Middlesex Centre Community Energy Plan - Stakeholder Discussion Primer

WHAT IS A COMMUNITY ENERGY PLAN

A Community Energy Plan (CEP) is a comprehensive long-term plan to improve energy efficiency, reduce energy consumption and greenhouse gas emissions, foster green energy solutions and support economic development. The Plan looks at energy use across the entire municipality of all sectors and that includes a municipality's residential, commercial, industrial, transportation and public sector energy use, including municipal operations and water infrastructure such as water supply and waste treatment plants.

The Plan identifies energy conservation and green energy opportunities for all sectors within the broader context of the built environment, land use planning, growth planning and generation and transmission infrastructure. The Plan also helps to articulate municipal priorities for other energy planning initiatives, such as regional planning and provincial energy plans

The development of a CEP is comprised of three major stages:

- ✓ Stage 1: Stakeholders engagements: -
- ✓ Stage 2: Baseline Energy Study/Energy Mapping
- ✓ Stage 3: The creation of the Plan and approval by Municipal Council

Stage 1: Stakeholder Engagement

The Stakeholder Engagement component is intended to ensure that all relevant stakeholders in Middlesex Centre are engaged in the process of creating the Plan.

Key stakeholders include, but not limited to: elected municipal officials, the local LDC(s) and local gas utilities; large institutional, commercial and industrial energy users, business improvement associations and local business groups; local non-governmental organisation with an energy focus, sector organisations; real estate sector; local builders and developers; energy project developers and local academic institutions, where applicable.

The engagement is intended to build awareness of current energy issues (including generation and transmission supply), invite stakeholder input about individual energy trends, issues, and needs, identify conservation and renewable energy objectives/opportunities. Stakeholder engagements will take the form of public meetings, surveys and email correspondences soliciting for stakeholder views/opinions.

Stage 2: Baseline Energy Study (BLS) and Energy Map(s).

Baseline energy studies (BLS) measure how and where energy is used within a municipality and analyses opportunities for energy reduction. The participation of local gas and electric utilities is required to provide to provide energy consumption data. Other sources of data may include the Municipal Property Assessment Corporation (MPAC), municipal offices and other government bodies. An accurate BLS allows a municipality to identify potential opportunities for energy savings in all areas of a municipality. It is expected that energy data will be collected at a minimum at the postal code level. The more detailed and granular the data, the more useful it will be in identifying specific areas and opportunities for reducing energy consumption. Energy mapping may be an effective tool for visually representing energy use, identifying conservation opportunities and communicating this information to all citizens in Middlesex Centre.

Stage 3: Community Energy Plan development.

Using energy consumption data from the BLS, municipalities will evaluate their energy conservation opportunities by sector and develop a Plan that includes conservation plans and policy recommendations aimed at reducing energy use in the entire municipality. Municipalities should also consider renewable and local energy sources as part of their Plan as they are they are an important priority for the Province. Municipal support and formal Council approval of the Plan are crucial and required. The Plan needs to include a commitment and as well propose timelines on integrating energy efficiency and conservation recommendations including action items detailed in the Plan into other municipal planning directives such as Official Plan, strategic plan and economic strategies, growth plans, prioritization exercises, etc.

BENEFITS OF CEP:

A CEP can provide a wide range of economic, environmental, social and energy security benefits. A few of these benefits are listed as follows:

- Build awareness of energy use, energy generation and supply in the community
- Identify opportunities to conserve energy, reduce energy costs and initiate green energy solutions and develop long-term strategies to implement these solutions through-out Middlesex Centre.
- Create economic opportunities, support investment, and encourage energy efficiency and local energy projects that may create local jobs
- Increase energy security that will lead to more environmentally and economically sustainable communities in Middlesex Centre
- Improve energy efficiency, reduce air pollution and greenhouse gas emissions
- Foster local sustainable energy solutions in the community
- Address energy limitations where they exist
- Reduce community vulnerability to energy price increases
- Increase energy security and resilience
- Build a local energy efficiency and local energy market sector and retain energy dollars within the community
- Engage major stakeholders in Middlesex Centre who have an important stake in energy issues.
- Provide input into energy planning in Ontario, locally and regionally.

TIMELINE FOR DEVELOPMENT OF CEP

MILESTONE	***Due Date***
Stage 1 – Stakeholder Engagement (mid-stage review)	**October 1, 2016**

Stage 1 – Completion of Stakeholder Engagement • *Final results of the community survey* • *Stakeholder engagement through workshops* • *Confirmation of targets and actions to be taken through the plan*	**November 1, 2016**
Stage 2 – Baseline Energy Study and Energy Map (mid-stage review) • *Collection of baseline energy data* • *Collection of other data* • *Meet with stakeholders*	**February 1, 2017**
Stage 2 – Completion of Baseline Energy Study and Energy Map • *Undertake analysis of baseline data* • *Identify energy conservation opportunities* • *Calculate greenhouse gas emissions* • *Continue stakeholder engagement* • *Prepare report for municipal approval*	**April 1, 2017**
Stage 3 – Creation of Plan (mid-stage review) • *Develop draft MEP* • *Creation conservation plan and policy recommendations* • *Create action plan with timelines* • *Draft implementation strategy* • *Present plan to stakeholders for review*	**June 1, 2017**
Stage 3 – Completion of Plan • *Complete approved MEP* • *Review plan/priorities with stakeholders* • *Budget with costs and funding sources* • *Approval of Plan by Council*	**September 1, 2017**

ELECTRICITY CONSUMPTION IN MIDDLESEX CENTRE (2013 – 2015):

From the consumption data below, the residential sector in Middlesex Centre had a consistent highest consumption of electricity from 2013 -2015. This was followed by the commercial sector and then the agriculture sector. The industrial sector had the least consumption of electricity. This graph is a clear indication of electricity consumption patterns in the Municipality. Appropriate energy efficiency measures could be adopted by the respective sectors to reduce energy consumption – especially residential. The benefit of such measures will be evident in the reduced energy bill municipality residents will experience.

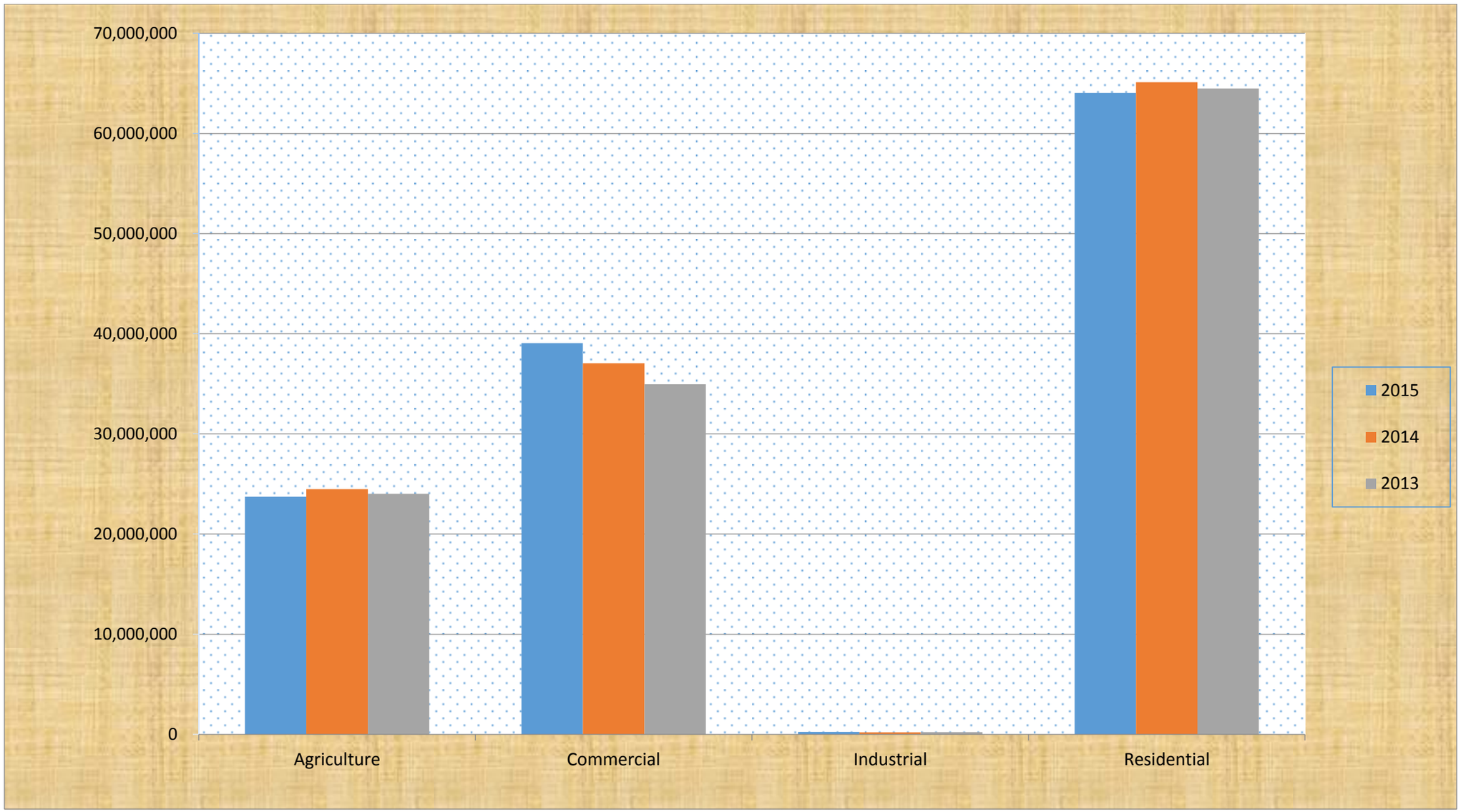


Figure 1: Graph depicting sector-by-sector consumption of electricity.

Sector		Agriculture	Commercial	Industrial	Residential
Electricity Consumption (kWh)	2015	23,723,829	39,060,376	252,356	64,042,354
Electricity Consumption (kWh)	2014	24,479,007	37,045,282	217,745	65,106,489
Electricity Consumption (kWh)	2013	24,018,564	34,969,338	229,789	64,496,660

Table 1: Sector-by-Sector Electricity Consumption in Middlesex Centre (2013-2015)

NATURAL GAS CONSUMPTION IN MIDDLESEX CENTRE (2015):

Commercial Sector Natural Gas Consumption:

Suburb	Consumption (m3)
Kilworth Heights	108,137.52
Komoka	586,699.99
Delaware TWP	406,233.58
Lobo TWP	1,526,353.55
London TWP	3,023,282.33
Total Usage	**5,650,696.97**

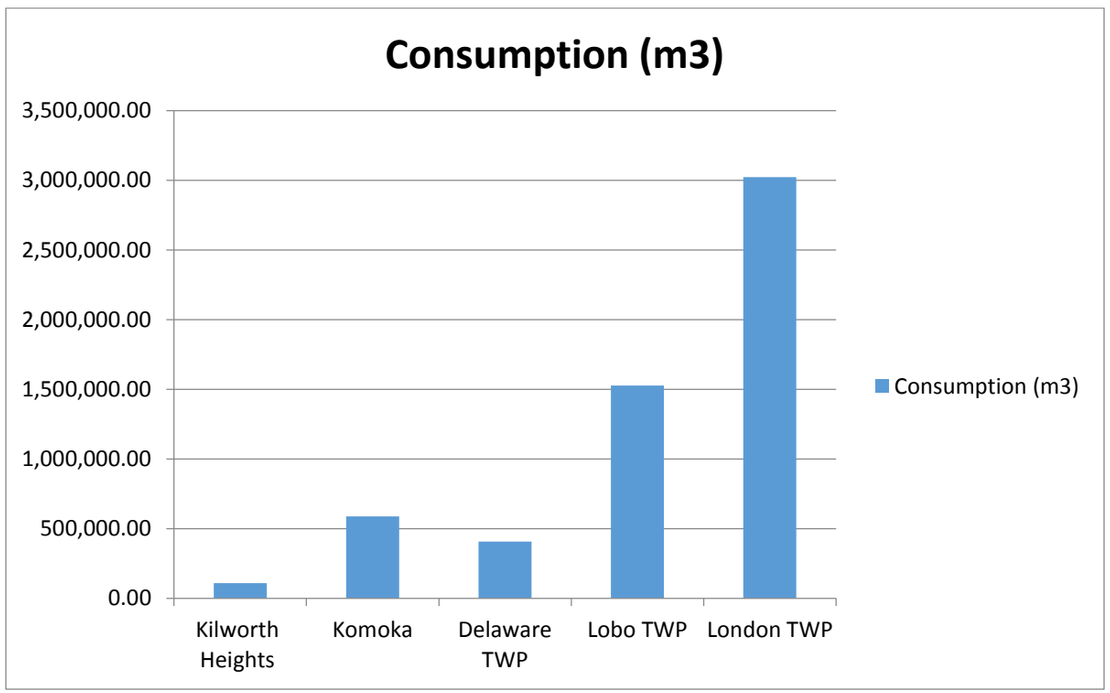


Figure 2: *Commercial Sector*: Natural gas consumption (2015).

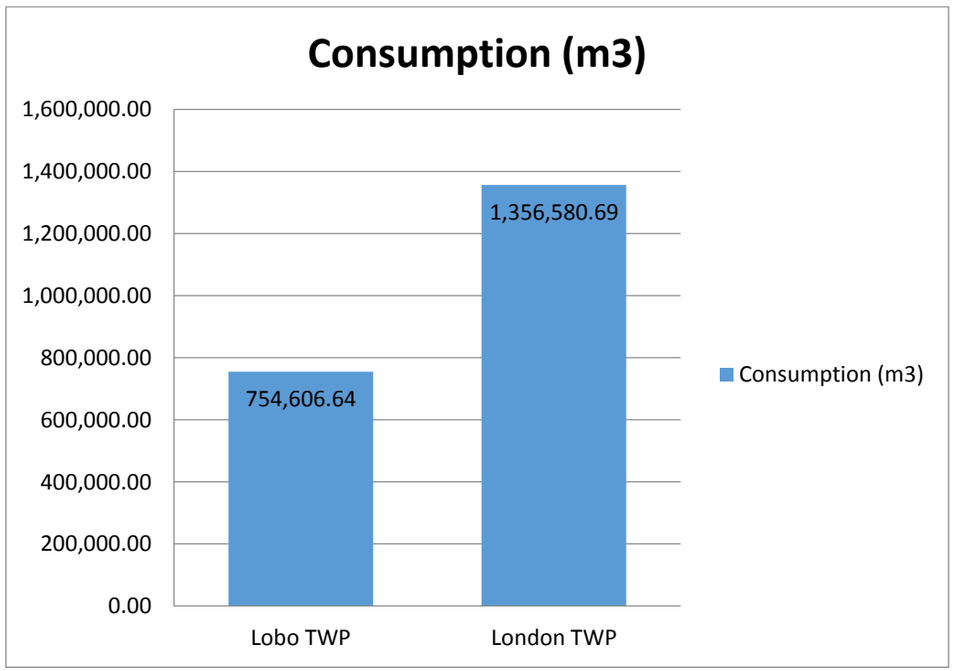


Figure 3: *Industrial Sector*: Natural gas consumption (2015)

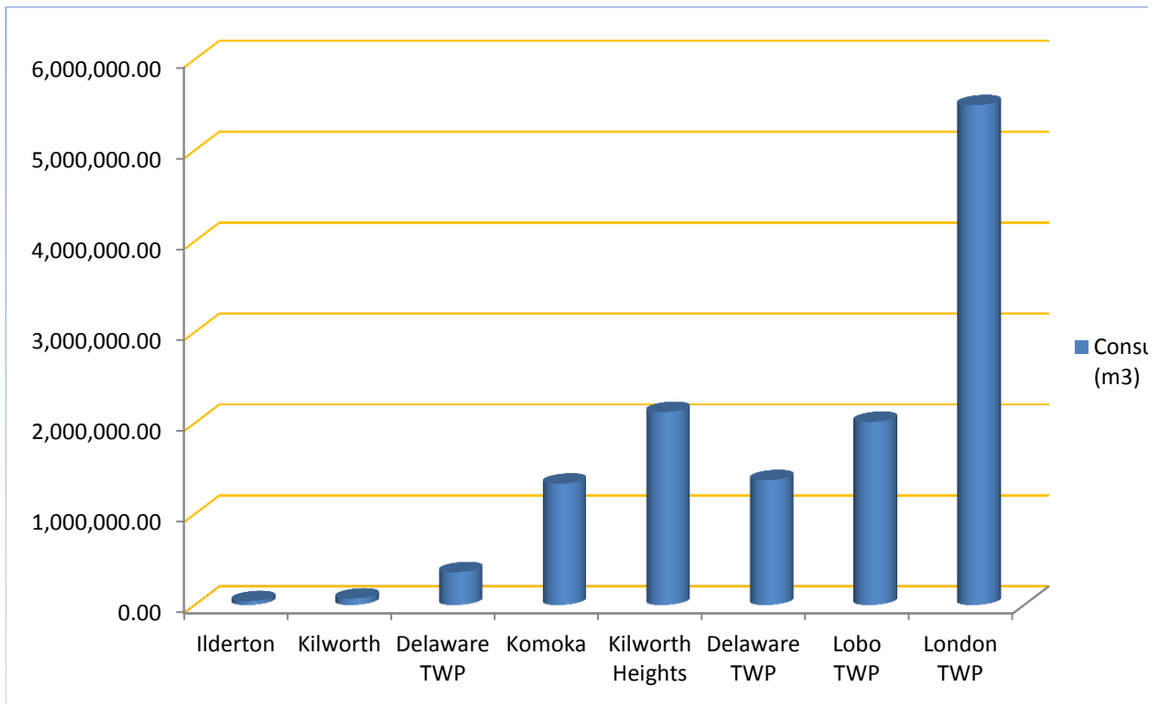


Figure 4: *Residential Sector*: Natural gas consumption (2015)

Residential Sector Consumption:

Suburb	Consumption (m3)
Ilderton	42,149.78
Kilworth	70,800.75
Delaware TWP	359,900.83
Komoka	1,333,645.56
Kilworth Heights	650,148.35
Delaware TWP	1,372,256.85
Lobo TWP	2,013,869.52
London TWP	5,495,628.54
Total Usage	**12,809,741.55**

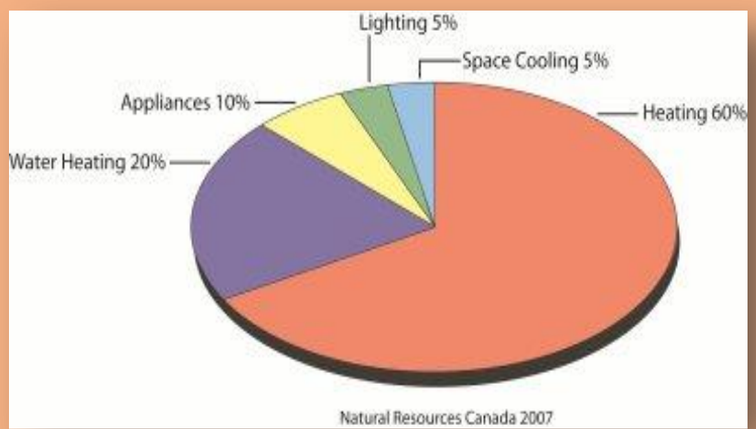
ENERGY EFFICIENCY *STRIDES* AT MIDDLESEX CENTRE: NET ZERO ENERGY/CARBON NEUTRAL FIRE HALL & GREEN BUILDER RECOGNITION PROGRAM

In September 2016, Middlesex Centre received funding from the Federation of Canadian Municipalities – Green Municipal Fund for the construction of 9,900sq/ft municipal fire hall. The fire hall is being constructed as a net zero energy/carbon neutral building. The Canadian Housing and Mortgage Corporation defines a net zero energy building as a type of building that generates as much energy as the building consumes per annum. Though the design and construction of net zero energy buildings tend to focus on energy efficiency and renewable energy generation, they may also include technologies and practices that enhances indoor air quality and comfort, reduce environmental impact, conserve natural resources and improve affordability. The project is currently at a stage of procuring for a general contractor. Construction is set to commence early spring of 2017.Once completed; the Coldstream Fire Hall will contribute to the growing concept of net zero carbon emissions construction in Ontario in line with the Ontario Climate Change Action Plan 2030 deadline.

Middlesex Centre Green Builder Recognition Program:

The Planning Development and Services Department of the municipality has implemented a new initiative called the *Green Builder's Recognition Program*. The main goal of this initiative is to encourage local developers to build more sustainable and energy efficient homes. Awarded through a point system where marks are obtained for a variety of energy efficient and sustainable options when building a new house in the municipality. For example, if a builder can accumulate 40 points, the building will be considered as a 'green build' and the home homebuilder will be recognized as a green builder in the municipality. The program stared in Jan of 2016 and so far two home builders are participating with home construction that involves insulated concrete forms (ICFs), roofs enhancements that make the building solar ready, increased insulation and triple pane windows.

Focus Area:	Reasons for	Reasons against	Stakeholder Comments
1. CONSERVATION 	• To contribute to Ontario's Long Term Energy Plan conservation target (*i.e. 28TWh of energy savings -28 billion watts hrs - by 2030*) • Protect aging electricity infrastructure • Contribute toward peak demand management by LDC • **Lights:** Convert all your old T8/T12/ incandescent lights into LED and use *75%* less energy than incandescent lighting. (www.saveonenergy.ca/LED). • **Motors:** Install Variable Frequency Drives to reduce electricity consumption in factory or industrial plants. • Chillers Replacement/HVAC redesign/Lighting Controls. • (https://saveonenergy.ca/Business/Program-Overviews/Retrofit-for-Commercial.aspx)		

Focus Area:	Reasons for	Reasons against	Stakeholder Comments
2. ENERGY EFFICIENCY: ***SaveonEnergy Programs (Residential):*** https://saveonenergy.ca/Consumer.aspx ***SaveonEnergy (Business/Commercial).*** https://saveonenergy.ca/Business.aspx ***Home Energy Audit:*** (i). http://www.closingcontacts.com/content/ (ii). http://www.energy.gov.on.ca/en/  	• Rising cost of energy in Ontario • Reduce monthly utility bills • Reduce greenhouse gas emissions in community • Contribute to improved air quality and human health • For commercial and industrial sectors, reduce operational cost due to high hydro cost. • Increase competitiveness of business and industry • Receive up to $650 in incentives when you participate in the heating and cooling program. • Increase competitiveness of business and industry • Heating, appliances and lights contribute over 80% of energy bills.(see diagram adjacent)	•	•

Focus Area:	Reasons for	Reasons against	Stakeholder Comments
3. GREEN ENERGY: ***Recent Trends in Renewables:*** http://www.cbc.ca/news/canada/calgary/canada-super-power-oil-decline-renewables-policy-horizons-1.3601400 	• Reduce greenhouse gas emissions and build a prosperous zero-carbon economy • Avoid the cost of carbon emissions under a cap n trade system • Contribute to a sustainable lifestyle • Accelerate local economic growth and future prosperity of Middlesex Centre • Support a low-carbon economy • Support recently launched Ontario Climate Change Action Plan • Receive up to $14,000 when you participate in Ontario EV program (http://www.mto.gov.on.ca/english/vehicles/electric/electric-vehicle-incentive-program.shtml)	•	•

Focus Area:	Reasons for	Reasons against	Stakeholder Comments
4. LOCAL ECONOMIC GROWTH & DEVELOPMENT 	• Job creation to retain youth in municipality and enhance demographics of community • Economic prosperity for Middlesex Centre • Attract people and businesses to move into Middlesex Centre • Increase tax base for municipality • ??????? • ?????????	• ??? • ??? • ??? • ???	• ??? • ??? • ??? • ???

Based on what you read so far, please pick your TOP 3 priorities (1 – first choice, etc.) regarding the subject of energy use at home, office, industry and farm:

- ☐ Set personal target for reduced energy consumption for residence, business, industry and farm (e.g. make a commitment of **1%** per annum energy reduction and **5%** over 5years!)
- ☐ Investigate government financial incentives for residential & business energy savings projects (e.g. small businesses in municipality qualify for up to **$2,000** in incentives to convert their lights to LED).
- ☐ Explore renewable energy opportunities such a net metering to reduce residential & business energy cost
- ☐ Become a local 'Energy Champion' to educate and create awareness of energy conservation in my community
- ☐ Whenever you have to purchase any electrical item, look for the ENERGY STAR® label on light bulbs, home appliances, electronics, and other products. ENERGY STAR products meet strict energy efficiency guidelines.
- ☐ **Turn lights off** when you are not in the room. And also TVs, entertainment systems, and your computer and monitor[1].
- ☐ Plug home electronics, such as TVs and DVD players, into power strips; turn the power strips off when the equipment is not in use -- TVs and DVDs in standby mode still use several watts of power. This is referred to as '**Vampire Load'**[2].
- ☐ Other option – please specify _____
- ☐

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[1] *According to Western University School of Graduate Studies SustainabiliTIP, if 1000 Western's staff members unnecessary left the lights on in their offices for **2 hours** each work day, this would consume **86,000kWh** of electricity each year. This is enough electricity to power three average Canadian homes for an entire year! It would also release the same amount of emissions as eleven cars do in year.*

[2] *Many appliances consume energy even when you are not using them. This is called "**Phantom load**" or "**Vampire load**". This load can cost you up to **$100** or more per year. Prevent vampire/phantom load by directly unplugging electronics or by plugging items into a surge protector/power strip and turning the whole strip off when leaving the room.*

Organization and/or Affiliation (e.g., Company X, LPMA member):	
Completed by:	
Date:	

NEXT STEP

The following activities are also being planned over the next three months.

Activity	Lead Areas	Timeframe
Final results of the community survey	• Conservation; • Renewable Energy • Energy Efficiency • Local Job Creation	September 2016
Stakeholder engagements through workshops	• Energy Efficiency • Local Job Creation • Renewable Energy • Conservation	October 2016
Confirmation of targets and actions to be taken through the Plan	• Internal Steering Committee	November 2016

CONTACTS

For more information, or to explore this further, please contact:

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