

**Table 2.1:** Selection of community energy indicators, followed by their assessment based on three criteria as outlined in Neves and Leal, 2010.

STEP 2			STEP 3			
INDICATOR	DESCRIPTION	SOURCE	RELEVANCE FOR LOCAL ENERGY SUSTAINABILITY	POTENTIAL MESURABILITY AT LOCAL LEVEL	POWER OF LOCAL AUTHORITIES TO CHANGE OUTCOMES	
1	Final energy use per sector	The total amount of energy spent in a designated sector of a community.	Neves and Leal, 2010	✓	✓	✓
2	Ratio of local renewables production to local consumption of energy and electricity	The proportion of local renewable energy produced that is consumed locally.	Neves and Leal, 2010	✓	No. Currently, the Independent Electricity System Operator (IESO) is mandated to measure and report on the renewable energy that is locally generated.	No. Renewable-energy that is locally generated feeds into the electricity grid, which is managed by the Ontario Power Authority (OPA).
3	Industrial energy intensity	The amount of energy required by the manufacturing sector.	Neves and Leal, 2010	✓	✓	✓
4	Agricultural energy intensity	The amount of energy required by the agriculture sector.	Neves and Leal, 2010	✓	✓	✓
5	Service/commercial energy intensity	The amount of energy required by the service and retail sectors.	Neves and Leal, 2010	✓	✓	✓
6	Household energy intensity	The amount of energy required by individual households.	Neves and Leal, 2010	✓	✓	✓

STEP 2			STEP 3			
INDICATOR	DESCRIPTION	SOURCE	RELEVANCE FOR LOCAL ENERGY SUSTAINABILITY	POTENTIAL MESURABILITY AT LOCAL LEVEL	POWER OF LOCAL AUTHORITIES TO CHANGE OUTCOMES	
7	Transport energy intensity	The amount of energy required by the transportation sector (not-including public-transit).	Neves and Leal, 2010	✓	✓	✓
8	Public transit ridership	Access to and utilization of local and regional public transit.	Neves and Leal, 2010	✓	✓	✓
9	Emissions of air pollutants from road transport activities	The total amount of emissions generated by road freight transportation.	Neves and Leal, 2010	✓	No. As air pollutants are dispersed into the atmosphere, air quality measurement is done at a regional scale.	No. A regional approach is required in order to measure air quality and implement programs to address it.
10	Renewable energy share in energy and electricity	The proportion of energy generated by renewable sources within the total energy mix.	Neves and Leal, 2010	✓	No. Although the information is available to municipalities, it is the IESO's responsibility to measure and report on the renewable energy that is locally generated.	✓
11	Share of household income spent on fuel and electricity	Household income before taxes and other important monthly payments, i.e. mortgage payments.	Neves and Leal, 2010	✓	✓	✓

STEP 2			STEP 3			
INDICATOR	DESCRIPTION	SOURCE	RELEVANCE FOR LOCAL ENERGY SUSTAINABILITY	POTENTIAL MESURABILITY AT LOCAL LEVEL	POWER OF LOCAL AUTHORITIES TO CHANGE OUTCOMES	
12	Ratio of green energy jobs to population	Proportion of employment derived from the implementation of green energy initiatives.	Neves and Leal, 2010	✓	No. This indicator is specifically controlled by the Ministry of Energy and Infrastructure.	No. The strategies to encourage and provide incentives to 'green' jobs are created at the Provincial government level.
13	Responses to public consultations of energy-related projects	Government provides follow-up to public concerns and questions raised in energy consultation projects.	Neves and Leal, 2010	✓	✓	✓
14	Locally available finance schemes for energy efficiency and renewable energy	Introduction of finance schemes (i.e.: energy performance bonuses and feed-in-tariffs).	Neves and Leal, 2010	✓	✓	✓
15	Awareness raising campaigns on energy issues	Development of a communications strategy to sensitize local community about energy.	Neves and Leal, 2010	✓	✓	✓
16	Public participation in energy-related policy-making	Includes active participation, consultation and information to the community on energy-related projects.	Neves and Leal, 2010	✓	✓	✓

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INDICATOR	DESCRIPTION	SOURCE	RELEVANCE FOR LOCAL ENERGY SUSTAINABILITY	POTENTIAL MESURABILITY AT LOCAL LEVEL	POWER OF LOCAL AUTHORITIES TO CHANGE OUTCOMES
17	Local authority advice and assistance to the citizens on energy issues	Local capacity to answer questions and propose energy solutions.	Neves and Leal, 2010	✓	✓
18	GHG emissions from energy issue, per capita and per unit of GDP, and by sector	The amount of greenhouse gases emitted as a result of the total consumption of energy, by different groups of individuals.	Neves and Leal, 2010	✓	No. This indicator is currently measured at the Provincial scale.*
19	Primary energy use per capita	Refers to the total use of energy before transformation to other end-use fuels per capita.	Neves and Leal, 2010	✓	No. This indicator can only be correctly measured at the Provincial scale. No. In Canada, this indicator has regional/Provincial scale.

Source: report author.

**Notes:**

1. The Independent Electricity System Operator (IESO) is responsible for balancing the supply of and demand for electricity in Ontario, directing its flow across the province's transmission lines. The IESO monitors the electricity system, identifying and reporting on what is required to maintain reliability. Source: [www.ieso.ca](http://www.ieso.ca)

2. The Ontario Power Authority (OPA) is responsible for ensuring a reliable, sustainable supply of electricity for Ontario. Its key areas of focus are planning the power system for the long term, leading and coordinating conservation initiatives across the province, and ensuring development of needed generation resources. Source: [www.powerauthority.on.ca](http://www.powerauthority.on.ca)

\* At the time this research was conducted (September 2010-April 2011), not all municipalities in Ontario had the capacity to take on this task upon themselves. Therefore, as this indicator cannot be applied systematically across all municipalities in Ontario, it is not included.

**Table 2.2:** List of additional indicators derived from the Canadian literature review (FCM, 2009 and CEA, 2010).

	INDICATOR	DESCRIPTION	SOURCE	REMARKS
20	Supportive energy policies within the Official Plan	Official Plans should include provisions related to energy conservation and/or energy generation in a sustainable manner.	FCM, 2009	Applicable
21	Development of Energy Master Plans	An Energy Master Plan reflects a community's vision and goals for energy consumption and conservation. It can also address carbon neutrality targets.	FCM, 2009	Applicable
22	Development of Secondary Plans and Municipal Energy Strategies	Secondary Plans explore the fine details in regards to energy planning, i.e. design guidelines and development approaches to intensification.	FCM, 2009	Applicable
23	Zoning By-Laws fostering energy conservation	Zoning by-laws, as a tool for land-use control, can promote high-density and mixed-used neighborhoods, establishing the necessary conditions for alternative energy/heating supply utilities.	CEA, 2010	Applicable
24	Use of locally available financial incentives to foster energy conservation	Include Local Improvement Charges, Development Cost Charges, Tax Exemptions and Building-Retrofit Incentives.	CEA,2010	Applicable
25	Local Service Area By-law to establish requirements for energy services	It can require buildings, within the service area, to connect to a specific energy source (i.e.: hydro or renewables as fuel source in district-heating plants).	CEA, 2010	Applicable
26	Community energy mapping	Measures and reports on a community's GHG emission profile. Can include emissions from on-road transportation, buildings, solid waste and land-use changes (i.e.: deforestation)	CEA, 2010	Applicable
27	Performance label schemes	Energy labels give an overview of the energy-intensity of a particular building or house. It functions as an informative label when a building/house is sold or rented.	CEA, 2010	Applicable

**Source:** report author.

**Table 2.3:** Grouping and elimination of indicators that are repetitive or very similar in nature, as recommended by Neves and Leal, 2010.

1. ALL APPLICABLE INDICATORS	2. GROUPED INDICATORS	3. FINAL LIST OF INDICATORS
Final energy use per sector Industrial energy intensity Agricultural energy intensity Service/commercial energy intensity Household energy intensity Transport energy intensity Public transit ridership	Responses to public consultations of energy-related projects Awareness raising campaigns on energy issues Public participation in energy-related policy-making Local authority advice and assistance to the citizens on energy issues	<b>Public Consultation and Engagement in Energy Projects</b>
Responses to public consultations of energy-related projects Locally available finance schemes for energy efficiency and renewable energy Awareness raising campaigns on energy issues Public participation in energy-related policy-making Local authority advice and assistance to the citizens on energy issues	Use of financial incentives to foster energy efficiency, conservation and renewable energy Locally available finance schemes for energy efficiency and renewable energy	<b>Locally Available Financial Instruments</b>
Supportive energy policies within the Official Plan Development of Energy Master Plans Development of Secondary Plans and Municipal Energy Strategies Zoning By-Laws fostering energy conservation Use of financial incentives to foster energy efficiency, conservation and renewable energy Local Service Area By-law to establish requirements for energy services	Final energy use per sector Industrial energy intensity Agricultural energy intensity Service/commercial energy intensity Household energy intensity Transport energy intensity Community energy mapping Performance Label Schemes Share of household income spent on fuel and electricity	<b>Community Energy Mapping, Reporting and Labelling</b>
Community energy mapping Performance label schemes Share of household income spent on fuel and electricity	Public transit ridership	<b>Public Transit Ridership</b>
	Supportive energy policies within the Official Plan Development of Energy Master Plans Development of Secondary Plans and Municipal Energy Strategies Zoning By-Laws fostering energy conservation Local Service Area By-law to establish requirements for energy services	<b>Supportive Energy Policies and Strategies at the Local Level</b>

**Table 2.4:** Final Indicators for Community Energy Planning. Source: report author.

<b>FINAL INDICATORS FOR COMMUNITY ENERGY PLANNING</b>	
<b>1. PUBLIC CONSULTATION AND ENGAGEMENT IN ENERGY PROJECTS</b>	Comprises the activities undertaken in the process of community participation. This indicator represents public consultation in energy-related projects, public participation in energy policy-making, the development of public awareness campaigns on energy issues, and local authority advice and assistance to citizens on energy sustainability.
<b>2. LOCALLY AVAILABLE FINANCIAL INSTRUMENTS</b>	Availability of local finance tools, incentives or mechanisms to foster energy sustainability and that can be administered by local planning departments. These mechanisms include energy performance bonuses, local improvement charges, development cost charges and building-retrofit incentives.
<b>3. COMMUNITY ENERGY MAPPING, REPORTING AND LABELING</b>	<p>Represents all the activities related to mapping, inventorying and labeling of a community's energy intensity. It includes documenting the energy consumption of key sectors, such as residential, commercial, industrial, institutional, transportation and agricultural sectors.</p> <p>This indicator also includes energy performance labeling, which provides a visual representation of the energy mapping exercise. Labels can include information related to the energy consumption, GHGs and other air pollutants emitted by road-transportation activities, households, civic buildings and other built-structures.</p>
<b>4. PUBLIC TRANSIT RIDERSHIP</b>	Reflects the accessibility to and utilization of public transit systems.
<b>5. SUPPORTIVE ENERGY POLICIES AND STRATEGIES AT THE LOCAL LEVEL</b>	<p>This indicator groups an umbrella of activities that are related to developing supportive energy policies at the local level, including Official Plans, Secondary Plans (e.g. the development of Energy Master Plans that reflects a community's vision on energy sustainability), Zoning by-laws and Local Service Area by-laws that enforce urban standards to contribute to energy conservation and promote energy efficiency.</p> <p>The indicator pertaining to "share household income spent on fuel and electricity" has been included in this group, as it is directly related to, and a by-product of, zoning by-laws that promote high-density, compact development and mixed-used neighborhoods.</p>