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DISTRICT ENERGY SUPPORT IN THE PROVINCIAL POLICY STATEMENT (PPS)

The Planning and Economic Development Committee recommends the adoption of the recommendations contained in the following report dated August 16, 2012, from the Executive Director, Corporate and Strategic Planning.

1. RECOMMENDATIONS

It is recommended that:

1. Council endorse the recommended changes to the Provincial Policy Statement as set out in Attachment 1.
2. The Regional Clerk forward this report to the Minister of Municipal Affairs and Housing.
3. The Regional Clerk circulate this report to local municipalities, the Canadian District Energy Association, Toronto and Region Conservation Authority, and the Canadian Green Building Council – Greater Toronto Chapter for information.

2. PURPOSE

The purpose of this report seeks Council endorsement of proposed amendments to the *Provincial Policy Statement (PPS)* related to district energy systems. The proposed amendments were developed as part of a stakeholder consultation process that also included, among others, representatives from East Gwillimbury, Markham, Vaughan and York Region.

3. BACKGROUND

The Provincial Policy Statement (PPS) provides policy direction for land use planning and development in Ontario

The PPS is issued under the authority of *Section 3 of the Planning Act* and provides the overarching policy direction for planning and development in Ontario. The PPS provides direction on matters of provincial interest including policies related to growth management, employment, housing, economic prosperity. In addition, the PPS also speaks to promoting efficient use of energy and encouraging the uptake of alternative energy sources that produce less greenhouse gases.

The Planning Act requires that decisions on planning matters made by municipalities, the Province, the Ontario Municipal Board and other decision makers are consistent with the PPS. As an approval authority, York Region plays a critical role in ensuring that land use planning decisions are consistent with matters of provincial interest, as expressed in the PPS.

The Ministry of Municipal Affairs and Housing (MMAH) is currently reviewing the PPS to determine the need for revisions

The latest PPS was issued in 2005 and is currently under review by the Ministry of Municipal Affairs and Housing (MMAH). The formal consultation period on potential revisions to the PPS concluded on October 29, 2010. At that time, Regional and local municipal staff provided substantive comments to MMAH on recommended changes to the PPS. Those recommendations included the need to reference district energy.

The Minister of Municipal Affairs and Housing invited a submission on how the Provincial Policy Statement might support the implementation of district energy

Although the formal consultation period has ended, the review process continues. In early 2012, the Minister of Municipal Affairs and Housing invited the Canadian District Energy Association (CDEA) to provide a submission on how to incorporate district energy policies in the PPS. The CDEA, in partnership with the Toronto and Region Conservation Authority, established a stakeholder group to determine how best to incorporate district energy policies in the PPS. York Region staff actively participated, through the stakeholder consultation process, in formulating the proposed amendments to the PPS related to district energy systems.

4. ANALYSIS AND OPTIONS

District Energy Systems are recognized as providing a number of advantages including flexibility, adaptability and improved efficiency

District energy refers to a system that generates and distributes thermal energy (heating and/or cooling) at a community scale. District Energy infrastructure includes a local centre where energy is generated, and a distribution system comprised of a network of buried and insulated pipes that distributes energy to buildings within a distinct area.

District energy systems offer a number of benefits, including:

1. Flexibility and adaptability because fuel sources can change as alternative and renewable sources of energy become available
2. Independence from national and international energy grids which improves resiliency to failures

3. Improved efficiency over traditional energy systems because more energy is delivered directly to the consumer as a result of lower transmission loss
4. Enables heat recovery strategies, including capture of waste heat for district heating, which can result in fewer greenhouse gas emissions
5. Provides thermal energy storage, within the system and in storage facilities
6. Provides economic development opportunities associated with energy reliability, local investment and job creation.

Incorporating specific language about district energy in the PPS supports implementation of the Regional and Local Official Plans

Incorporating specific language about district energy in the PPS supports implementation of the Regional Official Plan in the following ways:

1. Acknowledges the strong municipal interest in implementing district energy systems, including those municipalities that have been successful (e.g. Markham and Hamilton).
2. Ensures a consistent policy approach between provincial, regional and local municipal levels of governments.
3. Confirms district energy systems as an effective strategy to achieving the PPS objectives of greater energy efficiency and reduction of greenhouse gases.
4. Provides support for investing and planning for district energy in those areas where feasible and appropriate.

Regional Centres and Corridors provide opportunity to implement District Energy

District energy systems are most appropriate in mixed-use areas with medium to high density residential, commercial, office and institutional land uses. In achieving regional forecasted population, forty percent of new growth will be accommodated through intensification in a system of regional centres and corridors. The remaining 60% of growth will occur in greenfield areas including new community areas. It is in these emerging centres and new community areas where the potential to implement district energy systems is greatest.

The York Region Official Plan provides policy direction and support for the development of community energy plans and district energy systems

The Minister's approved Regional Official Plan, 2010 (ROP) contains innovative policies that address energy on a number of fronts, including those related to:

- Energy efficiency targets for new buildings
- Promotion of renewable, alternative and district energy options
- Encouragement of municipal-wide Community Energy Plans including consideration of alternative and renewable energy generation options and district energy systems

- Required community energy plans in the four Regional Centres and three new community areas including consideration of alternative and renewable energy generation options and district energy systems

As a result, East Gwillimbury, Markham, Newmarket, Richmond Hill and Vaughan will be required to create community energy plans because they contain a regional centre or a new community area and in some cases, both. The remaining municipalities in York Region are encouraged to undertake community energy plans.

It should be noted that these policies were included in the July OMB partial approval of the ROP. ROP policies related to community energy planning in Regional centres are now in-force; the remainder of the policies are found in the Sustainable Cities/Sustainable Buildings and New Community Areas sections of the ROP and will not be in-force until the Board Order has been issued.

Implementation of community energy plans and district energy systems is happening in our local municipalities already

Projects related to community energy planning and implementation of district energy systems are already happening in York Region. For instance, the City of Markham has successfully implemented and is expanding capacity of the district energy system in Markham Centre; the Town of East Gwillimbury has completed a Community Energy Plan and Implementation Strategy; and the City of Vaughan is currently undertaking an Energy Mapping Exercise.

Regional staff participated in the development of the recommendations on district energy and the PPS

The consultation process included a half day workshop and a web meeting organized and hosted by the Toronto Region Conservation Authority, in partnership with the Canadian District Energy Association.

The Workshop included senior representatives of municipalities including Vaughan, Toronto, Guelph, Barrie, Markham, Pickering, Burlington, York Region, Mississauga and East Gwillimbury. Also in attendance were representatives from the Ontario Sustainable Energy Association, Quality Urban Energy Systems of Tomorrow (QUEST), World Association of Distributed Energy (Canada), Canadian Urban Institute, Local Governments for Sustainability (ICLEI), Waterfront Toronto, Enbridge, Natural Resources Canada, Ryerson University and the Canadian Green Building Council.

The result of the stakeholder consultation was a common set of recommendations on how to reference District Energy in the PPS. A complete listing of proposed changes can be found in Attachment 1 of this report. In general, the recommendations can be broken down into categories, as follows:

1. Adding a subsection specific to district energy under the Infrastructure and Public Service Facilities section of the PPS (Section 1.6) with policies that address:
 - i. Appropriate land use patterns to support the long term viability of district energy systems
 - ii. Ensuring new development is compatible with thermal energy networks where feasible
 - iii. Integration of thermal energy strategies at all stages of the planning process
2. Adding new definitions for *District Energy* and *Combined heat and power (CHP or cogeneration)*.
3. Amending policies under Economic Prosperity (Section 1.7) and Energy and Air Quality (Section 1.8) to specifically reference district energy systems.
4. Amending the existing definitions of *Alternative Energy System*, *Infrastructure* and *Renewable Energy Systems* to specifically reference district energy, energy recovery strategies, energy distribution networks and thermal energy.

The recommendations were sent to Minister of Municipal Affairs and Housing on June 04, 2012. It is anticipated that letters of support will continue to be forwarded by participating stakeholders in early fall after staff have sought Council or board approval. This report and attachment will represent the Region's support for the recommendations.

Link to Key Council-approved Plans

Advocating for changes to the PPS to expressly encourage implementation of district energy systems addresses several policy areas in the ROP including: "Sustainable Cities, Sustainable Communities, "Regional Centres and Corridors" and "Building Complete, Vibrant Communities.

5. FINANCIAL IMPLICATIONS

There are no financial implications of this report associated with recommending policy support for District Energy in the PPS, 2005.

6. LOCAL MUNICIPAL IMPACT

The York Region Official Plan (2010) requires community energy plans in the four regional centres and three new community areas. As a result, East Gwillimbury, Markham, Newmarket, Richmond Hill and Vaughan will be required to undertake community energy planning exercises and consider district energy systems in their regional centres and new community areas.

Staff from Markham, East Gwillimbury and Vaughan participated in the stakeholder consultation process to develop the recommended amendments to the PPS. These changes facilitate the community energy planning process by enabling local municipalities to work with private sector partners to consider the implementation of district energy throughout the planning process. In addition, the proposed changes to the PPS, provides policy support for municipalities to plan for a thermal grid in a manner similar to other linear municipal infrastructure and may facilitate the development of master plans, capital plans and the associated budgets.

7. CONCLUSION

The York Region Official Plan (2010) was approved with an innovative energy policy approach that requires increased energy efficiency in buildings, requires community energy plans in the Regional Centres and New Community Areas and promotes the use of alternative, renewable and district energy sources.

The Minister of Municipal Affairs and Housing invited comment on how the PPS could encourage and support the implementation of district energy systems in municipalities throughout Ontario. The Canadian District Energy Association and the Toronto Region Conservation Authority facilitated a stakeholder consultation process to develop a common set of recommendations. Regional staff provided input into this process and support the common recommendations at a staff level.

Staff is requesting that Council endorse the recommendations as set out in *Attachment 1*.

For more information on this report, please contact Paul Bottomley, Manager of Growth Management at 905 830-4444, Ext. 1530, or Valerie Shuttleworth, Director, Long Range Planning at Ext. 1525.

The Senior Management Group has reviewed this report.

(The attachment referred to in this clause is attached to this report.)

Recommended Changes to the Provincial Policy Statement to Support Implementation of District Energy

New Section and New Policies

The purpose of these proposed new policies is to enable municipalities to pursue the implementation of District Energy, and to ensure that this infrastructure strategy is considered throughout the planning process. We recommend these policies be incorporated within Section 1.6 Infrastructure and Public Service Facilities.

1.6.9 District Energy

- 1.6.9.1. A land use pattern, density and mix of uses should be promoted that maximize the long-term security and flexibility of the energy supply and support the development of viable choices and plans for community-based District Energy.
- 1.6.9.2. Planning authorities shall establish policies to ensure new development is compatible with thermal energy networks, where the use of such networks is feasible.
- 1.6.9.3. The consideration of community-based thermal energy strategies shall be integrated at all stages of the planning process.

New Definitions

The purpose of these new definitions is to ensure that District Energy and cogeneration are clearly understood, and that the profile of these infrastructure strategies is elevated throughout the planning process.

District Energy: means systems that generate and distribute thermal energy (heating and/or cooling) at a community scale. The infrastructure includes a localized centre where the thermal energy is generated, and a network of buried insulated pipes (the thermal grid) that distribute that energy to buildings within a defined geographic area. The medium for transmitting the thermal energy along the thermal grid is either steam (for legacy systems), or water (for modern systems). The thermal grid enables the application of heat recovery strategies (such as combined heat and power, waste heat capture), community-scale thermal storage, and the use of alternative and renewable fuel sources.

Combined heat and power (CHP or cogeneration): means a process that simultaneously produces electricity and useful heat. This process works by recovering waste heat from electricity generation, and distributing that heat through the thermal grid.

Amendments to Existing Policies

The purpose of the proposed policy amendments is to elevate the profile of District Energy throughout the planning process. **Orange** indicates new text.

1.7 LONG-TERM ECONOMIC PROSPERITY

- 1.7.1 (h) providing opportunities for increased energy generation, supply and conservation, including alternative energy systems, ~~and~~ renewable energy systems, and District Energy systems.

1.8 ENERGY AND AIR QUALITY

- 1.8.1 e) promote infrastructure, design and orientation which maximize the use of alternative or renewable energy, such as solar, ~~and~~ wind and district energy, and the mitigating effects of vegetation.
- 1.8.2 Increased energy supply should be promoted by providing opportunities for energy generation facilities to accommodate current and projected needs, and the use of renewable energy systems, ~~and~~ alternative energy systems, and District Energy systems, where feasible.
- 1.8.3 Alternative energy systems, ~~and~~ renewable energy systems, and District Energy systems shall be permitted in settlement areas, rural areas and prime agricultural areas in accordance with provincial and federal requirements. In rural areas and prime agricultural areas, these systems should be designed and constructed to minimize impacts on agricultural operations.

Amendments to Existing Definitions

The purpose of these proposed amendments to Section 6.0 of the PPS is to ensure that references to “energy” specify both thermal and electric energy, and to ensure that District Energy is recognized as an *alternative energy system* and as *infrastructure*.

Alternative energy systems: means sources of energy, ~~or~~ energy conversion processes, energy recovery strategies, or energy distribution networks that significantly reduce the amount of harmful emissions to the environment (air, earth and water) when compared to conventional energy systems. *Alternative energy systems include, but are not limited to, District Energy and combined heat and power (also known as cogeneration).*

Infrastructure: means physical structures (facilities and corridors) that form the foundation for development. *Infrastructure* includes: sewage and water systems;; septage [sic] treatment systems;; waste management systems;; electrical and thermal energy power generation, and transmission, and distribution; communications/telecommunications;; transit and transportation facilities;; ~~oil and gas pipelines~~ gaseous and liquid fuel distribution; and associated facilities.

Renewable energy systems: means the production of electrical or thermal energy power from an energy source that is renewed by natural processes including, but not limited to, wind, water, a biomass resource or product, or solar and geothermal energy.