Newmarket

PLANNING AND BUILDING SERVICES
Town of Newmarket
395 Mulock Drive
P.O. Box 328, STN Main
Newmarket, ON L3Y 4X7

www.newmarket.ca
planning@newmarket.ca
T: 905.953.5321
F: 905.953.5140

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DEVELOPMENT AND INFRASTRUCTURE SERVICES/PLANNING & BUILDING SERVICES REPORT 2016-20

TO: Committee of the Whole

SUBJECT: Community Energy Plan
File: NP-P-14-01

ORIGIN: Planning and Building Services

RECOMMENDATIONS

THAT Development and Infrastructure Services/Planning & Building Services Report 2016-20 dated May 4, 2016 regarding the Community Energy Plan be received and that the following recommendation(s) be adopted:

1. **THAT Council adopt the Community Energy Plan, dated May 19, 2016, prepared under the Municipal Energy Plan program through the Ministry of Energy, as summarized in this Report and circulated previously to Council.**

2. **THAT Council direct staff to research staffing options regarding the implementation of the Community Energy Plan.**

BACKGROUND

The draft Community Energy Plan was prepared in accordance with the Regional Official Plan which encourages local municipalities to prepare such Plans, and with the Town's Urban Centres Secondary Plan which states that the Town will develop such a Plan and it is to include the Urban Centres.

Given this policy context, Newmarket applied to the Ministry of Energy to participate in the Municipal Energy Plan program. Newmarket was subsequently selected for participation in this program and received maximum funding allocation from the Ministry for 50 per cent of the project's costs up to a maximum of $90,000 to develop a Municipal Energy Plan.

In October 2014, the consulting team, headed by Lura Consulting, was selected and the project commenced. Since this time, Council, the Stakeholder Advisory Group (SAG), and staff have worked with Lura to complete the Municipal Energy Plan (also known as a Community Energy Plan, or CEP).

Direction was provided by Council to staff and the consulting team in May, 2015 to prepare a CEP that was "transformative with credible entry points".

COMMENTS

CEPs provide municipalities with strategies to move towards sustainable energy systems. Newmarket's CEP commits the Town to being a sustainable community that demonstrates leadership and innovation in how it manages its energy use. The Plan examines and provides the Town with economic, energy security and environmental benefits, and includes specific recommendations with timelines and budgetary considerations.

The Plan's vision is: *"To create a sustainable community whose energy future is efficient, secure, reliable, and environmentally responsible. Our approach to managing energy will demonstrate leadership and be well beyond the ordinary."* Specific goals are identified to achieve this vision, and specific targets have been established. These targets are transformative, and are meant to ensure that Newmarket is at or near current (2014) global best practice by 2031, by:

1. Reducing per capita primary energy use by 40% from 2013 baseline by 2031.
2. Reducing per capita greenhouse gas emissions by 40% from 2013 baseline by 2031.

Various strategic recommendations are included to achieve these targets.

Strategic Recommendations

The strategic recommendations are categorized under three headings: (i) Efficiency Programs, (ii) District Energy, and (iii) Solar Photovoltaic.

i. Efficiency Programs

There are four efficiency programs in the Plan: a Residential Efficiency Program, a Commercial and Institutional Efficiency Program, an Industrial Efficiency Program, and a Transportation Efficiency Program.

Regarding the Residential Efficiency Program, the residential sector is responsible for about 38% of the Town's total energy use, with a relatively high average energy use compared to both Ontario and global best practice. This is due to the Town's housing stock largely being low density (single detached and townhouses), and built prior to the 2012 Ontario Building Code which increased efficiency standards. To address this relatively high average energy use, the Residential Efficiency Program includes deep retrofits (i.e. window replacements, insulation upgrades, lighting, and heating/cooling equipment replacements). It has been targeted that at least 80% of existing homes will participate in this retrofit program by the year 2031. The program should be structured to allow for the practicalities of starting a new program. This would include ramping up the number of retrofits completed on an annual basis from a few hundred

retrofits per year initially to between 1,000 and 1,500 per year and beyond as the program matures. The Residential Efficiency program will be economically viable in its own right, however, discussions with the Ministry of Energy staff have indicated that there will likely be provincial incentive programs introduced in the near future to accelerate and support these types of programs.

The Commercial and Institutional Efficiency Program is similar to the Residential Efficiency Program in that a retrofit program is being recommended. It has been targeted that at least 60% of existing commercial and institutional built area will participate in this program, which translates into approximately 70,000 sq m of retrofit activity per year up to 2031.

The Plan also notes that new residential, commercial and institutional development should be built in compliance with the 2012 Ontario Building Code and subsequent building code updates which are assumed to provide a 5% efficiency gain on each previous version. As such, new developments will be much more efficient as we move towards 2031.

Specific to Institutional buildings, the Plan recommends that all municipal, educational and other institutional new construction with significant public funding will be built to achieve the current global best practice; this would mean an energy use about 30% lower than current code requirements.

Regarding industrial efficiency, the Plan states that Canadian industry is relatively efficient and operates at levels within 20% to 25% of systematic global best practices. However there is still an opportunity for improvement, so the Plan recommends that industries in Newmarket implement world-class energy management programs and improve energy efficiency by at least 1.5% per year, consistent with best-in-class performers such as Toyota, BASF etc.

The Plan also recommends an Energy Performance Labelling program which would involve the placement of physical labels on buildings that have participated in the aforementioned Efficiency Programs. This is a validation tool that can help the Town achieve its home and building energy efficiency goals. The Plan further recommends that, in order to show leadership, the Town display their energy performance labels in all public municipal buildings.

Regarding transportation efficiency, the Plan recommends that the Town continue to encourage the use of electric vehicles through the development of charging infrastructure, and the continued development and use of active transportation and transit infrastructure. Continued focus on complete communities and transit-supportive urban design policy will also support transformation of transportation efficiency.

ii. District Energy

The form of District Energy recommended consists of a looped system in selected areas and locally sited heat and power generation. The fuels for these could be natural gas or various renewable biofuels.

The Plan identifies that the critical mass of heating density likely exists in three areas (the Yonge / Davis Corridors, historic Downtown area and the Harry Walker industrial area). Therefore, the Plan recommends that a more detailed assessment of the potential for District Energy be undertaken through a feasibility study, centred on these three areas.

Should the feasibility study support the concept, the Plan recommends developing a District Heating distribution system serving the heating needs of the non-residential buildings in the Yonge / Davis Corridors and the historic Downtown area. The DH system would be supplied by a mix of natural gas or alternative fuel-fired distributed Combined Heat & Power heat-only boilers and the recovery of available waste heat. A separate strategy is recommended for the Harry Walker industrial area which includes district heating combined with other utilities more appropriate for new and existing industrial and heavy commercial consumers.

This recommendation is consistent with Regional Official Plan policies which encourage District Energy systems, as well as the policies of the Urban Centres Secondary Plan which encourage district energy options for all commercial, institutional, mixed use and multi-unit residential buildings within the Plan area.

iii. Solar Photovoltaic (PV)

The Plan identifies that, at a preliminary review level, there is fairly significant Solar Photovoltaic (PV) potential in Newmarket, and there is currently a supportive policy regime in place at the provincial level. Therefore, the Plan recommends the addition of solar PV capacity to the Combined Heat & Power element of the District Energy system. The combination of these elements will offset and potentially eliminate summer and winter power energy peaks by 2031, after taking into account the impact of successful residential and non-residential efficiency programs. Further detailed feasibility study is required to identify the solar PV potential in the Town.

Administration and Benefits

The Plan provides recommends for the administration of each of the above noted strategic recommendations.

i. Efficiency Programs

A newly created entity is recommended to be created to administer the voluntary Residential, Commercial and Institutional Efficiency Programs, the main task of which would be to deliver standardized residential energy efficiency retrofit packages. This entity could be a wholly owned Town department or corporation, a public/private partnership, or an extension of the non-regulated activities of Newmarket Hydro.

This entity would partner with local private contractors, material suppliers and non-profit groups. Scale would be achieved and synergies would arise with increased number of retrofits. The Local Improvement Charge mechanism of the Ontario Municipal Act using property tax assessments is recommended to be utilized as the collection mechanism.

Other than some initial start-up costs, capital for financing retrofits would be entirely from private investors. For the homeowner, the net effect is at least immediately cost neutral as capital costs would be applied to property tax, however the homeowner would simultaneously experience lower energy costs. The entity will generate sustained positive returns to the Town, and the construction partners will have increased local employment and enhanced margins.

The Plan identifies that the Efficiency Programs will result in increased energy efficiency which will reduce greenhouse gas emissions considerably. In addition to the environmental benefits, the Plan identifies that there will be economic benefits as a result of a boost to local trades, a positive impact to local employment, enhanced property values and associated tax assessments, and an increased ability for local utilities to meet their statutory efficiency targets.

ii. District Energy

A newly created entity, separate from the Efficiency Program entity, is recommended to administer District Energy, deliver District Energy services, and manage the heating and cooling supply portfolio including Combined Heat & Power units. This entity could be an entity wholly owned by the Town, a public/private partnership, or an extension of the non-regulated activities of Newmarket Hydro.

The Plan identifies that District Energy would reduce energy price volatility and increase energy security. Quality jobs in construction and operation would also result. Industrial and heavy commercial customers in Newmarket would have the potential for optimized on-site Combined Heat & Power and tailored energy services, as well as reduced space and utility staffing requirements. Combined, these benefits would increase Newmarket's economic competitiveness and likely lead to an increase in investment and employment.

iii. Solar Photovoltaic (PV)

The Plan recommends large-scale solar PV investment planning by Newmarket Hydro in collaboration with private users to implement large scale PV in the Town. This would involve the designation of potential suitable large-scale solar PV locations, such as car parks, commercial rooftops and hydro corridors, as well as securing the necessary planning approvals.

The Plan identifies that solar PV would help achieve greenhouse gas reduction targets, as well as provide peak-shaving capabilities (the reduction of power consumption during periods of peak demand, when Time-of-Use rates are highest) because the sun shines brightest during high cooling demand peaks in the

summer when air conditioning units are most likely to be used. Solar PV would potentially eliminate summer and winter power peaks by 2031, when combined with Combined Heat & Power from District Energy.

COMMUNITY CONSULTATION

A Council Workshop was held in May, 2015 that set the overall direction of the project.

A Stakeholder Advisory Group (SAG) was then established for this project. Consisting of representatives from 14 key agencies, as well as an elected representative from the Town and appropriate Town staff, this group provided continued input into the Plan's development through regular meetings.

Because of the Plan's potential economic impacts, specific consultations were held with members of the Town's business community, namely the Chamber of Commerce and Main Street BIA, on December 7, 2016.

Two pop-up community consultations were held in early December, 2015, one at the Magna Centre and one at the Community Open House which was attended by over 75 people. These were informal engagements with the public where members of the project team provided information about the project to the public, answered questions, and solicited feedback.

Another Council Workshop was then held on January 25, 2016 to advise Council on the progress of the Plan and review its preliminary recommendations. The overall direction was supported by Council, and the team answered questions. Council's feedback was obtained which was subsequently reflected in the draft Plan.

On January 26, 2016, a specific consultation session was held with representatives from Newmarket Hydro. This consultation session focused on the preliminary findings, strategic recommendations and possible business structures for some of the recommendations. Key insight was provided which was incorporated into the Plan.

On March 29, 2016, the draft Plan was presented at the Newmarket Library IdeasMarket. The project was discussed as part of a larger panel discussion on climate change, and the Plan provided an example of how local municipalities are responding to this issue. Approximately 30 people participated and provided excellent discussion and ideas to contribute to the refinement of the strategies.

A public consultation period was defined for the Plan, from April 4 to May 6. During this time, the draft Plan was posted on the project's webpage (on the Town's website) and social media was used to engage the public and obtain input. During this period, and although not statutorily required, a public Open House was held on April 19, 2016 which included a presentation and an informal component where members of the public could read information boards and discuss the project with the project team.

Over the public consultation period, one comment was received from the Ministry of Energy which provided a technical correction, and correspondence was received from one resident who agreed with the goals of the Plan but questioned the associated business case, and provided numerous specific comments and requests for additional information.

Although NEAC has been part of the CEP process from the outset through representation on the SAG, the Plan was formally circulated to NEAC during the public consultation period. NEAC supports the draft Plan in principle, and acknowledged the ambitious nature of the Residential Efficiency Program targets. NEAC noted that there is a strong need for a full time (not contract) person to oversee the Town's environment issues, and requested that staff provide a clearer analysis and understanding of how the Plan's implementation will occur, through a presentation from either staff or the consultant to NEAC. NEAC also indicated that it would like to be part of the CEP Implementation Advisory Group.

HUMAN RESOURSE CONSIDERATIONS

The creation of a new staff position, the "Town Energy Manager" is noted as one of the recommended immediate actions. The role of the Town Energy Manager is to implement the Plan's recommendations and ensure there is regular monitoring and reporting of progress and proactively coordinate with elected leaders, stakeholders and community partners. The Town Energy Manager would work to launch the Efficiency Program and District Energy entities and once launched, act as the main point of contact between them and the Town.

The identification of funding would be part of the role of the Town Energy Manager; as noted in the Plan, provincial and federal funding is becoming increasingly available for climate change initiatives. In addition, shared costs could be explored with an appropriate agency, perhaps in the form of a shared position with Newmarket Hydro. As noted in Recommendation 2 of this Report, it is being recommended that Council direct staff to research this position further given the above noted information.

BUDGET IMPACT

If Council were to approve and implement the proposed Community Energy Plan, there would be implications on the Town's budget. As outlined in "Table 6" from the Plan, below, there are six identified recommended immediate actions that have specific budget implications. The table provides a cost estimate and a funding source for each of these recommended immediate actions.

Table 1: Timelines and Budgetary considerations for recommended immediate actions

Recommended Activity	Description / Timelines	Cost Estimate	Funding Source
Newmarket Energy Efficiency Retrofit Business Plan	It is recommended that a NEER Business Plan (investment-grade business plan) should be	$100,000	Recoverable cost assuming NEER goes ahead

Recommended Activity	Description / Timelines	Cost Estimate	Funding Source
	developed for approval by Council **before the end of 2017**.		
District Energy Business Plan	It is recommended that a DE Business Plan (investment-grade business plan) should be developed for approval by Council **before the end of 2017**.	$85,000	Recoverable cost assuming NDE goes ahead
Energy Performance Labelling Program	It is recommended that a detailed Newmarket EPL Program should be designed for approval by Council **before the end of 2017**.	$50,000	Potentially recoverable from NEER
Town Energy Manager	The Town should consider appointing or retaining an Energy Manager **before the end of 2016** with the mandate to implement the MEP.	$75,000/year Full-time employee[1]	Identification of funding is part of role, shared costs to be explored with utility providers
CEP Education and Outreach campaign	It is recommended that a public outreach and education campaign be developed **before the end of 2016** that would increase the overall energy literacy of residents in Newmarket in support of furthering the MEP actions, including uptake in the residential efficiency program.	$25,000	Recoverable cost assuming NEER goes ahead
Facilitation of the CEP Implementation Advisory Group	The CEP SAG would be transitioned to an Implementation Advisory Group over the course of **2016-2017** to shape the business plans and foster greater community support. Moving forward, there would be quarterly IAG meetings so that implementation progress can be reviewed.	$15,000	

BUSINESS PLAN AND STRATEGIC PLAN LINKAGES

Well-planned & Connected:

- Implement key elements of the Town's Strategic Plan, Official Plan and Secondary Plan.

Well-equipped & Managed:

[1] Recurring cost.

- Efficient management of capital assets and municipal services to meet existing and future operational demands.

Living well:

- Environmental protection and natural heritage preservation.

Well-respected:

- Being an influential contributor to regional and provincial affairs.

CONTACT

For more information on this report, contact: Adrian Cammaert, Senior Planner, Policy, at 905-953-5321, ext. 2459; acammaert@newmarket.ca

Adrian Cammaert, MCIP, RPP, CNU-A
Senior Planner, Policy

Jason Unger, MCIP, RPP
Assistant Director of Planning

Rick Nethery, MCIP, RPP
Director of Planning & Building Services

Peter Noehammer, P. Eng.
Commissioner Development and Infrastructure Services