Energy Strategy Terms of Reference	
Description	The purpose of the Energy Strategy is the early identification of opportunities to integrate local energy solutions that are efficient, low carbon and resilient. The findings may inform later studies.
Rationale	The Energy Strategy is intended to contribute to achieving the City's objectives to reduce energy consumption and GHG emissions and become more resilient. The Community Energy Plan (approved July 17 2017) aims to improve energy efficiency; modifying land use planning; reducing energy consumption and greenhouse gas emissions; and fostering green energy solutions throughout Windsor, while supporting local economic development. The development of Energy Strategies for planning applications will help Windsor work toward its goals of increasing energy efficiency in new development and laying the foundations for creating a net zero neighbourhood. Undertaking an Energy Strategy at the application stage for a Plan of Subdivision, Official Plan or Zoning Bylaw Amendment facilitates the following key outcomes: • Opportunity to site buildings to take advantage of existing or proposed energy infrastructure, energy capture and/or solar orientation at the conceptual design stage. • Consideration of potential energy sharing for multi-building development and/or neighbouring existing/proposed developments. • Consideration of opportunities to increase resiliency such as strategic back-up power capacity (for multi-unit residential buildings). • Identification of innovative solutions to reduce energy consumption in new construction and retrofit of existing buildings (if part of new development). • Exploration of potential to attract private investment in energy sharing systems.
When Required	The Energy Strategy applies to all new building development excluding “minor” development (new stand alone building resulting in a maximum total gross floor area of 300 square metres (3,229 square feet)) and excluding small scale low profile residential developments (single detached, semi-detached duplex and double duplex dwelling); And in association with the following application types: • Official Plan Amendment; • Zoning By-Law Amendment; • Plan of Subdivision; or • Site Plan Approval.

Required Contents	This section presents **minimum requirements** for completion of the Energy Strategy and is not exhaustive. The applicant is encouraged to discuss the required contents with Environment & Climate Change staff prior to initiating the strategy. **1. Towards Zero Emissions Development** Calculate energy and emissions for the proposed development using the following scenarios: • **Baseline** – Current Ontario Building Code. • **Higher Performance** – New Homes: LEED Silver, Built Green Gold, Energuide 65 or less; New Buildings: LEED Silver, Built Green Gold, BOMA Best Gold, EUI 20%<building code. • **Near Zero Emissions** – New Homes: LEED Platinum, Passive House, EnerGuide 25 or less; New Buildings: LEED Platinum, BOMA Net Zero Challenge, EUI 50%<building code. The scenarios should include opportunities for efficient building envelopes and building-scale renewables, as well as opportunities for shared energy services (i.e. low-carbon thermal energy networks). **a. Energy Conservation & Demand Reduction** Identify and evaluate opportunities to achieve **low energy use intensities (EUIs)** and **reduced energy demands**, through: • Building orientation and solar controls; thermal effectiveness of the building envelope; daylighting design strategies; and • High efficiency mechanical systems (e.g. efficient HVAC systems, heat recovery, lighting solutions). **b. Low-Carbon Solutions** Identify and evaluate opportunities for low-carbon energy solutions **on-site** (i.e. within the proposed development site), and **off-site** through connection to nearby existing or planned buildings and infrastructure. This can include, but is not limited to: • Renewables, such as rooftop solar PV, geo-exchange in a nearby park, and heat recovery from sewer lines; • Connection to a proposed or existing thermal network (district energy); • Rough-in for a future connection to nearby existing/in-development thermal energy networks (i.e. "district energy-ready"); and • A new thermal network connecting several planned developments in an area. For **multi-building** (i.e. campus-type) proposals, identify and evaluate opportunities for shared energy solutions that include, but are not limited to: • Thermal energy distribution networks (i.e. piping) to connect buildings; • Shared mechanical room(s) for heating and cooling equipment; • Large-scale renewables such as biomass, sewer heat and other means of waste heat recovery; • Thermal energy storage;

	• Shared backup power system(s) for multiple buildings; and • Micro-grid(s) with the ability to island from the electrical grid. **2. Energy Resilience** Identify and evaluate opportunities to incorporate EV charging stations into residential and commercial developments. Identify and evaluate opportunities for **backup power systems** that will improve the resilience of buildings to area-wide power outages, especially for multi-unit residential buildings. This includes meeting all emergency power (life safety) requirements, as well as providing for 72 hours (at a minimum): • Domestic water (hot and cold); • Elevator service; and • Space heating, cooling, lighting and receptacle power to the central common area/amenity space/lobby, where applicable. **3. Analysis, Preferred Scenario, and Recommendations** a. Calculate energy consumption, demand, and emissions for the proposed development according to the three scenarios. Include in calculations the energy performance of existing buildings (if any are part of the development site) using available utility data. b. Calculate the future cost of energy for the proposed development according to the three scenarios projected to 2030 including the future carbon cost of $170 per tonne. c. Estimate the contribution(s) of the identified on-site and off-site low-carbon solutions towards achieving reduced emissions. d. Based on the completed analysis, state the preferred scenario and conclude with recommendations and next steps to facilitate implementation. Establish the overall value proposition(s). **Format of the Report** i. Executive summary ii. **Energy calculations**, including data and assumptions, for existing buildings and new development iii. **Graphs** of expected energy performance iv. Conclusions / Recommendations v. **Appendices**: supporting documentation, references, etc.
Further Implementation	Upon completion of the Energy Strategy, selection of energy and emissions scenario and Planning Act approvals, the following will be required once the project has been completed:

	1. Energy Compliance Confirmation of the energy efficiency of the development through the Green Building programs mentioned above (if higher performance or near-zero emissions scenarios are chosen). If development is constructed to Ontario Building Code (baseline scenario), buildings and/or 10% of homes in the subdivision must meet blower test requirements to verify compliance with the Ontario Building Code. **2. Energy Performance Labelling** Energy Performance Labelling (EPL) is a low-cost tool that can help share the energy performance of all buildings. Upon completion of development, both homes and buildings must have an EPL stating energy performance based either on known energy use or observed building condition. It is recommended that developers use the Natural Resources Canada (NRCan) EnerGuide Portfolio Manager Rating System as its performance measurement tool and use an independent certification process.
Contact	**For further information please contact:** **Environmental Sustainability & Climate Change** 350 City Hall Sq, Windsor, ON, N9A 6S1 emp@citywindsor.ca Karina Richters Supervisor Environmental Sustainability and Climate Change 519 255 6100 x 6127 Or Michelle Moxley-Peltier Community Energy Plan Administrator 519 255 6100 x 6109
Reference Documents	Community Energy Plan