Durham Community Energy Plan

Stakeholder Consultation Draft Final Report

May 2, 2017

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The Region of Durham has identified the preparation of a Community Energy Plan as a key component of climate change mitigation and adaptation planning for the community. The Community Energy Plan will also address planning for projected growth in Durham and opportunities for economic development. The Region, the eight local area municipalities and all five local utilities are collaborating, with support from the Ministry of Energy, to develop a Durham Community Energy Plan.

The partners include:

- Town of Ajax.
- Township of Brock.
- Municipality of Clarington.
- Enbridge Gas.
- Hydro One.
- City of Oshawa.
- Oshawa PUC.
- City of Pickering.
- Township of Scugog.
- Township of Uxbridge.
- Veridian Connections.
- Town of Whitby.
- Whitby Hydro.
- Region of Durham.

Consultation services for the planning, execution and reporting of the stakeholder sessions was provided by Helen Break, CPF, CTF and Karyn Dumble, CPF of The Monarch Park Group Inc.

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This document includes comments received by stakeholders in the order that they were recorded and do not reflect any ranking. Acronyms or shortened words have been expanded for clarity. In order to improve the accessibility of this document, stakeholder emphasis on certain words (capital letters or underlining) has been changed to bold font.

Executive Summary

A Durham Community Energy Plan (DCEP) is being developed to provide an articulation of what Durham Region's energy future to 2050 could look like, together with proposed goals and objectives including targets and timelines. The development of this community-wide plan is being coordinated by the Regional Municipality of Durham, in partnership with local municipal governments and energy utilities and is supported by the Ontario Ministry of Energy. A project Steering Committee comprised of all local partners provides advice and input to the process of developing the DCEP.

One of the major streams of activity in the development of the DCEP is stakeholder consultation to identify the initial suggestions of various organizations and individuals in Durham concerning:

- A vision of Durham's desired energy future.
- Goals to guide the development, use and management of energy in Durham.
- Objectives with targets and timelines to move us along the path to the desired energy future.

The Monarch Park Group Inc. was engaged to plan, execute, and report on the stakeholder consultation process. Two stakeholder consultation sessions, each supported by an extensive briefing document, provided input on the direction of the DCEP as follows:

- September 20, 2016, Brooklin Community Centre and Library (44 participants).
- February 28, 2017, Oshawa Civic Auditorium Complex (63 participants).

Input was also provided through meetings of the project Steering Committee.

Elements of the Vision

The stakeholder consultation identified seven elements of the 2050 vision, each one supported by a number of goals and objectives:

- Innovative, smart and diversified energy solutions (2 goals, 1 objective, 1 to be determined).
- Transparent, accountable and committed to the vision (1 goal, 4 objectives).
- Reduced carbon footprint (3 goals, 20 objectives, 1 to be determined).
- Economic prosperity, and community and environmental health (4 goals, 26 objectives, 1 to be determined).
- Reliable, resilient, integrated, sustainable and financially viable energy sources (1 goal, 12 objectives).
- In terms of cost, affordability for all! (1 goal, 8 objectives)

- Community collaboration for innovative solutions (1 goal, 4 objectives).

Key Messages

As a result of the two stakeholder consultation sessions, the following key messages were identified:

- There is a need for community partnerships to develop and implement the DCEP.
- There is a desire for self-sufficiency with many references to diversifying our energy sources, including renewable energy, and decreasing consumption.
- Education and communication are important to ensure energy literacy, understand the benefits of the DCEP, and report on measures.
- There is a need for policy, process and regulatory changes to remove administrative barriers.
- Financial incentives and disincentives will be needed.
- Transportation is a key element (e.g. more active transportation, more electric vehicles, and more transit through DRT, GO and LRT).
- Community design needs to result in walkable, integrated and mixed-use neighbourhoods.
- Local employment is important both in terms of green technology employment and telecommuting to reduce travel.
- The DCEP should significantly decrease GHG emissions and link to the Durham Community Climate Adaptation Plan.

Next Steps

This initial stakeholder consultation input will be used in conjunction with the baseline energy data (prepared by Durham Sustain Ability) to provide guidance to the energy planning stage of the DCEP process (which will be undertaken by Sustainability Solutions Group) under the direction of the Steering Committee. The scope and content of the DCEP will not necessarily be limited to this set of inputs but rather will be guided by this early advice.

Further stakeholder input, as well as public comment and guidance by Regional and local municipal Councils, will be undertaken before the final proposed Durham Community Energy Plan is submitted to Councils for approval.

Terms and Acronyms

AODA ..... Accessibility for Ontarians with Disabilities Act

CHP ..... combined heat and power

DCEP ..... Durham Community Energy Plan

EFW ..... energy from waste

ESA ..... Electrical Safety Authority

EV ..... electric vehicle

FIT ..... Feed-In Tariff

GDESP ..... Guelph District Energy Strategic Plan

GEERS ..... Guelph Energy Efficiency Retrofit Strategy

GHG ..... greenhouse gas

GJ ..... gigajoule

HERS ..... home energy rating system

KPI ..... key performance indicator

kWh ..... kilowatt hour

LDC ..... local distribution company

LRT ..... light rail transit

LTEP ..... Ontario's Long-Term Energy Plan

microgrid ..... a small-scale power grid that can operate independently or in conjunction with the area's main electrical grid

negawatt power ..... a theoretical unit of power representing an amount of electrical power (measured in watts) saved

Net-Zero ..... zero net energy consumption where the total amount of energy used on an annual basis is roughly equal to the amount of renewable energy created

NIMBY ..... not in my backyard

PV ..... photovoltaic

RNG ..... renewable natural gas

SOV ..... single occupancy vehicle

Table of Contents

1. Project Approach

> Community Energy Planning is a comprehensive, long-term plan that helps to define community priorities around energy with an objective to explore how energy could be generated, delivered and used in the community now and in the future.

The development of the Durham Community Energy Plan (DCEP) is being coordinated through the Office of the Regional Chief Administrative Officer, in partnership with municipal governments and local utilities and supported by the Ontario Ministry of Energy's Municipal Energy Plan (MEP) program. A project Steering Committee comprised of local partners provides advice and input into the process of developing the DCEP, including stakeholder consultation, which is integral to a successful community energy plan process and the subject of this report.

The benefits of developing a community energy plan are many, including:

- A better understanding of where and how energy is used in the community.
- Articulation of a community energy vision.
- Identification of potential energy supply limitations and plans to address them.
- Fostering local sustainable energy solutions to increase energy security/resiliency.
- Improving energy efficiency and reducing energy use and, therefore, cost.
- A more compact, sustainable urban form that integrates energy considerations into growth-related decisions.
- Reducing greenhouse gas emissions and improving resident health through improved air quality.

2. Stakeholder Consultation Process

Two stakeholder consultation sessions were held to provide input on the direction of the DCEP. The first session was held on Tuesday, September 20, 2016, at the Brooklin Community Centre and Library. The second session was held on Tuesday, February 28, 2017, at the Oshawa Civic Auditorium Complex. Forty-four stakeholders attended the first session and 63 attended the second (see Appendix A for a list of stakeholders). A briefing document was prepared and distributed to stakeholders prior to each meeting, both of which are available on the Region's energy planning website.

2.1 Purpose of the Consultation Process

The two consultation sessions were held to identify a vision of what Durham Region's energy future could look like and to establish possible goals and objectives for the DCEP. Extensive participation by the stakeholders resulted in two successful sessions. The results of both

meetings are captured in this report, along with summaries of participant evaluation forms, which are included as Appendices J and K.

The following outlines the agenda for both sessions. These consultations were conducted as part of a larger project timeline, shown on page 3.

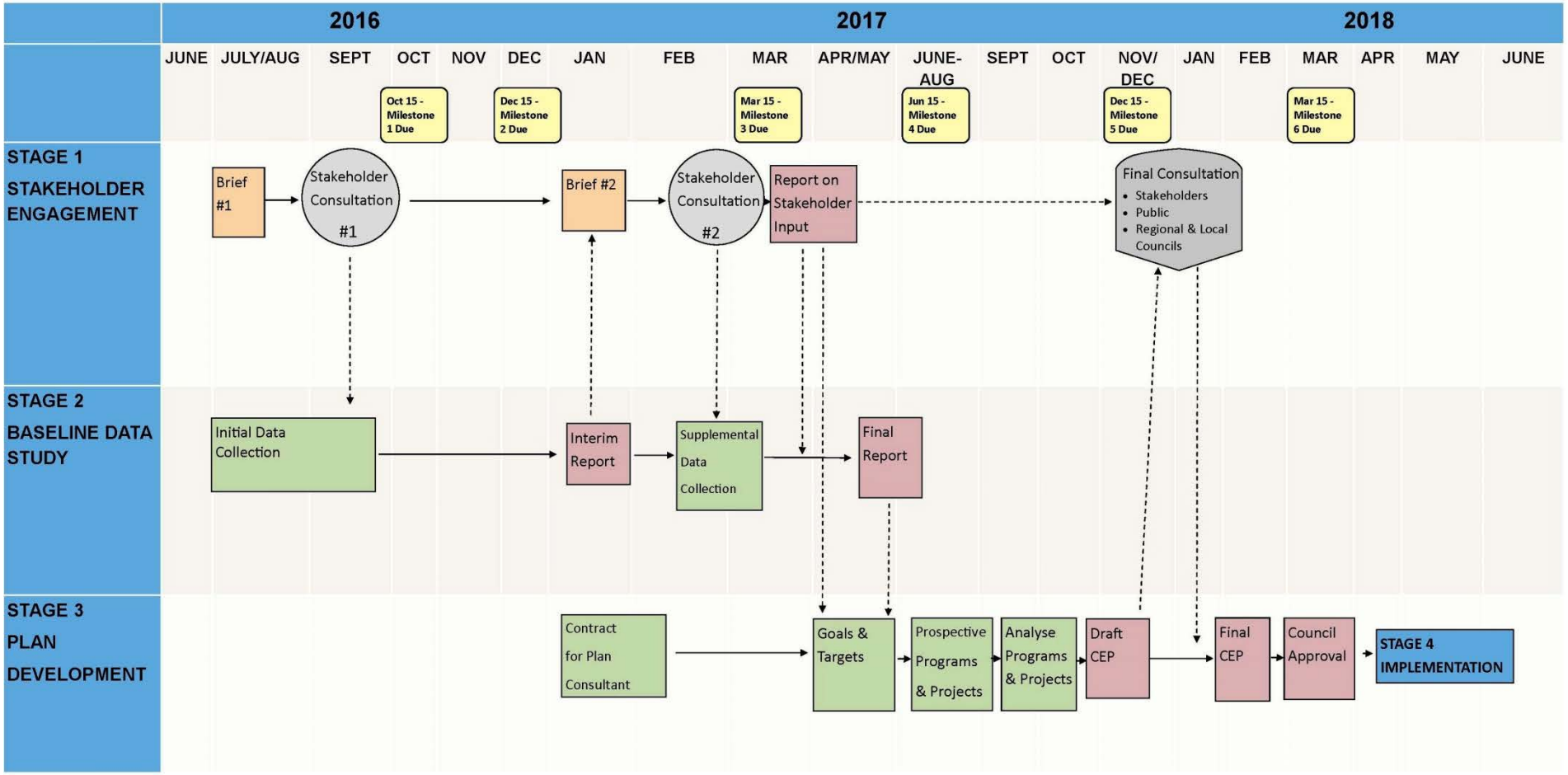
Stakeholder Consultation #1 Agenda – September 20, 2016:

- Welcome and Introductions.
- Future State “Blue Sky” Thinking.
- Vision Workshop.
- Goals and Objectives Setting.
- Future Energy Projects.
- Wrap-up and Next Steps.

Stakeholder Consultation Session #2 Agenda – February 28, 2017:

- Welcome and Introductions.
- Presentation: Durham Energy Baseline Data Study.
- Presentation: Community Energy in Action.
- Activity: Community Energy in Action.
- Stakeholder Working Session #1: Headline News.
- 2030 and 2050 Vision Windows.
- Stakeholder Working Session #2: Improving Goals and Objectives.
- Stakeholder Working Session #3: Creating Big, Bold, and Outrageous Goals.
- Wrap-up and Next Steps.

2.2 Project Timeline



2.3 Future State “Blue Sky” Thinking

The first working session of September 20, 2016, challenged stakeholders to think big, bold, long-term and limitless. Using magazine and card images, stakeholders created a collage of images that they felt captured what our energy future could look like from one of three perspectives: municipality, energy producer/supplier or energy consumer. Common themes arising included:

- Need for a strong network/teamwork.
- Shift needed in priorities/ power shift.
- Need all forms of energy at all levels (e.g. our eggs are no longer in one basket).
- Anything is possible/about transformation/race against time.
- The power of natural systems to get us where we need to go/find ways to do things with fewer environmental consequences.

This work served to inform the rest of the process.

3. Vision Workshop

What are the key elements that comprise our bold, long-term vision of our energy future?

Building on the work of the first activity, stakeholders at the September 20, 2016, session were asked to formulate a vision for the DCEP.

A good vision:

- Is a clear and compelling statement.
- Mobilizes and energizes people.
- Is ambitious yet attainable.
- Is memorable.
- Elicits a personal connection.
- Is bold and challenging.
- Embraces stakeholder needs.

Stakeholders were asked to answer focus questions individually and then to share their ideas within a group of three. Each triad was asked to generate five responses to the focus question, writing one response per card. The cards were collected and posted to the wall, collated by the stakeholders through discussion into related groupings and titled. Appendix B captures the focus question and the responses generated by the group. The seven key elements of the 2050 vision for Durham's energy future as identified September 20, 2017, are:

- Community collaboration for simple solutions.
- Economic prosperity, and community and environmental health.
- In terms of cost, affordability for **all!**
- Innovative, smart and diversified energy solutions.
- Transparent, accountable and committed.
- Reduce footprint through technology, conservation and policy.
- Reliable, resilient, integrated, stable funding and sustainable.

4. Goals and Objectives Setting

Setting goals and objectives was the primary activity at the two stakeholder sessions, as well as one of the Steering Committee meetings. The iterative processes allowed for the creation, revision, and consensus building around each goal and objective. Below is an overview of the processes participants took part in to create and refine both goals and objectives.

4.1 Stakeholder Session #1

For each of the seven vision elements, stakeholders at the September 20, 2016, stakeholder consultation session were asked to answer the following focus questions:

- What is the goal statement that we can identify for each element of the vision?
- What are the barriers that block the achievement of the goal?
- What are the critical success factors that should be in place to ensure the success of achieving the goal?
- What are our objectives[1] for the goal?

Goal

Definition: Broad, long-term aims that define accomplishment of the vision. What is important to us?

Format: Infinite verb (e.g. provide, promote, enhance, maximize, contribute, attract, foster, etc.), adjective, noun.

Example: "Provide high quality information to consumers about energy conservation measures.**"**

Objective

Definition: Specific, quantifiable, realistic targets that measure the accomplishment of a goal over a specified period of time.

Format: Directional (e.g. increase, decrease, reduce or maintain). Include a measure and target.

Example: "Increase renewable energy's market share to 100% by 2050."

In response, the stakeholders brainstormed possible goal statements for each vision element and selected one goal. They then identified related barriers and critical success factors that would affect the achievement of the goal. The last step was to develop objectives for the goal. Using dots, participants were then asked to each mark five objectives that they felt should become a focus of the DCEP. Appendix C captures the work of the stakeholders at the September 20, 2016, stakeholder consultation session.

[1] The intent was to develop SMART (Specific, Measureable, Achievable, Relevant/Reliable and Time-bound) objectives.

4.2 Stakeholder Session #2

At the second stakeholder session on February 28, 2017, two presentations and several activities/working sessions throughout the day helped to stimulate thinking and creativity.

4.2.1 Presentations

The first presentation on February 28, 2017, was by Christine Ball of Durham Sustain Ability who, on behalf of Terry Green, spoke to the Durham Energy Baseline Data Study. Some highlights of the study include:

- Electricity consumption comprises only 17% of total energy use but represents 39% of total energy costs.
- Solar energy is a relatively small portion of renewables, however, it has grown 20 fold in the last 4 years.
- Transportation sector consumes the most energy (36%) and contributes the most GHG emissions (47%).

The second presentation was by Gaby Kalapos of the Clean Air Partnership. Gaby's Community Energy in Action presentation provided a tour of community energy actions being undertaken in jurisdictions across Ontario and beyond, including the benefits and results delivered as a result of implementation.

4.2.2 Activity: Community Energy in Action

Following the presentations, stakeholders were asked to delve deeper into specific community energy plans. Stakeholders reviewed one of the five case studies found in Brief #2, with a focus on two questions:

- If this case study were set in Durham Region, what barriers would there be to its successful implementation?
- What would your approach be to promote the plan's success in Durham Region?

The community energy plan case studies and the outcomes of the activity can be found in Appendix D.

4.2.3 Working Session #1: Headline News

The purpose of this session on February 28, 2017, was to continue to encourage stakeholders to think actively about options for Durham's energy future. A series of seven possible newspaper headlines were offered, highlighting "events" taking place in the future. Stakeholders delved into the circumstances around the "events" of the headlines, focusing on identifying the next steps required. The headlines were:

- June 15, 2025 - "Durham GHG Emissions Down 25%".
- September 3, 2030 - "Energy from Local Renewables Reaches 35% in Durham Region".
- March 23, 2020 - "Council Approves First Net-Zero Energy Subdivision".
- November 16, 2030 - "Electric Vehicles now 65% of Vehicle Sales".
- August 30, 2035 - "Durham Energy Self-Sufficiency Reaches 50%".
- Feb 28, 2019 - "OPG and Province Announce Closure of Pickering Nuclear Plant by 2020 and Halt to Durham Refurbishment".
- Feb 28, 2022 - "Province announces extension of Pickering's Operation Beyond 2024 and a New Build at Darlington starting in 2030".

Stakeholders were encouraged to work on two headlines each, answering the following four questions:

- What local actions contributed to this headline?
- Who would be most directly affected by this?
- What would be the impacts of this change?
- What are the next steps to keep moving forward from this headline?

The one headline that garnered the most interest from stakeholders was municipal council approval of the first Net-Zero energy subdivision. Appendix E captures the outcomes of this session.

4.2.4 Activity: 2030 and 2050 Vision Windows

Prior to and over the lunch break, stakeholders were encouraged to get creative. Using the "A Window on Energy in Durham – 2015 Baseline" poster (Appendix F) as a starting point, the goal was to create posters of what Durham's energy future would look like in 2030 and 2050.

4.2.5 Stakeholder Working Session #2: Improving Vision Elements, Goals and Objectives

As identified earlier, participants at the first stakeholder session identified vision elements, then created goals and objectives to guide the development of the community energy plan. At the second stakeholder session, a set of revised vision statements, goals and objectives were presented to the participants, who were tasked with further improving them, through this iterative process. The evolution of the vision elements, goals and objectives is captured in Appendix G.

Between the two stakeholder sessions, the Steering Committee was given an opportunity to weigh in on the vision, goals and objectives created at session one, as well as the chance to develop additional goals. They came up with an additional fourteen possible new goals, which were shared at session two during the "Improving Vision Elements, Goals and Objectives" activity. The fourteen new goals offered for stakeholder consideration were:

- Develop a diversified energy hub that would be a centre of excellence for innovation, collaboration and research in Durham Region.
- Seed an incentive mechanism to support local energy initiatives via a substantial investment.
- Develop, adopt and report on progress toward local conservation goals of energy producers, generators, distributors and major users by 2022, the end of the next Provincial Long-Term Energy Plan.
- Provide light rail transit (LRT) in lakeshore municipalities and Toronto by 2050.
- Extend GO Transit rail service to Uxbridge and Beaverton.
- Ensure all commercial and municipal fleet vehicles run on renewable fuels or electricity by 2030.
- Advocate for the real estate sector to list energy ratings of homes by 2020.

- Create healthy, walkable communities with employment close to home and telecommute options.
- Promote change to the Electrical Code to allow Tesla Powerwall battery use in Canada.
- Enhance electrical and natural gas grid flexibility for new technologies and energy sources.
- Provide free basic energy service for all.
- Ensure all buildings Net-Zero energy by 2050
- Promote the creation of a new multi-fuel co-operative utility for Durham Region.
- Support establishment of a group to lead and spearhead community solutions building at the local level (e.g. Durham Sustain Ability or Green Communities Canada RAIN Community Solutions).

In order to reduce the number of goals, whilst improving their quality, participants used a blind voting process that determined the three goals with most favoured standing. The Steering Committee created three goals that received the greatest allocation of points during the blind voting process are:

1. Create healthy, walkable communities with employment close to home and telecommute options.
2. Enhance electrical and natural gas grid flexibility for new technologies and energy sources. (Tied with #3)
3. Provide light rail transit (LRT) in lakeshore municipalities and Toronto by 2050. (Tied with #2)

Stations were set up around the room - two stations for each of the top three goals. Stakeholders were invited to move to the station of their choice and develop objectives for the goal before them. Stakeholders also offered modifications to some of the existing goals. The results are captured in Appendix H.

4.2.6 Working Session #3: Big, Bold Goals

Stakeholders at the February 28, 2017, session were asked to reflect on the projects and possibilities explored thus far. Using this reflection as a jumping off point, they were challenged to identify the most impactful goal that they could create to ensure that Durham is able to prosper as a region in 2050. They were asked to think big, think bold and be outrageous. Nine goals were drafted; each one vetted and improved upon twice. The final wording was offered forward for a round of blind voting using a five-point Likert scale. The allocation of votes and related comments, along with the three iterations of each goal, are included in Appendix I.

The three big, bold goals that the stakeholders voted to add to the final list of goals are:

1. Durham Region develops a smart energy system to balance need versus generation, creating surplus renewable energy that is exported for long-term economic viability and a net-zero community.
2. Develop integrated, mixed use, self-sufficient communities.
3. Durham Region becomes an international leader in carbon neutrality and sequestration, offsetting national GHG emissions and profiting from surplus renewable energy.

Lastly, as a result of the day's activities, other goals and objectives were offered. They are shown below:

- Larger price differential between on and off-peak hours.
- Provide free basic energy service for all.
- Increase consumer education and grow self-awareness.
- Integrate sustainable transportation solutions including LRT, GO expansion and electric fleets by 2020.
- Achieve Net-Zero energy communities (built environment and transportation including public sector) by 2050. Possible objectives included: Increase biogas production infrastructure and Recommit to the Feed-In Tariff (FIT) Program.

5. Final Vision Elements, Goals and Objectives

To recap, the following final vision elements, goals and objectives (not in order of priority) are based on input from both stakeholder sessions, the project Steering Committee and the project team.

Vision Element 1: Innovative, Smart and Diversified Energy Solutions

Goal	Objectives
Develop and promote policies and programs that encourage new community partnerships, acceptance of newer and emerging sustainable eco-technologies and guide the development of diversified energy sources at multiple scales of energy production and consumption.	• Increase Durham Region's energy self-sufficiency and resiliency by increasing local renewable energy sources to 35% by 2030.
Develop a smart energy system to balance need versus generation, creating surplus renewable energy that is exported for long-term economic viability and a net-zero community.	• To be developed.

Vision Element 2: Transparent, Accountable and Committed to the Vision

Goal	Objectives
Measure and communicate the quantitative and qualitative benefits (economic, environmental and social) of implementing the DCEP to increase stakeholder and community support.	• Increase public energy literacy regarding energy sources, impacts and costs via the collaborative development of a communication strategy by 2nd quarter 2018 for implementation following the endorsement of the DCEP by Regional Council. • Improve (100%) energy literacy by 2022 thru various avenues including apps, school curriculum, web information etc. • Increase user understanding of energy costs by advocating for consistent simplification, breakdown and explanation of all costs on all local utility energy bills (including global adjustment charge) by 2019. • Maintain and increase stakeholder commitment to the DCEP vision through annual public reporting to Regional Council on progress (financial and otherwise) of Plan implementation with posting to the DCEP webpage.

Vision Element 3: Reduced Carbon Footprint

Goal	Objectives
Provide user-friendly tools, targets and incentives for consumers and communities to reduce their energy consumption.	• Decrease carbon-based energy consumption by 10% by 2025, 15% by 2035, 45% by 2045 and 50% by 2050. • Decrease energy use via the development of new local policies and advocate for early implementation of a more stringent Building Code requirement that all new housing be Net-Zero energy by 2025 and all retrofits by 2040. • Increase biogas production. • Recommit to the Feed-In Tariff (FIT) program.
Ensure electrical and natural gas grid flexibility for distributed integrated low carbon energy generation.	• Reduce restrictions on energy suppliers through O. Reg. 22/04 (distribution code) to allow for easier adoption of distributed energy reserves. • Increase public awareness surrounding requirements for adopting micro fit particularly surrounding safety. • Increase adoption of district energy systems (micro) for households, business and industry. • Increase renewable natural gas injection in pipelines to 10% by 2030. • Establish a stepped process to enhance electrical grid – power and smart tech – new build by 2025. Retrofit existing 100% by 2030. • Increase hydrogen gas in natural gas pipes to 5% by 2030. • Increase natural gas infrastructure in Durham Region to 100% penetration by 2040. • Increase electric vehicle charging in all new government/civic buildings to 100% by 2020. • Increase all renewable energy technology to base fleets (electric or green fuel) to 100% by 2025. • Increase natural gas system: engage natural gas utilities to build renewable natural gas. • Increase grid system: engage local distribution companies to build “E” infrastructure to facilitate two way power and renewable natural gas infrastructure. • Increase electrical grid to accommodate rail electrification: engage utilities to build out by 2030. • Identify and promote thermal networks (low carbon district heating) within existing grid structures. • Determine where in the grid system retrofits would be required to allow for micro-grid adoption and conduct those retrofits. • Standardize Electrical Safety Authority (ESA) regulations on local renewable energy generation by 2030. • Facilities to make biofuel into renewable by 2025 in two rural hubs.

Goal	Objectives
Durham Region becomes an international leader in carbon neutrality and sequestration, offsetting national GHG emissions and profiting from surplus renewable energy.	• To be developed.

Vision Element 4: Economic Prosperity, and Community and Environmental Health

Goal	Objectives
Incorporate four components of sustainability (economic, environmental, social and cultural) when making community planning decisions.	• Increase energy production from Durham community energy projects to a minimum of 50% of consumption by 2050. • Increase the number of local energy businesses by 50% by 2030. • Increase public/mass transit use by 12% by 2031 with 1%/year increase to 2050. • Increase by 30% the energy dollars/expenditures that stay in Durham by 2030 and 4%/year thereafter (e.g. more electric vehicle use, PV or biomass generation locally). • Increase the proportion of electric vehicles in Durham-based light duty vehicles to 50% by 2030, 75% by 2040 and 100% by 2050 by providing supportive public infrastructure and policies. • Increase the proportion of the municipal fleet fueled by renewable energy to 50% by 2030, 75% by 2040 and 100% by 2050. • Double our green employment (green, clean technology, energy creation and efficiency) by 2030.
Provide light rail transit (LRT) in lakeshore municipalities connecting to Toronto by 2050.	• Increase bus service along Hwy 2 from Newcastle to Pickering by 2015. • Increase mixed-use development along Hwy 2 corridor for increased light rail transit (LRT) user base. • Increase collaboration with developers and planners to prioritize transit localization (hub development) (e.g. maximum 500-metre walking distance to transit). • Increase LRT opportunities for north/south connections to GO Transit lines. • Increase opportunities to use existing rail infrastructure for LRT along lakeshore and also further north (e.g. Hwy 407). • Increase density along regional corridors. • Decrease single occupancy vehicles (SOV's). • Increase Durham's share of provincial transportation funding. • Develop integrated LRT along Hwy 2 from Newcastle to Pickering by 2035. • Integrate sustainable transportation solutions including LRT, GO Transit expansion and electric fleets by 2020. • Optimize public transit connections/efficiencies. • Provide business case to justify LRT.

Goal	Objectives
Create healthy, accessible communities with an excellent and well-integrated active transportation network, employment close to home and telecommute/virtual work options.	• Increase all forms of mobility by 2022 through the creation of a walkable community master plan that aligns with the DCEP, includes an inventory of existing assets (sidewalks), connects existing active transportation networks throughout Durham Region and enhances safety and accessibility (lighting and landscape design). • Decrease car use and parking through disincentives. • Increase access to free internet everywhere including rural. • Increase internet service – high speed – to encourage telecommuting and virtual meetings and include this as part of economic development plans. • Increase employers' comfort level around telecommuting and actively promote the benefits of telecommuting and shared office space through education. • Improve the way communities are built using a more modular system that makes commercial centres easier to access by foot. • Include sustainability in asset management.
Develop integrated, mixed use, self-sufficient communities.	• To be developed.

Vision Element 5: Reliable, Resilient, Integrated, Sustainable and Financially Viable Energy Sources

Goal	Objectives
Maximize community energy self-sufficiency and resiliency, and maintain flexibility and sustainability.	• Increase grid capacity to accommodate electrical vehicle charging. • Increase number of EV owners charging/discharging during off-peak hours through education. • Increase price differential between on and off-peak hours. • Increase resiliency measures when designing and constructing new infrastructure or retrofitting existing infrastructure. • Increase cost synergies during infrastructure work (roads, sewers, gas, etc.). • Increase revenue neutral financial mechanisms for energy projects to be invested into future energy initiatives. • Decrease energy consumption in existing and new multi-residential and business units through the installation of individual energy meters by 2025. • Advocate for the autonomy of electric and natural gas utilities to allow for new financing options. • Outline/identify key locations/buildings for extreme weather events (evacuation centres) and make sure local and dispatchable heat and electricity at these locations. • Ensure back-up power available for vulnerable populations. • Incorporate Durham Region's Climate Adaptation Plan. • Increase diversity of supply and fuel mix.

Vision Element 6: In Terms of Cost, Affordability for All!

Goal	Objectives
Provide affordable energy services to all consumers.	• Reduce demand by increasing energy efficiency. • Increase micro-generation and energy storage being used by all customers by 2050. • Increase advocacy for Province to continue to tax unsustainable fossil fuel practices (carbon tax; cap and trade tax) and fund/incent sustainable practices. • Increase/develop an incentive program to install micro/renewable energy to help decentralize the grid. • Increase options for consumers (microgrid, solar islanded mode, multiple/competitive market supply) that supports a smarter grid supply. • Increase load shifting to night. • Increase number of incentives for electric vehicles. • Increase consumer education about the cost of energy.

Vision Element 7: Community Collaboration for Innovative Solutions

Goal	Objectives
Engage community stakeholders through collaboration to develop effective and innovative solutions.	• Maintain an up-to-date DCEP communication plan. • Increase commitment and involvement of the community in the DCEP and its implementation to 90% by year end 2018. • Decrease administrative barriers (streamline the process) to distributed energy resource generation (re. Germany). • Regularly report successes and setbacks regarding the implementation of the DCEP and gather feedback.

6. Future Energy Projects

Completion of the DCEP requires information about what energy projects are coming on stream. To this end, stakeholders were asked at both stakeholder consultation sessions to identify future energy projects which are currently in the planning or conceptual stages.

Examples of new energy projects include:

- Biogas that the Regional Works Department is investigating.
- Net-Zero energy housing.
- District cooling in the Port Whitby redevelopment based on deep lake water cooling.

Approximately fifteen projects have been submitted and stakeholders were encouraged to submit any other projects to the Region.

7. Next Steps

The report following the second stakeholder consultation process will be provided to the stakeholders, project Steering Committee and the energy consultants who are charged with the development of the DCEP. Once a draft DCEP is available, a third round of consultation will take place involving stakeholders, the general public and municipal councils, as shown in the project timeline on page 5.

Appendix A: List of Stakeholders

Stakeholder Session #1, September 20, 2016

Name	Organization
Adrian Foster	Municipality of Clarington
Amy Burke	Municipality of Clarington
Arnim Vogel	Durham College
Brad Anderson	Regional Municipality of Durham
Carmina Tupe	Building Industry and Land Development Association (BILD)
Carrie-Ann Atkins	Oshawa Power and Utilities Corporation (OPUC)
Christine Drimmie	Regional Municipality of Durham
Craig Bartlett	Regional Municipality of Durham
Dave Forsyth	Gerdau Long Steel North America
David Risborough	Durham Agricultural Advisory Committee (DAAC)
Dimitri Pagratis	Regional Municipality of Durham
Don Terry	Ajax-Pickering Board of Trade
Eric Andres	Oshawa PUC Networks Inc.
Evan Wade	Whitby Hydro
Favio Scheuler	Whitby Co-Generation
Gabriella Kalapos	Clean Air Partnership
Grant McGregor	City of Pickering
Hamid Syed	City of Oshawa
Hida Manns	Trent University
Ingrid Svelnis	Township of Uxbridge
Jade Schoefield	Town of Ajax
Jennifer McKellar	University of Ontario Institute of Technology (UOIT)
Jiya Shoaib	Independent Electricity System Operator (IESO)
John Stevenson	Private Citizen
Joseph Green	Regional Municipality of Durham
JP Fernback	eV Fern Ltd.
Kate Ingram	Trent University
Laura Malyjasiak	Regional Municipality of Durham
Luisa Da Rocha	Independent Electricity System Operator (IESO)
Martin Vroegh	St. Marys Cement
Meagan Craven	Town of Whitby
Meaghan Harrington	City of Oshawa
Melissa Mirowski	University of Ontario Institute of Technology (UOIT)
Neil Clarke	Lakeridge Health
Ozair Chaudry	Durham Environmental Advisory Committee (DEAC)
Pam Stoneham	Durham College
Peter Stiel	Metrolinx
Rajendra Patel	Oshawa PUC Networks Inc.
Richard Gauder	Durham Region Roundtable on Climate Change (DRRCC)/CMS Web Solutions

Name	Organization
Robbie Goulden	Solar Energies
Steve Zebrowsky	Veridian
Susan Clearwater	Durham Environmental Advisory Committee (DEAC)
Tanya Roberts	Durham College
Vidal Guerreiro	Regional Municipality of Durham

Stakeholder Session #2, February 28, 2017

Name	Organization
Abid Syed	City of Pickering
Alex Benzie	Quality Urban Energy Systems of Tomorrow (QUEST)
Amy Burke	Municipality of Clarington
Anita DeVries	Durham Region Home Builders Association
Barry Neil	Durham Region Roundtable on Climate Change (DRRCC)
Ben Longstaff	Lake Simcoe Region Conservation Authority
Bob Camozzi	Durham Catholic District School Board
Brad Anderson	Regional Municipality of Durham
Brian Bridgeman	Regional Municipality of Durham
Christine Ball	Durham Sustain Ability
David Risebrough	Durham Agricultural Advisory Committee (DAAC)
Dimitri Pagratis	Regional Municipality of Durham
Don Armitage	Enbridge
Don Baron	Lakeridge Health
Doug Yates	General Motors of Canada
Eric Lacina	Durham College
Fabian Garcia	Summerhill
Glen Pleasance	Regional Municipality of Durham
Hamid Syed	City of Oshawa
Heather Brooks	Central Lake Ontario Conservation Authority
Hida Manns	Trent University
Hossam Gaber	University of Ontario Institute of Technology (UOIT)
Ian Lipton	The Carbon Accounting Company
Ian McVey	Ontario Climate Consortium Secretariat
Ian Nokes	Ontario Federation of Agriculture
Jade Schofield	Town of Ajax
Jeff Solly	Durham Region Roundtable on Climate Change (DRRCC)
Jodi Janwin	Town of Whitby
Joe Green	Regional Municipality of Durham
Joel Baetz	Trent University
JP Fernbach	eV Fern Ltd.
Kaitlyn Ittermann	City of Peterborough
Kate Ingram	Trent University
Kevin Wagner	General Motors of Canada
Lora Rigutto	Circuit Meter
Lori Buscher	Trent University
Marina Freire-Gormaly	University of Toronto
Mark Turney	Veridian
Matthew Lo turco	Durham College
Meaghan Craven	Town of Whitby

Name	Organization
Meaghan Harrington	City of Oshawa
Melanie Kawalec	City of Peterborough
Melissa Mirowski	University of Ontario Institute of Technology (UOIT)
Mirka Januszkiewicz	Regional Municipality of Durham
Nani Pradeepan	New Dawn Energy Solutions
Nicole Risse	Ontario Sustainable Energy Association
Patrick Sackville	Ontario Society of Professional Engineers (OSPE)
Peter Stiel	GO Transit
Ray Warner	General Motors
Richard Gauder	Durham Region Roundtable on Climate Change (DRRCC)
Sandra McEleney	Regional Municipality of Durham
Scott Grieve	Durham Catholic District School Board
Shelley Strain	Trent University
Sonal Birdi	Durham College
Tanya Roberts	Durham College
Taylor Gemmill	Enwave
Tim Short	Enbridge
Todd Hall	Durham Region Roundtable on Climate Change (DRRCC)
Vidal Guerreiro	Regional Municipality of Durham
Vijay Sood	University of Ontario Institute of Technology (UOIT)
Wajiha Shoaib	Independent Electricity System Operator (IESO)

Appendix B: Development of the Key Elements of Our Energy Future

Focus Question: What are the key elements that comprise our bold, long-term vision of our energy future?

Key Element	Ideas which Support the Key Element
Innovative, smart and diversified energy solutions	• SMART (e.g. Coordination of production, storage, distribution and reduce transmission losses). • Develop policies that keep stride with technologies. • Diversified (solar, wind, biomass/waste, human, hydro, nuclear). • Technology/solution lifecycle must be considered. • Achievable – is it realistic? • All encompassing (sources, uses, distribution). • Innovative and flexible (new ideas, adaptable policy, open to modifying approach). • Resilient, sustainable and affordable land use. • Innovation (education). • Development.
Transparent, accountable and committed	• Individual accountability for our energy choices. • Commitment to vision and goals. • Using monitoring and accountability to evaluate effectiveness (of the plan). • Transparent (costs/benefits).
Reduce footprint through technology, conservation and policy	• Transportation (personal electric, general electric, fossil). • Environmental responsibility (reduce carbon footprint, “clean” energy sources). • Low to Net-Zero impact of production on the environment • Conservation of energy. • GHG/Energy reduction must be local and global (leakage). • Promotes economic prosperity.
Economic prosperity, and community and environmental health	• Sustainable (social, economic, environmental) • Sustainable (economic, technologic, cultural, competitive, environmental) • Better communities (better air quality, less negative consequences, more options). • Efficient (generation, consumption). • Enabling individuals, businesses, community to be stakeholders of that energy future and not just consumers of it. • Promotes citizen health.

Key Element	Ideas which Support the Key Element
Reliable, resilient, integrated, stable funding and sustainable	• Integrated (electricity, transport, heat). • Abundant energy to meet future demand. • Implementable reliable energy. • Stability (funding mechanisms, reliable energy source, commitment to vision). • Reliable generation mix. • Resilient, sustainable and affordable transportation. • Resilient energy systems. • Integrated renewable energy plan. • Integration (flexible, distributed, adaptive, multi-scale). • Efficiency.
In terms of cost, affordability for **all!**	• Consumer affordability otherwise forget it! • Resilient, sustainable and affordable energy production and transmission.
Community collaboration for simple solutions	• Alignment with other core plans/documents (LTEP). • Collaboration among stakeholders. • Moving through complexity to reach simplicity. • Collaborative (stakeholdering). • Education, training, awareness, choice leads to technology options (cost competitive) ratepayer impact. • Change management for managing disruption.

Appendix C: Goals, Related Barriers and Critical Success Factors

Focus Questions: What is the goal statement that we can identify for each element of the vision? What are the barriers that block the achievement of the goal? What are the critical success factors that should be in place to ensure the success of achieving the goal? What are our objectives for the goal?

Using dots, participants were asked to each mark five objectives that they felt should become a focus of the DCEP. The number of dots are indicated for those objectives that received votes.

Vision Element 1: Innovative, Smart and Diversified Energy Solutions

Focus Question	Responses
Brainstormed Goals	• Multi-stakeholders participation promoted. • Identify diversified sources of energy (e.g. solar, wind, biomass, etc.). • Develop a framework for policies and programs that encourage multiple scales of smart energy production and consumption. • Provide incentives to encourage innovation, smart technologies and sustainable practices.
Chosen Goal	• Develop policies and programs for diversified energy sources at multiple scales of energy production and consumption.
Barriers	• Resistance to change (e.g. government, household). • Lack of funding. • Current infrastructure. • Potential costs (expensive). • Availability of alternative choices. • Lack of leadership (who will champion this?).
Critical Success Factors	• Key performance indicators to measure effectiveness. • Multi-stakeholder participation. • Financial incentives. • Long-term sustainable policies. • Infrastructure and resources. • Program implementation. • Research and development for technology.
Objectives	• Establish a provincial stakeholder advisory group by 2018 to identify energy sources and recommend policy directions and funding. • To promote programs that enhance community partnership in accepting newer eco technologies (20 dots).

Vision Element 2: Transparent, Accountable and Committed

Focus Question	Responses
Brainstormed Goals	• Ensure clear information on the true and complete costs associated with our energy use (e.g. global adjustment charge). • Advance clear line between energy revenue and energy expenditures/costs – results. • Foster individual understanding of energy choices and consequences and commitment to less consequences. • Breakdown residential/commercial industrial energy use and how much of the cost is for various parts of the energy system (especially for global adjustment charge). • Identify specific targets, indicators, KPIs, relevance of KPIs.
Chosen Goal	• Ensure confidence in continual improvement.
Barriers	• Lack of energy literacy. • Lack of transparency of costs and their origins. • Privacy of information. • Different regulatory conditions within Ontario compared to the rest of Canada. • Political will/risk aversion. • Conflicting goals and actions (e.g. [proposed] ethanol plant undermines environmental goals). • Hwy 407 and transportation emissions.
Critical Success Factors	• Education. • Cleaner connection between energy costs and energy charges. • Less subsidies. • Still a lot of complications associated with energy costs and charges. • Increasing literacy of total costs lifecycle. • Encouragement of clean industry. • Actions, results, verification of results. • Continued communication of results and actions.
Objectives	• Energy literacy – people know where their energy comes from, how much it costs and what subsidies are, what health and environmental consequences are (5 dots). • Simplify breakdown and explanation on all energy bills (including global adjustment charge) (3 dots). • Make as much information available to the greatest extent of the current law. • Explore limitations, goals, values of current privacy laws. • Stakeholder engagement – community, provincial.

Vision Element 3: Reduce Footprint through Technology, Conservation and Policy

Focus Question	Responses
Brainstormed Goals	• Provide tools for citizens to understand their consumption (see the data) (tools = data). • Design homes and communities that use less than average energy. • Provide targets for energy consumption kWh/person. • Reduce transmission losses by locating producers and consumers.
Chosen Goal	• Provide user-friendly tools and targets for consumers and communities to reduce their energy consumption.
Barriers	• Privacy of personal information. • Smart metering is not implemented 100%. • Insufficient small houses. • No visualization tools for consumer. • Need information down to individual circuits. • Building Code. • Insufficient safe bike paths. • Inefficient personal transportation. • Community design is not for walking.
Critical Success Factors	• Education “energy literacy”. • Benefits of data must outweigh the concern of privacy. • Holistic approach to urban planning (i.e. walking communities, bike paths, small stores, local baker, local butcher, local schools - reduce busing, local industry). • Consumer buy-in. • Pathways to change.
Objectives	• Write policy with teeth by 2018 that directs new developments (2 dots). • Specify target energy consumption per person by 2018 (4 dots). • Develop policies and codes to produce “green” homes by 2020 (19 dots). • Initiate cultural change programs (1 dot).

Vision Element 4: Economic Prosperity, and Community and Environmental Health

Focus Question	Responses
Brainstormed Goals	• Make effective community energy decisions based on three pillars of sustainability. • Establish economy that promotes affordable, clean energy locally. • Encourage private sector to incorporate community and environmental health in development plans. • Promote sustainable energy. • Develop community-owned clean energy projects. • Create financial incentives for local employment/business development.
Chosen Goal	• Incorporate three pillars of sustainability when making community energy decisions.
Barriers	• Cost. • Capacity. • Complexity. • Four-year political vison. • Commitment to existing infrastructure. • Status quo. • Conflicting priorities. • Local versus global. • Silos.
Critical Success Factors	• Participation in policy development. • Diverse options for energy generation and transmission. • Strong leadership. • Financial incentives for change. • Community support. • Increased education and awareness. • Aligning policy. • Cooperation (among) key players. • Global awareness, local change. • Open dialogue start to finish. • Ownership and accountability. • Measurable, tangible and visible results. • Promote clean energy options that align with improved environmental quality. • Continue to promote sustainable transportation and related health benefits. • Strong employment base.

Focus Question	Responses
Objectives	• Develop policies that ensure all decisions are fact-based (5 dots). • Implement 20% energy minimum from community-owned renewable energy projects (3 dots). • Increase number of local energy businesses (2 dots). • Reduce vehicle use through increased local jobs (3 dots). • Establish task force towards implementation. • Reduce vehicle use through increased public/mass transit infrastructure (5 dots). • Continue to incorporate technology education into curriculum and public awareness plans. • Increase by 50% the energy dollars/expenditures that stay in Durham (e.g. more electric vehicle use or biomass generation available locally) (12 dots).

Vision Element 5: Reliable, Resilient, Integrated, Stable Funding and Sustainable

Focus Question	Responses
Brainstormed Goals	• Provide stable funding mechanism to support the DCEP. • Ensure diverse sustainable energy sources. • Enhance community energy resilience by working with neighbouring communities.
Chosen Goal	• Enhance community energy resilience.
Barriers	• Conflicting priorities. • NIMBYism. • Appropriate funding (different communities, different funding frameworks). • Political issues.
Critical Success Factors	• Open communication. • Community buy-in. • Long-term planning. • Commitment.
Objectives	• Increase grid mix by x amount by x km (2 dots). • Increase infrastructure maintenance to ensure resiliency against severe weather. • Consider reliancy measures in new infrastructure. • Create a revenue neutral financial mechanism for energy conservation projects to be reinvested into future energy initiatives (17 dots). • Provide a financial advancement program for residential energy projects (8 dots). • Place individual energy meters in multi-residential/business units (3 dots).

Vision Element 6: In Terms of Cost, Affordability for All!

Focus Question	Responses
Brainstormed Goals	• Provide economically viable energy for producers. • Provide affordable energy to all consumers. • Ensure sustainability in your energy source.
Chosen Goal	• Provide **affordable** energy services to **all** consumers.
Barriers	• Cost of renewables. • Cost of technology. • Lack of consistent policy/goals. • Production costs. • Delivery costs. • Transportation costs. • Storage costs. • Reactionary decision-making.
Critical Success Factors	• Reduced cost of renewables. • New technologies (storage, production). • Local generation of energy. • Proactive planning (e.g. building net-zero homes).
Objectives	• Decrease home energy bills by 100% for all homes by 2050 (4 dots). • Increase micro-generation and energy storage (22 dots). • By-laws or local regulation to encourage development of energy efficient new construction (12 dots). • Tax unsustainable practices and fund/incent sustainable (9 dots).

Vision Element 7: Community Collaboration for Simple Solutions

Focus Question	Responses
Brainstormed Goals	• Create opportunities for collaboration. • Define realistic goals to identify opportunities for collaboration. • Identify stakeholders. • Developing synergies with all community stakeholders. • Develop effective collaboration amongst stakeholders. • Develop effective and simple solutions through community collaboration. • Engage community stakeholders through collaboration to develop effective and simple solutions.
Chosen Goal	• Engage community stakeholders through collaboration to develop effective and simple solutions.
Barriers	• What is a simple solution (how is it defined?). • Conflicting interests. • Identification of who is engaged. • Stakeholder apathy. • Complexity of issues. • “Another meeting”. • Rural versus urban interests. • Competing priorities.
Critical Success Factors	• Clear list of who our stakeholders are. • Recognition of community diversity and language needs. • Having the “right” people at the table. • Engaging the “experts”. • Very clear agenda and progress. • Transparency and no pre-determined outcomes. • No political gain/influence. • Strong facilitator. • Measureables/progress/outcomes. • Patience/time.
Objectives	• Increase awareness of Durham’s energy stakeholders by utilizing innovative communication strategies to annually report successes on the plan and gather feedback (19 dots). • Target 90% of energy stakeholders in Region. • Implement two-way communication channels. • Review and evaluate engagement strategy annually (1 dot). • Increase stakeholder “pockets” by 20% each year.

Appendix D: Community Energy Case Studies and Stakeholder Responses

Case Study: Guelph, ON

Population 121,688 (2011)

Vision/Goal: 25-year plan to use 50% less energy per capita and reduce greenhouse gas emissions by 60% per capita.

Energy Planning Targets – Guelph Community Energy Initiative Targets:

- Use less energy in 25 years than today (achieve annual improvement in energy efficiency of about 1%/year, which by 2031, would be a level that aligns with global best practice from Scandinavia and Germany).
- Consume less energy per capita than comparable Canadian cities (reduce the magnitude of the summer grid electrical peak by at least 40% by 2031 to avoid the need for investment in new electrical infrastructure to serve the growth of the city).
- Produce less greenhouse gas per capita than the current global average (within fifteen years, at least, a quarter of Guelph's total energy requirement will be competitively sourced from locally created renewable resources).

Program/Policy Accomplishments:

Guelph District Energy Strategic Plan (GDESP) (City-wide thermal energy network):

- Create a pathway to serve at least 50% of Guelph's total heating needs.
- 30% of Guelph's anticipated electricity requirements will be associated with Combined Heat and Power (cogeneration) by 2031.
- Reduce greenhouse gas emissions from heating.
- Attract investment partnerships to build Guelph's district energy network.
- Earn financial returns and keep more energy dollars in the community.

Guelph Energy Efficiency Retrofit Strategy (GEERS) (program implementation 2017/2018):

- Encourage homeowners to make energy efficiency improvements to their homes (e.g. insulation, solar panels, heat recovery systems, weatherizing). Upfront costs paid through a pilot program and repaid by the homeowner over a period of up to 25 years at low interest rates.

Focus Questions:

1. If this case study were set in Durham Region, what barriers would there be to its successful implementation?

Table One Responses	Table Six Responses
GEERS • Finance department does not want to take the risk (squashed at department heads). • Have a very high credit rating already and do not want to [de]crease it. GDESP • Low density, infrastructure. • Cost per unit. • Capital funding.	• Financing – Durham Region reluctance to be a "bank". • Durham 2 tier municipality system – jurisdictional funding issues – Guelph is just Guelph. • Density variability – Durham is sprawling – harder to implement initiatives (e.g. nodes for small power success not possible with sprawl). • Securing private investment/companies to commit to Durham. • Standards variability.

2. What would your approach be to promote the plan's success in Durham Region?

Table One Responses	Table Six Responses
GDESP • Need a funding model and a business case. • Need a high-density area. • Promote at senior level of government. GEERS • Label older houses through Home Energy Rating System (HERS). • Funding. • People would do it if financing was available.	• Leveraging high level of local dedication – culture of Durham Region – loyalty to coal. • Strengthen the local economy around these jobs so that people aren't exclusively out-commuting – major selling point of community energy efficiency is a source of local jobs. • Addresses the local job issue. • Doesn't rely on being environmental for the sake of it. • Economic model. • GEERS is good opportunity Seize the day with all of the new development before the opportunity is lost.

Case Study: Halifax, NS

Population 390,095 (2011)

Vision/Goal: Transition Halifax from a region that is highly reliant on imported energy to a region that produces much of its own energy, with greater control over increasing energy costs and a decrease in greenhouse gas emissions.

Energy Planning Targets:

The Halifax Community Energy Plan has eight main goals each with legislative priorities, and corporate and community actions:

- Improve the energy efficiency of buildings.
- Increase transportation choice and efficiency.
- Increase industrial energy efficiency.
- Encourage energy efficient land use planning and neighbourhood site planning.
- Increase efficiency of infrastructure.
- Increase energy security and diversify energy supply.
- Educate and engage residents and businesses.
- Demonstrate local government leadership.

Regional Plan and Sustainable Environment Strategy:

- Reduce corporate greenhouse gas emissions to 30% below 2008 levels by 2020.
- Additional programs including Geothermal Energy (Alderney Five Project), Solar Hot Water, Air and Solar City and Wind Energy Master Plan.

Program/Policy Accomplishments:

Approximately 150 projects identified in the Halifax Community Energy Plan including:

- Cogeneration plants or district heating, and Wind Energy Master Plan.
- Feasibility study for mini (run-of-the-river) hydroelectric plants on Musquodoboit River at various locations.
- Assess potential for harbour water cooling for nearby buildings.

Solar City Halifax Project:

- Low interest loans and expertise for photovoltaic, solar hot air and solar hot water projects installed in over 400 homes (revenue neutral to Halifax). Over 2,500 additional homes have expressed interest.

Focus Questions:

1. If this case study were set in Durham Region, what barriers would there be to its successful implementation?

Table Two Responses	Table Seven Responses
• Reluctant to increase cost of development too much in fear of detracting growth and investment within the municipalities. • Need more community awareness of costs and benefits of energy planning. • Need more focus on transportation-related energy projects in Durham. • Community fears of "wind turbines" in rural areas – need more education/buy-in (NIMBY – not in my backyard).	• Resources and volume of projects (150) would be incredibly **overwhelming.** • Lack of promotion on behalf of the Region of the project. • Existing housing stock for carbon neutrality and energy consumption.

2. What would your approach be to promote the plan's success in Durham Region?

Table Two Responses	Table Seven Responses
• More focus on job growth to promote liveable neighbourhoods with work opportunities to reduce commute to work. • Need a region-wide standard for energy efficient development. • Quantify the benefits of energy planning to receive region-wide buy-in.	• Biogas/waste water treatment/composting/**anaerobic digester.** • Marketing of the **website**, accessibility, thought that the province is the utility – **user-friendly** website with **tools** and **resources** that the community can use. • Need to package by source and prioritize with a significant amount of projects (prioritize Lake Ontario for deep water possibility). • Utilize existing sustainable plans, opportunities for energy from waste – creation of hubs for projects. • Co-gen for local businesses. • Low interest homes/businesses for local improvement charges (LICs). • Opportunity for wind turbines in the Durham Region and increase in solar farms.

Case Study: Oxford County, ON

Population 105,719 (2011)

Vision/Goal:

- Oxford County will meet 100% or more of its energy demands from renewable energy sources by 2050 to catalyze environmental change, create opportunity for renewable energy investment, and position Oxford as a renewable energy centre of excellence and home for renewable energy education, research and development.

Energy Planning Targets – 100% Renewable Energy Plan (Draft 2016):

- Focus on avoided health care costs, increasing costs of fossil fuels and nuclear energy, decreasing costs of renewable energy and local job creation.
- Plan follows the 12 criteria from the Kassel International Dialogue on 100% Renewable Energy including: planning and orientation, institutionalization, buildings, mobility and transit, energy efficiency in utility-scale generation, knowledge generation, public engagement and participation in networks.

Program/Policy Accomplishments:

Oxford County Community Sustainability Plan:

- Greenhouse gas reduction goals, efficient “green” construction measures and actions to decarbonize transportation.
- Public outreach and education sectors: Smart Energy Oxford, Zero Waste Oxford and Reforest Oxford.

Sample projects:

- Woodstock’s White Lanes microGrid project.
- Oxford Gardens solar thermal facility.
- Tesla electric vehicle charging stations at the Quality Inn.
- Biogas project at Greenholm Farms.

Partnerships:

- York University’s Sustainable Energy Initiative; the Canadian Urban Transit Research & Innovation Consortium; Renewable Cities out of Simon Fraser University, BC; World Future Council, Hamburg, Germany; and the Global 100% renewable energy initiative, which promotes being powered by 100% sustainable renewable energy is urgent and achievable.

Focus Questions:

1. If this case study were set in Durham Region, what barriers would there be to its successful implementation?

Table Three Responses	Table Eight Responses
• Many jobs outside of Durham Region – bedroom community. • NIMBY (not in my backyard) pressures. • Municipal silos – they do not work together well. • Taxation rates.	• Costs. • Old, inefficient infrastructure. • Getting buy-in from all stakeholders.

2. What would your approach be to promote the plan's success in Durham Region?

Table Three Responses	Table Eight Responses

• Education and awareness of issues.
• Energy from waste expansion.
  - Durham Energy Plant.
  - Farm bio digesters using green bin waste.
• Need to focus on east of Hwy 404 for jobs.
• Create more mass transit.
• More jobs in Durham.
• Local ethanol plants.
	• Town hall meetings.
	• Public displays of solar photovoltaics, etc.
	• Social media.
	• Promote the success of early pilot projects.
	• Partnering with academic institutions.

Case Study: Vancouver, BC

Population 603,502 (2011)

Vision/Goal:

- To be the “Greenest City” in the world.

Energy Planning Targets:

Renewable City Strategy:

- Derive 100% of the energy used in Vancouver from renewable sources before 2050.
- Reduce greenhouse gas emissions by at least 80% below 2007 levels before 2050.

Targets will be achieved by:

- Reducing energy use (overall reduction from 59.3 Million GJ in 2014 to 38.3 Million GJ by 2050).
- Increasing the use of renewables from 31% to 100% and supply of renewables.

Program/Policy Accomplishments:

Greenest City 2020 Action Plan:

- Strategic plan that focuses on renewable energy, green buildings, green transportation, zero waste, green economy and improving quality of life in Vancouver by ensuring access to local food, nature, clean water and clean air.

Neighbourhood Energy Strategy (approved by council in 2012):

- Strategy to develop renewable energy heat and hot water within three target neighbourhoods including downtown.
- Energy centres may make use of a variety of different low-carbon energy technologies such as: sewer heat recovery, geothermal heat, urban wood waste, and waste heat recovered from building cooling or industrial processes.

Sample programs:

- Zero-emission house standards for new homes phased through 2030. It is estimated that by 2050, 40% of current homes will be replaced with homes built to the new standard.
- Transportation investments to increase use of public transit and decrease the distance driven in automobiles.
- Programs include bike share programs, infrastructure investments for bike lanes and transit, and behavior changing mechanisms including pay parking and bridge tolls.

Focus Questions:

1. If this case study were set in Durham Region, what barriers would there be to its successful implementation?

Table Four Responses	Table Nine Responses
• Pubic opposition to renewables (i.e. wind turbines). • Cost of nuclear generation is cheap – lack motivation to move to renewables or more expensive energy generation. • Financing for renewables – high capital costs. • Building codes lack incentives to move toward Net-Zero. • Lack of education and awareness.	• Existing infrastructures are primarily non-renewable. • Majority of population travels outside Durham Region for work. • Mobilizing our rural community because it is restricted. • Residential units that are large ad energy extensive - barrier is making them sustainable.

2. What would your approach be to promote the plan's success in Durham Region?

Table Four Responses	Table Nine Responses
• Partnerships – strategic partnerships with utilities because we live in silos. • Increase awareness and education. • Incentives to go above code (building codes). • District energy models and pilot projects in communities. • Partnerships to implement innovative technologies.	• Develop smaller/sustainable residential units (e.g. building downtown areas, making use of commuter spaces, developing economic opportunities). • Improving transportation (bus times/schedules, better uber services).

Case Study: Freiburg, Germany

Population 229,144 (2011)

Vision/Goal: A “Green City” in pursuit of extensive renewable energy.

Energy Planning Targets

Freiburg’s Energy Policy:

- 100% renewable energy by 2035 by focusing on energy conservation, efficient technologies and renewable energy sources.
- 40% reduction in carbon dioxide emissions by 2030 compared to the 1992 base year.

Germany’s National Energy Policy (nuclear power phase out):

- 2001 German Federal Renewable Energy Law requires utilities to buy power from independent producers.

Program/Policy Accomplishments:

- About 50% of Freiburg’s electricity is produced with Combined Heat and Power (CHP) District Energy (compared to just 3% in 1993). There are 14 large-scale and 90 small-scale CHP plants (e.g. at the City theater and indoor swimming pools).
- Sonnenschiff and Solarsiedlung communities produce four times more solar energy than the communities consume.
- Home Energy Standards (2008): homes can only consume 15 kWh/m^2/yr. These houses cost 10% more to build but can achieve 80-90% energy consumption reductions.
- Home insulation and energy retrofits: 1.2 million Euro provided in subsidies from 2002-2008 as matching or partial matching to about 14 million Euro in private investments. Energy consumption reductions about 38% per building.
- Transportation programs including: extensive cycling network, banning automobiles from streets or walking speed only, car sharing, and behaviour changing mechanisms including expensive on street parking and limited residential parking (residential parking spots cost €18,000).

Focus Questions:

1. If this case study were set in Durham Region, what barriers would there be to its successful implementation?

Table Five Responses	Table Ten Responses

• Resistance to change.
  • Focus on residential, which in Durham is not diverse – makes it difficult for district energy and transportation.
  • Must improve density to improve update of district energy.
• Too easy to do status quo.
• Nuclear infrastructure in place – long-term contracts and jobs.
• Culture.
  • Big houses and garages – even stacked housing.
  • Resistance to traffic “General Motors culture”.
  • Growth patterns are not enabling reduced energy and greenhouse gas emissions.
  • Outdated planning policies.
	• Scale (span of region).
	• Infrastructure/lack of.
	• Retrofitting costs – affordable?
	• Lack of policy and government incentive.
	• Lack of public transit infrastructure.
	• Distance from core job hubs (Toronto).
	• Cost.

2. What would your approach be to promote the plan's success in Durham Region?

Table Five Responses	Table Ten Responses

• Increase use of district energy.
• Increase biogas for transportation (e.g. from waste water treatment, landfill-gas, clean up to create compressed natural gas).
• Anaerobic digesters, continuous production.
• Incorporate electric and thermal storage.
• Ban organics into landfill to use for biogas instead.
• New planning policies to improve density and attract more jobs.
• Promote public transit.
	• More midrise developments/built form suitable for families.
	• How you build?
	• Incentivization (government) quick.
	• Find out what community members want and how to pay for it.
	• Sustainable city policy (mixed use communities on smaller scale).
	  • Integrated communities
	• Telecommuting, embrace technology.
	• Gather data (free flowing).
	  • Retrofit.
	  • New build.
	  • Transportation.
	• Prescriptive retrofits depending on issue.
	• Inside-out, outside-in holistic approach.
	• Fair pricing (retrofit) standards.
	• Right-sizing homes/minimalism movement.

Appendix E: Headline Exercise Stakeholder Responses

Headline: June 15, 2025 - "Durham Greenhouse Gas Emissions Down 25%"

Focus Question	Stakeholder Responses
What local actions contributed to this headline?	• Buildings – Improvements to energy decrease (incentives, monitoring, understand accounting). • Vehicles – Energy efficient (vehicle recharging, battery recycling, multi-fuel facilities and vehicle promotion). • Durham Region reaches planning target of one job/two residents. • Cap and Trade. • Incentives (stackable cost). • Agriculture – Region monitoring, trees, biodigestors, soil management education. • Gas companies. • All new builds (residential, commercial and industrial) in Region to be photovoltaic/Net-Zero ready. • Incentives to builders to build to Net-Zero. • Opportunity tax rebates for retrofits. • Local electricity grid infrastructure supports distributed energy, electric vehicle charging. • Existing rail line upgraded to accept people not just freight from Myrtle Station to Union Station (moving people). • Tim Horton's/McDonald's drive thru effect (who is responsible?).
Who would be most directly affected by this?	• Building industry, consumers, tenants, residents, electronic sector, level(s) of government managing rebates and building code.
What would be the impacts of this change?	• Economics – green tech opportunities, higher costs passed on to consumer. • Social – way of living. • Co-operation. • Potential increase in energy costs (current energy grids try to recapture energy reductions).
What are the next steps to keep moving forward from this headline?	• Increase greenhouse gas targets. • Implement rules and metrics. • Increase incentives and opportunities. • Reinvesting savings/circular economy.

Headline: September 3, 2030 - "Energy from Local Renewables Reaches 35% in Durham Region"

Focus Question	Stakeholder Responses
What local actions contributed to this headline?	• Cost; public awareness; low hassle factor. • Government policy (provincial and municipal). • Increased waste recovery. • Storage increase. • General Motors Oshawa produces 100% electric vehicles. • Durham College/University of Ontario Institute of Technology advocacy and research; smart grid technology.
Who would be most directly affected by this?	• Decommissioned Pickering nuclear site repurposing. • Decentralized players (producers, installers, consumers/residents, institutions). • Vertical integration of innovation (localized hub). • Local and provincial economy.
What would be the impacts of this change?	• More renewable jobs and reduced heating costs. • Improved viability of agricultural community.
What are the next steps to keep moving forward from this headline?	• Increase percent of renewable energy and keep up public relations. • Tesla (energy storage). • Push for new technology. • More storage, research and funding. • Incentives to adopt renewable energy. • Expansion and viability of green tech sector. • Net-Zero communities continue to expand.

Headline: March 23, 2020 - "Council Approves First Net-Zero Energy Subdivision"

Focus Question	Stakeholder Responses
What local actions contributed to this headline?	• Council refuses to approve anything other than Net-Zero energy subdivision. • Pilot project with "real time" monitoring to demonstrate and verify potential benefits and costs, and increase consumer awareness and understanding. • Consistency in Durham planning departments. • Market demand and developer push. • Competitive pricing. • Facilitate approval process to incentivize developers (priority/fast-track and lower fees). • Education and awareness regarding climate change. • Post-secondary research drives innovation. • Local planning policies incentivize Net-Zero. • Education/promotion of the $ potential savings versus investment.
Who would be most directly affected by this?	• Home buyers refuse to buy any houses that are not Net-Zero energy. • AODA 2015 needs to be part of the discussion (aging population). • Home buyers/consumers values. • Builders. • Technology developers. • Local distribution companies (decrease demand) (minimal). • Real estate agents. • Suppliers. • Trades.
What would be the impacts of this change?	• Impacts initially small – unlike initial impacts from upgrading the rail line from Hastings to Union Station. Rail line already exists and runs through just north of Brooklin (Myrtle Station). • Decrease greenhouse gases. • Shift in market standard/new model for neighbourhood planning. • Decrease utility costs and strain on grid. • Increase cost to home buyer and pride of ownership. • Increase education and knowledge of benefits (users/potential users). • New trades/skills. • Reduction in electricity use on existing grid. • Feed-In Tariff (FIT) benefits to owners.

Focus Question	Stakeholder Responses
What are the next steps to keep moving forward from this headline?	• Program expansion incentive. • Increase buyer demand due to seen benefits. • Expand to other development (industrial, commercial and institutional). • Increase pilot/demo homes by all developers – fast track approvals. • Simplified process. • Grid-tied, community-integrated renewable energy. • Builders could not keep up with demand for Net-Zero homes as more and more buyers become aware of benefits. • Education of consumers of benefits of Net-Zero. • Builder/developer pilot projects.

Headline: November 16, 2030 - "Electric Vehicles now 65% of Vehicle Sales"

Focus Question	Stakeholder Responses
What local actions contributed to this headline?	• Infrastructure in place. • Surface parking stations have increased number of electric vehicle (EV) chargers. • Battery technology (reduced range anxiety). • Incentive with Hwy 407 reduced toll for EV owners. • Increased education of EV (e.g. autoshow). • Building Code for home owners to have mandatory charging stations. • Local and provincial incentives for facilities to have charging stations (policy in place on behalf of the municipality) – would be based on usage and need for reporting metrics. • Incentive to the dealer to have EV on lot (tax reduction), would help to encourage local jobs (e.g. General Motors to create EV at local plant). • Cost of EV to persuade increased ownership, especially up-keep of vehicle itself.
Who would be most directly affected by this?	• No responses received.
What would be the impacts of this change?	• Significant savings in energy efficiency. • Reduced greenhouse gas emissions. • Back-up emergency if grid goes down – more homes with back-up energy.
What are the next steps to keep moving forward from this headline?	• Incentives to stock EV's at dealerships. • Promote electricity cost savings for increasing energy use at night. • Complement provincial rebates with local incentives for EVs. • Mandate installation of charging stations in multi-residential buildings. • Using smaller EV when going shorter distances will need to have infrastructure in place. • Continued incentives for EVs during non-peak hours for charging. • Technology with servicing of vehicles. • Education programs at colleges and universities.

Headline: August 30, 2035 - "Durham Energy Self-Sufficiency Reaches 50%"

Focus Question	Stakeholder Responses
What local actions contributed to this headline?	• Individuals taking advantage of incentives. • Rural Durham adopting off-grid options. • Innovations in technology are promoting adoption.
Who would be most directly affected by this?	• No responses received.
What would be the impacts of this change?	• Change of rates – if fewer people are a part of the utility, rates could go up. • Use of cheaper fuels could result in lower air quality.
What are the next steps to keep moving forward from this headline?	• Should we aim for a higher percentage of self-sufficiency or re-visit program goals and targets? • Is self-sufficiency the best option for Durham? What will the population/industry density be in 2035?

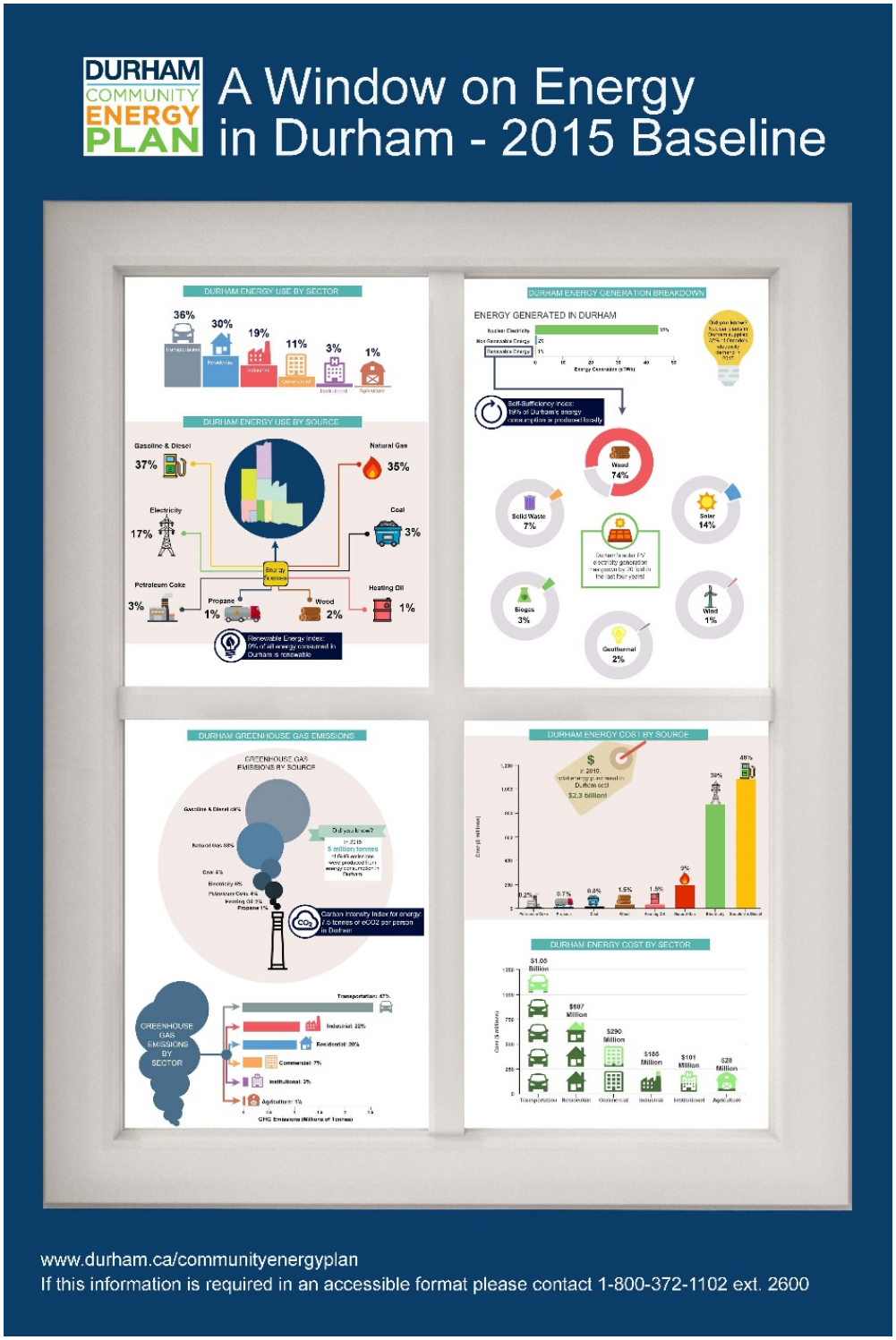
Headline: Feb 28, 2019 - "OPG and Province Announce Closure of Pickering Nuclear Plant by 2020 and Halt to Darlington Refurbishment"

Focus Question	Stakeholder Responses
What local actions contributed to this headline?	• Cost prohibitive – use of off-ramps. • Drop in demand. • Accident/change in public opinion. • Change in government. • Increase in renewables (bio…, net metering).
Who would be most directly affected by this?	• Employees. • Investors – company. • Ratepayers. • Green energy suppliers.
What would be the impacts of this change?	• Electricity cost. • Greenhouse gas increase? Unknown. • Need for alternate sources. • Site decommissioning/decontamination.
What are the next steps to keep moving forward from this headline?	• Alternative generation. • Technological innovation – solar, wind, storage. • Energy plan in place. • Consider capturing more energy from the Energy From Waste (EFW) plant in Clarington and the water treatment plant in Pickering since Durham Region is now taking waste and sewage from York Region (Note: EFW plant should start accepting commercial and institutional waste).

Headline: Feb 28, 2022, "Province announces extension of Pickering's Operation Beyond 2024 and a New Build at Darlington starting in 2030"

Focus Question	Stakeholder Responses
What local actions contributed to this headline?	• Dispelled misconceptions on nuclear cost and safety. • Advancements in waste storage. • Most economical energy solution available. • Increased demand not being met by other sources.
Who would be most directly affected by this?	• Taxpayers. • Local economy/jobs. • Competing renewable energy providers. • Provincial energy users.
What would be the impacts of this change?	• Carbon emissions – production of ethanol. • More reliability on other carbon intensive methods. • Introduction of new technology. • Pushback (NIMBY).
What are the next steps to keep moving forward from this headline?	• New infrastructure. • Improve and maintain information. • Increased transparency. • All level discussion in government – recognize merits. • Full cost accounting.

Appendix F: A Window on Energy in Durham – 2015 Baseline Poster



Appendix G: Evolution of Vision Elements, Goals and Objectives

The following tables capture the evolution of the vision elements, goals and objectives over the course of the stakeholder consultation period, with input from the project Steering Committee and project team. The **blue** font indicates changes to the text over time.

Vision Element 1

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Vision Element	Innovative, smart and diversified energy solutions.	Innovative, smart and diversified energy solutions.	Innovative, smart and diversified energy solutions.
Goal	Develop policies and programs for diversified energy sources at multiple scales of energy production and consumption.	Develop **and promote** policies and programs that **encourage community partnerships, acceptance of newer eco-technologies and guide the development of** diversified energy sources at multiple scales of energy production and consumption.	Develop and promote policies and programs that encourage **new** community partnerships, acceptance of newer **and emerging sustainable** eco-technologies and guide the development of diversified energy sources at multiple scales of energy production and consumption.
Objective 1	Not applicable.	**Increase Durham Region's energy self-sufficiency and resiliency by increasing local renewable energy sources by 35% by 2030.**	Increase Durham Region's energy self-sufficiency and resiliency by increasing local renewable energy sources by 35% by 2030.
Objective 2	Establish a provincial stakeholder advisory group by 2018 to identify energy sources and recommend policy directions and funding.	Not proposed to advance to next phase.	Not applicable.

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Objective 3	Promote programs that enhance community partnership in accepting newer eco technologies.	Not proposed to advance to next phase.	Not applicable.

Vision Element 2

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Vision Element	Transparent, accountable and committed.	Transparent, accountable and committed **to the vision.**	Transparent, accountable and committed **to the vision.**
Goal	Ensure confidence in continual improvement.	**Develop and communicate the benefits (economic, environmental and social) of implementing the DCEP.**	**Measure and** communicate the **quantitative and qualitative** benefits (economic, environmental and social) of implementing the DCEP **to increase stakeholder and community support**.
Objective 1	Energy literacy – people know where their energy comes from, how much it costs and what subsidies are, what health and environmental consequences are.	**Increase public energy literacy regarding energy sources, impacts and costs via the collaborative development of a communication strategy by 2nd Q 2018 for implementation following the endorsement of the DCEP by Regional Council.**	Increase public energy literacy regarding energy sources, impacts and costs via the collaborative development of a communication strategy by 2nd Q 2018 for implementation following the endorsement of the DCEP by Regional Council.
Objective 2	Not applicable.	**Improve (100%) energy literacy by 2022 thru apps, school curriculum and web information and change behaviour.**	Improve (100%) energy literacy by 2022 thru **various avenues including** apps, school curriculum, web information **etc.**

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Objective 3	Simplify breakdown and explanation on all energy bills (including global adjustment charge).	**Increase user understanding of energy costs by advocating for consistent simplification, breakdown and explanation of all costs on all local utility energy bills (including global adjustment charge) by 2019.**	Increase user understanding of energy costs by advocating for consistent simplification, breakdown and explanation of all costs on all local utility energy bills (including global adjustment charge) by 2019.
Objective 4	Stakeholder engagement – community, provincial.	**Maintain and increase stakeholder commitment to the DCEP vision through annual public reporting to Regional Council on progress of Plan implementation with posting to the DCEP webpage.**	Annual public reporting to Regional Council on progress **(financial and otherwise)** of Plan implementation with posting to the DCEP webpage.
Objective 5	Make as much information available to the greatest extent of the current law.	Not proposed to advance to next phase.	Not applicable.
Objective 6	Explore limitations, goals, values of current privacy laws.	Not proposed to advance to next phase.	Not applicable.

Vision Element 3

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Vision Element	Reduced footprint through technology, conservation and policy.	Reduced carbon footprint through technology, conservation and policy.	Reduced carbon footprint.
Goal	Provide user-friendly tools and targets for consumers and communities to reduce their energy consumption.	Provide user-friendly tools, targets **and incentives** for consumers and communities to reduce their energy consumption.	Provide user-friendly tools, targets and incentives for consumers and communities to reduce their **carbon footprint by __% by 20__.**
Objective 1	Specify target energy consumption per person by 2018.	**Decrease energy consumption per person by 50% between 2015 and 2030.**	Decrease **carbon-based** energy consumption by **10% by 2025, 15% by 2035, 45% by 2045 and 50% by 2050**.
Objective 2	Develop policies and codes to produce “green” homes by 2020.	**Decrease energy use via the development of new local policies and advocate for early implementation of Building Code requirement that all new housing be Net-Zero energy by 2025 or 2030 (?) and all retrofits by 2040.**	Decrease energy use via the development of new local policies and advocate for early implementation of **more stringent** Building Code requirement that all new housing be Net-Zero energy by 2025 or 2030 (?) and all retrofits by 2040.
Objective 3	Write policy with teeth by 2018 that directs new developments.	Not proposed to advance to next phase.	Not applicable.
Objective 4	Initiate cultural change programs.	Not proposed to advance to next phase.	Not applicable.

Vision Element 4

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Vision Element	Economic prosperity, and community and environmental health.	Economic prosperity, and community and environmental health.	Economic prosperity, and community and environmental health.
Goal	Incorporate three pillars of sustainability when making community energy decisions.	**Incorporate four components of sustainability (economic, environmental, social and cultural) when making community planning decisions.**	**Develop standard tool to** incorporate **lifecycle approach** when making community **energy** planning decisions.
Objective 1	Implement 20% energy minimum from community-owned renewable energy projects.	**Increase energy production from Durham community energy projects to a minimum of 50% of consumption by 2050.**	Increase energy production from Durham community energy projects to a minimum of 50% of consumption by 2050.
Objective 2	Increase number of local energy businesses.	**Increase the** number of local energy businesses **by 50% by 2030.**	Increase the number of local energy businesses by 50% by 2030.
Objective 3	Reduce vehicle use through increase public/mass transit infrastructure.	**Increase public/mass transit use by 12% by 2031 with 1%/year increase to 2050.**	Increase public/mass transit use by 12% by 2031 with 1%/year increase to 2050.
Objective 4	Increase by 50% the energy dollars/expenditures that stay in Durham e.g. more electric vehicle use or biomass generation available locally.	Increase by **30%** the energy dollars/expenditures that stay in Durham e.g. more electric vehicle use, PV or biomass generation locally **by 2030 and 4%/year thereafter.**	Increase by 30% the energy dollars/expenditures that stay in Durham e.g. more electric vehicle use, PV or biomass generation locally by 2030 and 4%/year thereafter.

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Objective 5	Increase by 50% the energy dollars/expenditures that stay in Durham e.g. more electric vehicle use or biomass generation available locally.	**Increase the proportion of electric vehicles in Durham-based light duty vehicles to 50% by 2030, to 75% by 2040 and to 100% by 2050 by providing supportive public infrastructure and policies.**	Increase the proportion of electric vehicles in Durham-based light duty vehicles to 50% by 2030, to 75% by 2040 and to 100% by 2050 by providing supportive public infrastructure and policies.
Objective 6	Increase by 50% the energy dollars/expenditures that stay in Durham e.g. more electric vehicle use or biomass generation available locally.	**Increase the proportion of the municipal fleet fueled by renewable energy to 50% by 2030, 75% by 2040 and 100% by 2050.**	Increase the proportion of the municipal fleet fueled by renewable energy to 50% by 2030, 75% by 2040 and 100% by 2050.
Objective 7	Increase by 50% the energy dollars/expenditures that stay in Durham e.g. more electric vehicle use or biomass generation available locally.	**Double our green employment by 2030.**	Double our green employment **(green, clean technology, energy creation and efficiency)** by 2030.
Objective 8	Develop policies that ensure all decisions are fact-based.	Not proposed to advance to next phase.	Not applicable.
Objective 9	Reduce vehicle use through increased local jobs.	Not proposed to advance to next phase.	Not applicable.
Objective 10	Establish task force towards implementation.	Not proposed to advance to next phase.	Not applicable.
Objective 11	Continue to incorporate technology education into curriculum and public awareness plans.	Not proposed to advance to next phase.	Not applicable.

Vision Element 5

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Vision Element	Reliable, resilient, integrated, sustainable.	Reliable, resilient, integrated, sustainable, **and financially viable energy sources.**	Reliable, resilient, integrated, sustainable, and financially viable energy sources.
Goal	Enhance community energy resilience.	**Maximize** community energy **self-sufficiency, maintain flexibility and sustainability**.	Maximize community energy self-sufficiency **and resiliency**, maintain flexibility and sustainability.
Objective 1	Increase grid mix by x amount by x km.	Increase grid **capacity to accommodate electrical vehicle charging.**	Increase grid capacity to accommodate electrical vehicle charging. **Encourage diversity of supply and fuel mix.** **Encourage and educate EV owners to charge/discharge during off-peak hours.** **Advocate for larger price differential between on and off-peak hours.**
Objective 2	Consider reliance measures in new infrastructure.	**Increase resiliency** measures **when designing and constructing** new infrastructure.	Increase resiliency measures when designing and constructing new infrastructure **or retrofitting existing infrastructure**. **Increase cost synergies during infrastructure work (roads, sewers, gas, etc.).**

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Objective 3	Create a revenue neutral financial mechanism for energy conservation projects to be reinvested into future energy initiatives.	**Increase** revenue neutral financial mechanisms for energy projects **to be invested into future energy initiatives.**	Increase revenue neutral financial mechanisms for energy projects to be invested into future energy initiatives.
Objective 4	Place individual energy meters in multi-residential/business units.	Decrease energy consumption in existing and new multi-residential and business units through the installation of individual energy meters by 2025.	Decrease energy consumption in existing and new multi-residential and business units through the installation of individual energy meters by 2025 **or sooner.**
Objective 5	Increase infrastructure maintenance to ensure resiliency against severe weather.	Not proposed to advance to next phase	**Advocate for autonomy of electric and natural gas utilities to allow for new financing options.** **Ensure staff in place to execute, monitor and report on resiliency activities.**
Objective 6	Provide a financial advancement program for residential energy projects.	Not proposed to advance to next phase.	Not applicable.
Objective 7	Not applicable.	Not applicable.	**Outline/identify key locations/buildings for extreme weather events (evacuation centres) and make sure local and dispatchable heat and electricity at these locations.**

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Objective 8	Not applicable.	Not applicable.	**Ensure back-up power available for vulnerable populations.**
Objective 9	Not applicable.	Not applicable.	**Incorporate Durham Region's Climate Adaptation Plan.**

Vision Element 6

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Vision Element	In terms of cost, affordability for **all**!	In terms of cost, affordability for **all**!	In terms of cost, affordability for **all**!
Goal	Provide affordable energy services to all consumers.	Provide affordable energy services to all consumers.	Provide affordable energy services to all consumers.
Objective 1	Decrease home energy bills by 100% for all homes by 2050.	Decrease home energy bills by 100% for all **new** homes built **after 2030**.	**Reduce demand by increasing energy efficiency.**
Objective 2	Increase micro-generation and energy storage.	Increase micro-generation and energy storage **being used by all customers by 2050**.	Increase micro-generation and energy storage being used by all customers by 2050.
Objective 3	Tax unsustainable practices and fund/incent sustainable.	**Increase advocacy for Province to continue to tax unsustainable fossil fuel practices (carbon tax; cap and trade tax) and fund/incent sustainable practices.**	Increase advocacy for Province to continue to tax unsustainable fossil fuel practices (carbon tax; cap and trade tax) and fund/incent sustainable practices.
Objective 4	Tax unsustainable practices and fund/incent sustainable.	**Increase/develop incentive program to install micro/renewable energy to help decentralize the grid.**	Increase/develop incentive program to install micro/renewable energy to help decentralize the grid. **Unlock policy to allow for a smarter grid/supply that gives people options (microgrid, solar islanded mode, multiple/competitive market supply).**
Objective 5	Tax unsustainable practices and fund/incent sustainable.	**Increase load shifting to night.**	Increase load shifting to night.

	Developed September 20/16	Presented February 28/17	Input Received February 28/17
Objective 6	Tax unsustainable practices and fund/incent sustainable.	**Increase number of incentives for electric vehicles.**	Increase number of incentives for electric vehicles.
Objective 7	By-laws or local regulation to encourage development of energy efficient new construction.	(Not proposed to advance to next phase).	Not applicable.

Vision Element 7

	September 20/16	Advanced to February 28/17	Draft Final
Vision Element	Community collaboration for simple solutions	Community collaboration for simple solutions	Community collaboration for **innovative** solutions
Goal	Engage community stakeholders through collaboration to develop effective and simple solutions.	Engage community stakeholders through collaboration to develop effective and simple solutions.	Engage community stakeholders through collaboration to develop effective and **innovative** solutions.
Objective 1	Increase awareness of Durham's energy stakeholders by utilizing innovative communication strategies to annually report successes on the plan and gather feedback.	**Maintain an up-to-date DCEP communication plan.**	Maintain an up-to-date DCEP communication plan.
Objective 2	Target 90% of energy stakeholders in Region.	Increase commitment and involvement of energy stakeholders in Durham Region in the DCEP and its implementation to 90% by year end 2018.	Increase commitment and involvement of **the community** in the DCEP and its implementation to 90% by year end 2018.
Objective 3	Implement two-way communication channels.	**Regularly report successes and setbacks regarding the implementation of the DCEP and gather feedback.**	Regularly report successes and setbacks regarding the implementation of the DCEP and gather feedback.
Objective 4	Not applicable.	**Decrease administrative barriers to distributed energy resource generation (e.g. Germany).**	Decrease administrative barriers **and streamline process** to distributed energy resource generation (re. Germany).

	September 20/16	Advanced to February 28/17	Draft Final
Objective 5	Review and evaluate engagement strategy annually.	Not proposed to advance to next phase.	Not applicable.
Objective 6	Increase stakeholder “pockets” by 20% each year.	Not proposed to advance to next phase.	Not applicable.

Appendix H: Steering Committee Proposed Goals

The project Steering Committee proposed fourteen additional goals for stakeholder consideration. The stakeholders at the February 28, 2017 session were asked to identify the top three goals via a voting process using a 1-5 weighted star rating. The following tables capture the voting results for each goal, followed by proposed modifications to the goals and the development of possible objectives for each. The higher the number of stars the more favourable the goal. The "Flag" column indicates the number of comments that flagged or signaled a concern. The number of votes and the number of signatures should be the same and serves an audit function.

Goal: Create healthy, walkable communities with employment close to home and telecommute options

Comments:

Pro	Con
• With 3 to 1 targets and prices of homes in Toronto increasing, telecommuting will reduce travel and lessen stress. • Fewer vehicles on roads wherever possible.	• Not always feasible. • Viability, cost to entice companies, globalized work environment.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
49 votes 46 signatures	1	1	3	4	8	32	211

Goal: Enhance electrical and natural gas grid flexibility for new technologies and energy sources

Comments:

Pro	Con
• Excellent for expansion. • Reduce cost for peaking energy. • Flexibility to adapt to changing market conditions, technology with cost drivers.	• No comments.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
46 votes 49 signatures	0	0	1	4	17	24	202

Goal: Provide light rail transit (LRT) in lakeshore communities and Toronto by 2050

Comments:

Pro	Con
• Already planned along Hwy 2. • Aim for this sooner than 2050. • Ditto! • Relieve congestion.	• Cost.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
46 votes 46 signatures	0	1	4	1	10	30	202

Goal: Advocate for real estate sector to list energy ratings of homes by 2020

Comments:

Pro	Con
• Already coming down the pipeline?	• No comments.

Votes

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
47 votes 47 signatures	0	2	2	9	13	21	190

Goal: Develop a diversified energy hub that would be a centre of excellence for innovation, collaboration and research in Durham Region

Comments:

Pro	Con
• Durham is uniquely positioned to play this role – plus JOBS – look at other places that have specialized in forward thinking (Waterloo). • First mover. • Technology think tank. • Jobs and research!	• First mover.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
46 votes 46 signatures	0	2	2	7	16	19	186

Goal: Ensure all commercial and municipal fleet vehicles run on renewable fuels or electricity by 2030

Comments:

Pro	Con
• Finance via cap and trade. • Economic development opportunities. ✓	• Cost. ✓✓✓ • Cold weather.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
45 votes 42 signatures	0	3	2	7	9	24	184

Goal: Ensure all buildings Net-Zero energy by 2050

Comments:

Pro	Con
• Enforceable by code? • Maybe for <u>new</u> buildings. • Maybe not feasible? • Ambitious but need to balance with affordability. • Goal would require legislation • Both residential and institutional, commercial, and industrial?	• Why?

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
44 votes 45 signatures	0	0	2	11	14	17	178

Goal: Seed an investment mechanism to support local energy initiatives via a substantial investment

Comments:

Pro	Con
• Engage private and local developers.	• Cost? • Who pays? Subsidies not always effective or necessary.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
45 votes 44 signatures	0	1	2	12	14	16	177

Goal: Develop, adopt and report on progress toward local conservation goals of energy producers, generators, distributors and major users by 2022, the end of the next Provincial Long-Term Energy Plan

Comments:

Pro	Con
• Including high profile public education program.	• Report to who?

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
47 votes 47 signatures	1	1	5	14	9	17	174

Goal: Promote change to the Electrical Code to allow Tesla Powerwall battery use in Canada

Comments:

Pro	Con
• Currently technology exactly similar to Tesla Powerwall is allowable. Need to drill down. Call me – Janet at OPUC. • Storage will delink power production and usage. • Ensure that the technology is **not** proprietary – universal. • Not Tesla. Buy local **eV Fern Ltd** energy storage. • Or similar storage device. • Battery storage in general do not tie directly to Tesla. • Agree strongly with. • Need standardization.	• Be careful tying yourself to one technology. • Why just Tesla? • Caution on picking winners and losers.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
45 votes 46 signatures	1	6	9	5	7	17	152

Goal: Extend GO Transit rail service to Uxbridge and Beaverton

Comments:

Pro	Con
• No comments.	• Could spur on much more sprawl! • How is the region able to do this? • Market demand? • Priority? • Only if population/ridership warrants. • Cost of empty buses.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
44 votes 41 signatures	3	4	5	14	8	10	138

Goal: Support establishment of a group to lead and spearhead community solutions building at the local level (e.g. Durham Sustain Ability or Green Communities Canada RAIN Community Solutions)

Comments:

Pro	Con
• Accountability.	• No comments.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
43 votes 42 signatures	0	2	9	10	14	8	136

Goal: Promote creation of a new multi-fuel co-operative utility for Durham Region

Comments:

Pro	Con
• See Vermont efficiency utility for example of how this works. • Why?	• I'm not sure what that means. • Me neither. • We already have enough utilities. • Scale not always the most important.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
42 votes 42 signatures	2	4	9	18	6	3	115

Goal: Provide free basic energy services for all

Comments:

Pro	Con
• No comments.	• $$? Water, gas as well? • Would prefer basic **income.** • This would just need to be subsidized by other actors who may not equally benefit.

Votes:

Final Counts	Flag!	1 Star	2 Star	3 Star	4 Star	5 Star	Total # of Stars
45 votes 42 signatures	15	7	10	6	2	5	78

Following the voting, the stakeholders were asked to comment on the top three goals suggested by the project Steering Committee and develop possible objectives. The results follow:

Top Goal 1	Modified Goal	Proposed Objectives
Create healthy, walkable communities with employment close to home and telecommute options.	Create healthy, **accessible** communities with **an excellent and well-integrated active transportation network,** employment close to home and telecommute**/virtual work** options.	• Better relationship between commercial. • Improving “walkability” in the community. • Increase all forms of mobility by 2022 through creation of a walkable community master plan that aligns with the DCEP, includes an inventory of existing assets (sidewalks), connects existing active transportation networks thoughout Durham Region and enhances safety and accessibility (lighting and landscape design). • Changing the way communities are built using a more modular system that makes commercial centres easier to access by foot. • Create disincentives for car use and parking. • Free internet access everywhere including rural. • More satellite offices. • Increase employers comfort level around telecommuting. • Destination driven trails and designed for general use and maintained appropriately. • Include sustainability in asset management. • Increase internet service – high speed – to encourage telecommute and virtual meetings and include this as part of an economic development plans. • Active promotion of benefits of telecommuting and shared office space. • Embed active transportation network into land use planning.

Top Goal 2	Modified Goal	Proposed Objectives
Enhance electrical and natural gas grid flexibility for new technologies and energy sources.	**Ensure** electrical and natural gas grid flexibility for **distributed integrated low carbon energy generation**.	• Identify and promote thermal networks (low carbon district heating) within existing grid structures. • Determine where in the grid system retrofits would be required to allow for micro-grid adoption and conduct those retrofits. • Reduce restrictions on energy suppliers through O. Reg. 22/04 (distribution code) to allow for easier adoption of distributed energy reserves. • Mandate new builds to Net-Zero. • Increase public awareness surrounding requirements for adopting micro fit particularly surrounding safety. • Increase adoption of district energy resources (micro) for households, business and industry • Increase renewable natural gas (RNG) injection in pipelines to 10% by 2030. • Establish stepped process to enhance electrical grid – power and smart tech – new build by 2025. Retrofit all existing by 2030. • Increase hydrogen gas in natural gas pipes to 5% by 2030. • Standardize ESA regulations on local renewable energy generation by 2030. • Increase natural gas infrastructure in regulations to 100% penetration by 2040. • All new government/civic buildings to include electric vehicle charging by 2020. • By 2025 all renewal energy technology to base fleets are electric or green fuel. • Increase natural gas system: engage natural gas utilities to build R.N.G. facilities to make biofuel into R.N.G. by 2025 in two rural hubs. • Increase grid system: engage local distribution companies (LDC's) to build "E" infrastructure to facilitate two way power and RNG infrastructure. • Increase electrical grid to accommodate rail electrification: engage utilities to build out by 2030.

Top Goal 3	Modified Goal	Proposed Objectives
Provide light rail transit (LRT) in lakeshore municipalities and Toronto by 2050.	Provide light rail transit (LRT) in lakeshore municipalities **connecting to** Toronto by 2050.	• Increase bus service along Hwy 2 from Newcastle to Pickering by 2015. • Develop integrated light rail transit (LRT) along Hwy 2 from Newcastle to Pickering by 2035. • Increase mixed use development along Hwy 2 corridor for increased user base. • Increase collaboration with developers and planners to prioritize transit localization and hub development (e.g. maximum 500 metre walking distance to transit). • Increase LRT opportunities for north/south connections to GO Transit lines. • Increase opportunities to use existing rail infrastructure for LRT along lakeshore and also further north (e.g. Hwy 407). • Increase density along regional corridors. • Decrease single occupancy vehicles (SOVs). • Optimize public transit connections/efficiencies. • Increase Durham's share of provincial transportation funding. • Provide business case to justify LRT.

Appendix I: Stakeholder Working Session #3 - Big, Bold Goals

As a result of this working session, nine new goals were drafted; each one vetted and improved upon twice. Participants voted on the final wording of the goals using a five-point Likert scale. Strong agreement is a weight of five. Strong disagreement is a weight of one. Not sure is a weight of zero. The allocation of votes and related comments are shown below.

Original Wording: Durham Region is Net-Zero carbon by 2050

Revision: Durham Region is net negative carbon by 2050.

Final: Durham Region develops a smart energy system to balance need versus generation, creating surplus renewable energy that is exported for long-term economic viability and a Net-Zero community.

Comments:

Strengths & Opportunities	Concerns & Weaknesses
• No comments noted.	• No comments noted.

Votes:

Final Counts	Strong Agreement (5)	Agreement (4)	Neutral (3)	Disagreement (2)	Strong Disagreement (1)	Not Sure (0)	Total
46 votes 45 signatures	22	20	3	1	0	0	201

This goal supports all seven vision elements:

- Innovative, smart and diversified energy solutions.
- Transparent, accountable and committed to the vision.
- Reduced carbon footprint through technology, conservation and policy.
- Economic prosperity, and community and environmental health.
- Reliable, resilient, integrated, sustainable, and financially viable energy sources.
- In terms of cost, affordability for **all**!
- Community collaboration for simple solutions.

Original Wording: Durham becomes a negative Net-Zero community that will enhance quality of life by absorbing more carbon than producing it.

Revision: Durham Region becomes a self-sufficient carbon sink for the province and profits from sold renewable energy surplus.

Final: Durham becomes an international leader in carbon neutrality and sequestration, offsetting national greenhouse gases and profiting from surplus renewable energy.

Comments:

Strengths & Opportunities	Concerns & Weaknesses
• Carbon cement.	• No comments.

Votes:

Final Counts	Strong Agreement (5)	Agreement (4)	Neutral (3)	Disagreement (2)	Strong Disagreement (1)	Not Sure (0)	Total
45 votes 44 signatures	15	18	9	2	0	1	178

This goal supports one of the vision elements:

- Reduced carbon footprint through technology, conservation and policy.

Original Wording: Integrated, mixed use, walkable, self-sufficient communities. (e.g. Freiburg, Germany).

Revision: Mandate integrated, mixed-use, walkable energy self-sufficient communities.

Final: Develop integrated, mixed use, self-sufficient communities.

Comments:

Strengths & Opportunities	Concerns & Weaknesses
• I love it!	• Not very broad. • Too general a statement.

Votes:

Final Counts	Strong Agreement (5)	Agreement (4)	Neutral (3)	Disagreement (2)	Strong Disagreement (1)	Not Sure (0)	Total
45 votes 44 signatures	15	18	9	3	0	0	180

This goal supports two of the vision elements:

- Reduced carbon footprint through technology, conservation and policy.
- Economic prosperity, and community and environmental health.

Original Wording: Reduce energy use per capita and focus on energy generation to go negawatts.[2]

Revision: Reduce energy use per capita and then focus on energy generation to go negawatts.

Final: Reduce energy use per capita and focus on renewable energy generation that has no negative environmental or health impacts locally or globally, prioritize negawatts.

Comments:

Strengths & Opportunities	Concerns & Weaknesses
• No comments noted.	• Focus might be to use less. “No negative” not realistic.

Votes:

Final Counts	Strong Agreement (5)	Agreement (4)	Neutral (3)	Disagreement (2)	Strong Disagreement (1)	Not Sure (0)	Total
40 votes 38 signatures	14	15	9	2	0	0	161

This goal supports three of the vision elements:

- Reduced carbon footprint through technology, conservation and policy.
- Reliable, resilient, integrated, sustainable, and financially viable energy sources
- In terms of cost, affordability for **all!**

[2] Negawatt power is a theoretical unit of power representing an amount of electrical power (measured in watts) saved.

Original Wording: We are a self-sufficient community, producing sufficient local energy for a Net-Zero community.

Revision: We are an energy self-sufficient community, producing local, renewable energy for a Net-Zero carbon community.

Final: We are a self-sufficient community for producing energy and food, while maintaining negative carbon Net-Zero and quality of life.

Comments:

Strengths & Opportunities	Concerns & Weaknesses
• No comments noted.	• Negative? • Net-Zero can be problematic.

Votes:

Final Counts	Strong Agreement (5)	Agreement (4)	Neutral (3)	Disagreement (2)	Strong Disagreement (1)	Not Sure (0)	Total
42 votes 38 signatures	13	19	6	4	0	0	167

This goal is challenging yet feasible, if a community-wide approach is taken with major changes to the current social economic structure that focuses on all sectors and components.

This goal supports five of the vision elements:

- Reduced carbon footprint through technology, conservation and policy.
- Economic prosperity, and community and environmental health.
- Reliable, resilient, integrated, sustainable, and financially viable energy sources.
- In terms of cost, affordability for **all!**
- Community collaboration for simple solutions.

Original Wording: Durham becomes world leader in how to be fossil fuel free.

Revision: Durham becomes a world leader in how to be fossil fuel free and that we produce surplus renewable energy that is exported, for long term economic viability.

Final: Durham Region is 100% fossil fuel free, in a cost-effective manner, and exports energy commodities to the surrounding region.

Comments:

Strengths & Opportunities	Concerns & Weaknesses
• No comments noted.	• No comments.

Votes:

Final Counts	Strong Agreement (5)	Agreement (4)	Neutral (3)	Disagreement (2)	Strong Disagreement (1)	Not Sure (0)	Total
43 votes 41 signatures	9	24	5	4	1	0`	165

This goal supports five of the vision elements:

- Innovative, smart and diversified energy solutions.
- Reduced carbon footprint through technology, conservation and policy.
- Economic prosperity, and community and environmental health.
- Reliable, resilient, integrated, sustainable, and financially viable energy sources.
- In terms of cost, affordability for **all!**

Original Wording: Durham specific binding policy/standard for Net-Zero buildings with $ penalties and incentives for those who either go beyond policy standards or are not compliant.

Revision: Durham Region will provide incentives for builders and buyers of Net-Zero buildings.

Final: Develop Durham-specific sustainability standards and associated incentive programs.

Comments:

Strengths & Opportunities	Concerns & Weaknesses
• And guiding resources.	• And penalties! • Need to consider impacts to surrounding areas.

Votes:

Final Counts	Strong Agreement (5)	Agreement (4)	Neutral (3)	Disagreement (2)	Strong Disagreement (1)	Not Sure (0)	Total
44 votes 43 signatures	13	15	10	3	3	0	164

This goal helps to address the vision through the reduction of carbon dioxide (greenhouse gas) from home heating costs.

This goal supports four vision elements:

- Transparent, accountable and committed to the vision.
- Reduced carbon footprint through technology, conservation and policy.
- Reliable, resilient, integrated, sustainable, and financially viable energy sources.
- In terms of cost, affordability for **all!**

Original Wording: We need to create the right socially responsible and sustainable mix of energy forms at the right consumption levels.

Revision: Achieve a sustainable balance between energy generation and consumption.

Final: Cost and type of energy per household must be affordable, reasonable, sustainable and environmentally responsible.

Comments:

Strengths & Opportunities	Concerns & Weaknesses
• No comments.	• Whatever is landed on must ensure that energy cost and behavior are aligned. If cheap prices encourage bad behavior, I am not in favour. • Against privatization of energy production. Make it public.

Votes:

Final Counts	Strong Agreement (5)	Agreement (4)	Neutral (3)	Disagreement (2)	Strong Disagreement (1)	Not Sure (0)	Total
47 votes 45 signatures	8	17	21	0	1	0	172

This goal supports all seven vision elements:

- Innovative, smart and diversified energy solutions.
- Transparent, accountable and committed to the vision.
- Reduced carbon footprint through technology, conservation and policy.
- Economic prosperity, and community and environmental health.
- Reliable, resilient, integrated, sustainable, and financially viable energy sources.
- In terms of cost, affordability for **all!**
- Community collaboration for simple solutions.

Original Wording: 100% of all existing buildings (residential, commercial, and institutional) are Net-Zero carbon.

Revision: 100% of all buildings will be negative Net-Zero carbon and produce more than they use.

Final: 100% of all buildings will be negative Net-Zero carbon and produce more energy than they use.

Comments:

Strengths & Opportunities	Concerns & Weaknesses
• No comments noted.	• Careful with externalities. • Net-Zero versus Net-Zero carbon. • Buildings only? • Shouldn't just be buildings generating more energy. • New only? All?

Votes:

Final Counts	Strong Agreement (5)	Agreement (4)	Neutral (3)	Disagreement (2)	Strong Disagreement (1)	Not Sure (0)	Total
40 votes 39 signatures	7	19	9	5	0	0	148

This goal will reduce carbon footprint.

This goal supports all seven of the vision elements:

- Innovative, smart and diversified energy solutions.
- Transparent, accountable and committed to the vision.
- Reduced carbon footprint through technology, conservation and policy.
- Economic prosperity, and community and environmental health.
- Reliable, resilient, integrated, sustainable, and financially viable energy sources.
- In terms of cost, affordability for **all!**
- Community collaboration for simple solutions.

Appendix J: Evaluation Form Summary - Stakeholder Session #1

33 responses were received.

1. **Our Facilitators, Helen Break and Karyn Dumble:**

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Response
Built rapport with the group	15	15	3	0	0	0
Created a climate of safety and trust	16	14	2	0	0	1
Kept the group moving	28	5	0	0	0	0

2. **The processes chosen/developed for us:**

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Response
Were managed well	24	6	2	0	0	1
Worked to get us further ahead	16	15	1	0	0	1
Helped us to develop consensus	15	13	3	0	0	2

3. **What did you like best about this session?**

Responses:

- The visioning exercise was efficient and helped to build consensus among the group **quickly.**
- Mixture of people at the table.
- Flowed well.
- Group work, working with others in DCEP moving forward.
- How clearly it laid out the steps and made progress toward them. A lot of work in a short period of time.
- Active session after lunch.
- Participation.
- Efficiency.
- Interactive brainstorming.
- It was very well managed. Just the right amount of information and brainstorming to start off the process.
- How interactive and integrated each activity was.
- Interactive – did not have to sit and listen to a series of presentations.
- Making us active after lunch. Overall facilitation was excellent!

- Brainstorming. Participatory. Adult learning and contributory.
- The lunch.
- Collaborative approach, kept group engaged throughout process.
- Very engaging.
- The visioning exercise was really well done.
- Efficient.
- The ability to work in groups and collaborate. Developing goals and brainstorming ideas.
- Engaging.
- The workshopping worked well and believe yielded a number of concrete goals/objectives.
- Interaction.
- Kept the process moving forward.
- Wide range of activities to assist in identification of vision, goals and objectives.
- Good mix of backgrounds at each table.

4. What did you like least about this session?

Responses:

- Needed more time to develop objectives.
- Lack of attendance by Mayor and Councillors.
- Everything was good.
- The challenge of being concrete when the vision and objectives are quite challenging to wrap your head around.
- Assumptions (sometimes while developing ideas).
- It seemed like a lot of people were focused on electricity as energy, whereas there are other forms such as water, gas, etc. that are impactive (sic) to communities.
- Nothing! Very well timed and thought out.
- Sound system – very difficult to determine what was being said. The acoustics of the room were probably to blame.
- I'm not sure how practical all the outcomes of the meeting will benefit the plan. Will need to wait and see.
- Too tightly structured.
- Nothing.
- Long day – 3 hours is enough.
- Not enough time for logical, reasoned discussion of goals and objectives and what constitutes a coherent set of objectives.
- Felt rushed – barely had time to read and digest material before moving on.
- Some overlap in key vision elements made it difficult to separate objectives.
- Meeting stakeholders/different viewpoints (facilitator note: reading the entire evaluation makes me suspect this comment was misplaced in this category by the participant).

5. What could we have done differently to make this a better experience for you?

Responses:

- More info on actual technologies/projects that exist, related to energy production/delivery given prior to the session, to better inform the discussions.
- Explain current energy projects that are on the books, i.e. ethanol plant.
- All good.
- Nothing.
- Provide individual survey.
- Provided more background or examples of feasible community energy plans to provide perspective.
- Icebreaker?
- Honestly, I really enjoyed the session. No complaints!
- Objectives portion. There were differences in the purpose of the objectives (i.e. of the plan or over the long term for Durham).
- Not any special.
- It would have been helpful to have the mechanics of the objective visible while we were working on them.
- Not sure – might just be my personality. It was a great session overall. Maybe just shorter.
- Nothing.
- Shorter session.

6. Other thoughts or feedback you'd like to share?

Responses:

- Enjoyed the workshop.
- I would change nothing.
- The environment was very amenable. Lots of natural light and airy room was pleasant. Food was excellent and well balanced as well.
- N/A.
- Well done.
- It offered community participated planning process that was great experience while I come from underdeveloped world.
- Need electronically assisted, lightweight, personal transport (e.g. tricycles). Need distributed CHP generation systems (e.g. capstoneturbine.com). Need heat pump in every home (e.g. Mitsubishi high SEER units).
- Very good facilitation.
- Thank you for the opportunity to participate.
- None.
- Good process – needs Provincial mandate and organization.
- Don't do the one word!
- Well-paced. No complaints!

Appendix K: Evaluation Form Summary - Stakeholder Session #2

42 responses were received.

1. **Our Facilitators, Helen Break and Karyn Dumble:**

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Built rapport with the group	18	24	0	0	0
Created a climate of safety and trust	22	17	3	0	0
Kept the group moving	28	11	1	0	0

2. **The processes chosen/developed for us:**

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Were managed well	15	24	3	0	0
Worked to get us further ahead	10	25	6	1	0
Helped us to develop consensus	9	17	15	2	0

3. **What did you like best about this session?**

Responses:

- Teamwork activities.
- Get everyone thinking.
- Presentations.
- Purpose.
- Voting with plastic disks.
- Active engagement by stakeholders.
- The interaction.
- Ability to discuss issues with other stakeholders/interested parties.
- It reconnected/re-energized my community involvement in long-term sustainable planning.
- Collaborating outside of my industry. I would love to have cross-pollination like this going forward.
- Lots of opportunities for interaction/discussion steadying of progress/on activities.
- Good cross-section of stakeholders.
- Free-thinking and choice.
- Gaby's session.
- Late afternoon visioning (outrageous session!).
- Very interactive – helped shape vision and goals.

- Meeting a variety of stakeholders.
- The interacting and networking with other like-minded individuals.
- Activities.
- Feedback Frames terrific prototype. Definitely worked well. Food provider was delicious, would use again. Table group work and bringing group together for wall work – kept everyone moving.
- Discussion on business cases.
- Voting on goals.
- Fine tuning progress to date.
- Networking with extended family.
- There were numerous group activities that allowed for the engagement of the variety of individuals in the room.
- Table discussion.
- Very informative, lots of new information came about, and new ideas.
- Fast-paced.
- Covered material.
- More “outside the box” thinking.
- The exercises were excellent. There was great energy in the room.
- I liked the variety of breakout sessions – got people up and down, talking to different groups.
- Good summaries after each session.
- Meet and network with people from various interest groups.
- Idea sharing.
- Networking.
- I like that no idea is too silly.
- Getting to vote towards Feedback Frames.
- Moved along well and kept to defined timelines.
- Lots of working groups.
- I liked getting a better sense of Durham’s direction and what seems like a genuine recognition that we need to do better.
- Very informative about Region’s plan.
- Great variety of attendees with different points of view.
- Lunch was great!

4. What did you like least about this session?

Responses:

- More collaboration of higher management.
- Hard time hearing – have microphone system.
- The presentation on the baseline (should have been done by Brian Kelly).
- It’s a long day to be out of the office.
- Epic – so many exercises. Yes, I realize I’m complaining about spending a day thinking – haha.
- Redrawing the window pane was a challenging exercise. Too many variables to try to conceptually balance all at once.

- Some visions/goals/metrics unclear.
- Plan development has little insight and requires more understanding to ensure a smart adaptive plan.
- Steering committee comprised of LDC.
- Long session. Tend to lose momentum in afternoon.
- Not sufficient time to fully explore various themes.
- Not enough technical expertise in the room to understand implications of various goals and objectives presented.
- The group sessions around the room were crowded!
- Breakfast quality.
- The 2030 and 2050 activity was too long and detailed for the time given to do it in.
- 2030 – 2050 session was too big a project to try to get both periods addressed.
- Could have used more time on the activities. A lot for a single day. That being said, it is very challenging, understandably, to get such a great turn out to a multi-day event.
- N/A.
- This session was during my classes but nothing can really be done about that.
- The hat opening activity.
- Compared to last session, new goals were not established and still need to be finalized
- Not able to complete all tasks.
- Not sure if some stakeholders understand community energy planning process.
- Might have been too many activities – hard to keep attention in the late afternoon.
- Small room.
- Too many work sessions.
- But I also feel like thinking too broad makes it really difficult to hone in on actions that we should be taking.
- Nothing – it was a great session.
- There was some confusion about activity expectations.
- Quite long.
- Too much information – hard to provide input or feel that we had a handle on **all** aspects.
- A lot of overlap in content, repetition.
- Complex issues.
- Duplication of goals and rewriting.
- Missing references from main research which could guide the group.
- Felt rushed at times.

5. What could we have done differently to make this a better experience for you?

Responses:

- Shorter presentation of the flip chart.
- Presentations were hard to hear. People tuned out.
- Condense it a bit.
- Nothing.
- Could have explained the 1st and 2nd activities a bit better.
- Need to ensure have appropriate participation of subject matter experts.

- Perhaps slightly shorter session (6 hrs max).
- More focused.
- More technical expertise.
- Directions at the parking.
- Shorter workshop: ending at 3 o'clock.
- Keep the fluff at the end of the workshop because people's attention spans taper off after lunch time.
- For each activity, include an explanation of how the activity (or outcome of the activity) will feed into/integrate with the project – DCEP development.
- Introductions to all members.
- I don't think this session could have been better, other than the venue. Room was small for the attendance.
- Clarify the instructions for workshops/activities and improve the graphics/wording on PowerPoint.
- Less activities – longer time.
- I think doing introductions would have been good and switching tables.
- Could have gotten a little deeper into objectives and outcomes for the DCEP – great to have high-level goals – but need to compare to outcomes as well.
- Choose a bigger room to facilitate the session, less segments and more time per segment
- Window activity could have been skipped.
- I think the overall goal of this process is still unclear. What does Durham want out of the community energy plan?
- Not sure.
- Some activities did not allow for enough time (i.e. 2030/2050 Durham planning).
- More time – not over lunch.
- Better organized table - ensure people who switch groups or sit with other perspectives.
- Multiple half-day sessions (day was long).
- Break out over 2 days.
- Most activities were very similar in concept, less activities would allow more time on core initiatives.

6. Other thoughts or feedback you'd like to share?

Responses:

- This process seems to be the same old, same old. It would be refreshing to come up with new ways to accomplish the objective quicker. Unfortunately, I don't have an answer to that though.
- Well done. Lots of work went into this event.
- It was very good lots of dialogue.
- Good session overall.
- Overall, very well run.
- How will these goals and visions translate to meaningful action, implementable tasks?
- It was good. Very helpful!
- Well done and organized! Was very thankful to have taken part.
- N/A.

- None come to mind.
- Repetitive goals on walls, i.e. LRT – never heard this mentioned in previous stakeholder session.
- Explain the action plan, how are the goals going to be met.
- Please provide more context on community energy planning for stakeholders
- Well done!
- Friendly suggestion to focus on performance when making objectives – avoid being too prescriptive and encourage mix of *(*illegible*).*
- Enjoyable session!
- Nice job!
- Did not like the “bowl” or the clapping!

Appendix L: Durham Community Energy Partners

The development of the Durham Community Energy Plan is financially supported by the Ontario Ministry of Energy