's coordinating steering group and to participate in the development of the CEEP Implementation Strategy – Phase One.

Additional opportunities for collaboration between the City and reThink Green, as well as other community stakeholders, will no doubt arise as CEEP implementation gets underway. The CEEP Implementation Strategy will maintain flexibility to be able to adapt and respond to these opportunities as they evolve and change with the passage of time.



## **Conclusion / Recommendations**

A draft Greater Sudbury Community Energy and Emissions Plan, which assesses the local energy system and GHG emissions and profiles, has now been prepared. The CEEP models three future emissions scenarios and identifies the goals and actions required in various sectors to meet Council's target of net zero GHG emissions by 2050. Although implementation of the CEEP will be very costly, the projected savings far outweigh the costs. In addition, the investment would foster a new local economy of renewable energy and construction goods and jobs, with 40,000 person years of employment added to the community over the next 30 years.

Further discussions with stakeholders and the public are anticipated prior to the CEEP being finalized in later this year.

A CEEP Implementation Strategy – Phase One is proposed for development in 2020. This Strategy will consider coordination of the implementation, stakeholder and public participation and outreach, and identification of 'first-step' projects that, among other matters, open the way for the expansion of renewable energy and building technologies locally. Energy and GHG reduction projects that can begin immediately will also be included in this first phase of the Implementation Strategy.

It is anticipated that the CEEP Implementation Strategy will adapt to changing policy, financial, social and technological circumstances. Opportunities will arise in some areas and constraints will appear in others. Adapting the Implementation Strategy to these changes will be ongoing and will involve sustained stakeholder collaboration and public engagement.

Future iterations of the CEEP Implementation Strategy will consider changing circumstances that may influence the following:

- Coordination of the CEEP implementation;
- Working group continuance or dissolution;
- Type and scope of implementation projects; and,
- Participation of new stakeholders.