


# COMMUNITY ENERGY TRANSITION STRATEGY ANNUAL PROGRESS REPORT 2017

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The logo for the City of Edmonton, consisting of the word 'Edmonton' in a white sans-serif font, centered within a white square border.



**2017 WAS AN EXCITING  
YEAR FOR CLIMATE  
CHANGE ACTION IN  
EDMONTON.  
CANADA'S SIGNING OF  
THE PARIS AGREEMENT,  
THE RELEASE OF THE PAN  
CANADIAN FRAMEWORK  
ON CLIMATE CHANGE AND  
CLEAN ENERGY COMBINED  
WITH EDMONTON'S LAUNCH  
OF NATION-LEADING  
ENERGY LABELLING  
PROGRAMS.**

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EXECUTIVE SUMMARY

2017 was a very busy year for Energy Transition initiatives at the City of Edmonton. Building on the strong governance framework that had been developed in 2015 & 2016, the 2017 year saw the launch of community facing programs designed to assist businesses and residents in reducing their carbon footprint.

The overarching theme of the work done in 2017 year, was “gearing up for community scale programs.” The work has been split into three main elements: socializing the urgency of climate change with the Edmonton community, ensuring the City as a corporation is taking a leadership role with respect to carbon reduction and, the establishment of pilot scale community programs and enabling initiatives that will set the stage for larger scale programs in the future.

CHANGE FOR CLIMATE – CONVERSATIONS ON CLIMATE CHANGE WITH EDMONTONIANS

The Change for Climate awareness and outreach program was launched in November 2017. The program is designed to create climate awareness and ready the community for full scale community programs in the future by giving Edmontonians the tools to talk about climate change and take action in their everyday lives. The Change for Climate program is the public facing “thread” that ties Edmonton’s Climate Change Action initiatives together while socializing the urgency of addressing climate change with the nearly one million Edmontonians. The program includes the expansion of the successful EcoCity Edmonton grant, which provides funding to community groups to undertake low carbon initiatives, and the continued support of the Edmonton Federation of Communities Leagues through the Green Leagues program, a program that helps leagues assess options to improve energy efficiency and install renewables as well as access available funding to take these actions.

CITY AS A CLIMATE LEADER

The City showed strong corporate leadership this year with the update to its Sustainable Building Policy C532 which raised the bar for the construction of new civic buildings as well as introduce an innovative fund that sets aside 1% of the capital costs of a facility to be directed to the installation of on-site renewables. The Sustainable Building Policy also contains the mandate to improve energy performance of existing buildings through the introduction of BOMA Best certification, benchmarking and recommissioning of facilities.

Significant work was undertaken to modernize the City’s Corporate Greenhouse Gas Management Plan. A cross departmental project team initiated the development of a comprehensive carbon reduction strategy for City operations looking at building retrofits, electrification of the bus fleet, the continued installation of LED streetlights, potential for on-site renewables and the possible purchase of green electricity. The updated Corporate Greenhouse Gas Management Plan will be provided to Council later in 2018. In addition, the City of Edmonton became a leader in 2017 with respect to monitoring and measuring its’ greenhouse gases by establishing a community greenhouse gas initiative conformant to the Global Protocol for Community Scale Greenhouse Gas Inventories; becoming one of the first Canadian cities to develop a BASIC + inventory (a gold standard allowing Edmonton to compare its emissions to other global cities).

EXECUTIVE SUMMARY CONT'D

In addition, a commitment was made to electrify the public transit bus fleet, an initiative that is often put forward as a priority action item any municipality can take when addressing its carbon footprint. With the proposed initial purchase of upto 40 buses beginning with the first delivery in 2018 and a longer term commitment to replace retired diesel buses with electric buses over time.

Sustainability was further entrenched in Edmonton through the continued development of the Blatchford neighbourhood. Advancement of the on-site district energy sharing system began in 2017 with construction of residential units expected to begin in 2018.

ESTABLISH INNOVATIVE PILOT SCALE COMMUNITY PROGRAMS

Two nation leading pilot programs relating to building energy benchmarking and reporting were launched in 2017. The Spot the Difference EnerGuide for Homes programs offers residents a \$400 incentive to get an EnerGuide evaluation and share their results on an online map. The Building Energy Benchmarking Program is designed to encourage market transformation where energy efficiency is appropriately valued and seeks to engage Edmonton’s large buildings in benchmarking their energy performance and sharing the results with the City and the public. Work was also initiated on establishing, with industry partners, curb side electric vehicle charging stations throughout various areas of Edmonton. This pilot program will inform future electric vehicle initiatives as well as the smart Transportation/Future Mobility analysis, currently being inducted.

Other low-carbon City building initiatives continued through 2017 including the expansion of the LRT, further support of infill, and the installation of the downtown bike lane network. These initiatives are integral to advancing a low carbon City; however, the progress of these initiatives are reported more comprehensively through other mechanisms then this annual report.

LOOKING AHEAD – GETTING TO SCALE AND POSITIONING EDMONTON AS A LOW CARBON HUB

Implementation of the Energy Transition Eight Year Action Plan is a very complex undertaking. A review of the plan was initiated in late 2017 to ensure its continued relevance and afford the opportunity to adjust directions and make course corrections in response to that review. The review will include a recontextualization of the plan in response to new directions coming out of the Intergovernmental Panel of Climate Change’s Cities and Climate Change Conference held in Edmonton in March 2018. The Action Plan review includes a more detailed forecast and investment plan that would align with the “Getting to Paris” scenario of taking action to keep global average temperature increases to 1.5 degrees celsius, a commitment outlined in the Edmonton Declaration that was presented at the conference for discussion with leading global cities. The results of this exercise are expected mid 2018 and it will inform council on decisions on future levels of effort and investment to achieve a low carbon future.



# BACKGROUND

*In 2011, Edmonton City Council approved The Way We Green describing the sustainable and resilient city we want Edmonton to become:*

**EDMONTON IS A SUSTAINABLE AND RESILIENT CITY. LIVING WITHIN THE LIMITS OF NATURE, WE HAVE BECOME A LEADER IN ENERGY EFFICIENCY AND ENERGY CONSERVATION. A CARBON-NEUTRAL CITY, EDMONTON IS PREPARED FOR DISTURBANCES THAT COULD RESULT FROM CLIMATE CHANGE.**

*This vision was more deeply examined in 2012 with the development of Edmonton's Energy Transition Discussion Paper which concluded that:*

**A SHIFT IN ENERGY SOURCES AND GHG EMISSIONS IS POSSIBLE, AND MOST OF THE OPPORTUNITIES ARE CURRENTLY EITHER COST COMPETITIVE WITH OR LESS EXPENSIVE THAN CONVENTIONAL ENERGY SYSTEMS.**

*In October 2012, a Citizens' Panel on Edmonton's Energy and Climate Challenges was established to understand whether a demographically and attitudinally representative sample of Edmontonians wanted Edmonton to become low-carbon, whether they considered the 2012 Discussion Paper to provide a good map for getting there, and how much they supported particular actions proposed in it. In its report to City Council in April 2013, the Panel's main recommendation [supported by 92% of panelists] was:*

**THAT THE CITY OF EDMONTON TAKE THE MEASURES NEEDED TO BECOME A LOW CARBON CITY BY 2050.**

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**With this rationale and community support, work was undertaken to develop Edmonton's Community Energy Transition Strategy (the Strategy) – a risk management strategy designed to make Edmonton an energy sustainable city, with actions that would:**

- Reduce Edmonton's greenhouse gas emissions to levels consistent with limiting the long-term rise in average global temperature to 2C,
- Increase energy efficiency and conservation in all sectors,
- Ensure Edmonton's energy delivery systems were resilient to shocks and disturbances from climate change, and
- Position Edmonton to participate in global economic opportunities as the world transitions to cleaner energy.

**The Strategy described an energy-sustainable Edmonton, exemplified by:**

- Energy literate citizens with energy conserving lifestyles,
- World-class energy efficiency in all types of buildings,
- World-class energy efficiency in industrial processes,
- A strong shift to active and public transportation as preferred modes of travel,
- An urban form that is carefully designed to avoid unnecessary energy use and optimize free energy from the sun,
- Greener electricity from Alberta's electricity grid and local generating facilities,

- A greater portion of electricity produced close to where it is used through district energy systems, combined heat and power systems and renewable and alternative energy technologies, and
- Increased electrification of Edmonton's transportation system with passenger vehicles, buses, light trucks and light rail transit powered by clean electricity.

**Moreover, the strategy included an Eight-Year Action Plan identifying more than 150 actions in seven opportunity areas:**

- Energy use in buildings
- Generation of electricity and heat
- Energy use in industry
- Land-use, transportation and development
- Water and wastewater
- Waste reduction and recycling
- Leadership in City (corporate) operations

*The strategy explained that significant new sources of government funding would be needed to advance energy transition programs, including funding for education and awareness, capacity building, financial incentives and program administration. For the period 2018-2021, it was estimated that government funded costs would total approximately \$25-30 million a year in Edmonton. While noting that the cost of these investments was significant, the strategy determined that their benefits were even greater. By 2035, the Strategy was expected to deliver a net present value of approximately \$2.5 billion more than their investment cost. This figure was even greater (i.e., \$3.4 billion) when the social cost of carbon was assigned a value.*

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A three-phase approach was adopted to implement the Strategy:

- **Phase 1:** Establishing an Accountability Framework (2015–2016)
- **Phase 2:** Gearing-Up for Community-Scale Programs (2016–2018)
- **Phase 3:** Delivering Community Scale Programs (2019 and beyond)

To provide governance, oversight and community involvement on the advancement of the Energy Transition Strategy the following mechanisms were established and continued through 2017 and will continue into 2018:

- **City Council Advisory Committee:** On April 19, 2016, City Council approved the Energy Transition Advisory Committee Bylaw 17431 – establishing an advisory committee with a mandate to:
  - Promote the Strategy to each member's professional and community networks,
  - Share with, and receive from the City Manager, information regarding the implementation of the Strategy,
  - Provide broad independent advice to Council about the Strategy, and
  - Assist Council in developing performance measures for the Strategy.

The committee was recruited in early 2016, met throughout 2017 and will meet a minimum of six additional times during 2018.

- **Energy Transition Council Initiative:** Recognizing the importance of the Strategy and climate adaptation, City Council established this topic as one of its 24 Council Initiatives. The two desired outcomes of the initiative are: (1) Council leadership and engagement in the implementation of the Strategy and 2) Council leadership and engagement in the development of Edmonton's community climate change adaptation plan. Energy Transition continues to be an initiative through 2018.
- **Energy Transition Leadership Network:** Community leaders are invited to participate in events aimed at inspiring action, strengthening community and ultimately achieving a low carbon, sustainable energy future in Edmonton. With more than 100 community members actively working to achieve energy transition in Edmonton, members meet quarterly to generate new, innovative solutions and begin to move these ideas into action. Meetings also provide an opportunity to strengthen the network of energy transition leaders and help members identify new partners or collaborators to advance their initiatives. These popular events are held every three months with anywhere from 20 to 40 leaders attending.

WITH MORE THAN 100 COMMUNITY MEMBERS ACTIVELY WORKING TO ACHIEVE ENERGY TRANSITION IN EDMONTON, MEMBERS MEET QUARTERLY TO GENERATE NEW, INNOVATIVE SOLUTIONS AND BEGIN TO MOVE THESE IDEAS INTO ACTION.

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GOVERNMENT FUNDED COSTS WOULD TOTAL APPROXIMATELY \$25–30 MILLION A YEAR IN EDMONTON. WHILE NOTING THAT THE COST OF THESE INVESTMENTS WAS SIGNIFICANT, THE STRATEGY DETERMINED THAT THEIR BENEFITS WERE EVEN GREATER. BY 2035, THE STRATEGY WAS EXPECTED TO DELIVER A NET PRESENT VALUE OF APPROXIMATELY \$2.5 BILLION MORE THAN THEIR INVESTMENT COST.

## PHASE 2 – GEARING UP FOR COMMUNITY SCALE PROGRAMS

The 2017 year of the Implementation of Edmonton's Community Energy Transition Strategy (the Strategy) saw the launch of community facing programs designed to assist businesses and residents in reducing their carbon footprint. As per the approach outlined in the Strategy, the programs are pilot in nature, designed to showcase the concepts and ready the community for full scale community programs in the future. Also, the City wide marketing and community mobilization effort, Change for Climate, that was launched in late 2017. The Change for Climate program is the public facing "thread" that ties Edmonton's Climate Change Action initiatives together while socializing the urgency of addressing climate change with the nearly one million Edmontonians.

With the understanding that an energy-sustainable city will take decades to achieve, the strategy outlined three phases of work for the City to undertake, with Phase 1 focusing on the development of a strong governance and accountability framework. This was completed between 2014 and 2016, with the establishment of City Policy C585, a policy that entrenches City Council's commitment for an energy sustainable Edmonton and codified the principles of the strategy in the work the City undertakes, approval of new operational funding to advance key initiatives in the strategy (i.e. \$5.3 million through the City's 2016-2018 Operation Budget) and the creation of the Energy Transition Advisory Committee, a committee of council populated by industry leaders and two members of Council, to provide oversight and advise council on achieving a low carbon future.

The 2017 year, was the first year of Phase 2 of the implementation (2017 through 2019). Phase 2, designated "gearing up for community scale programs", is focused on three main themes: socializing the urgency of climate change with the Edmonton community, ensuring the City as a corporation is taking a leadership role with respect to carbon reduction and, the establishment of pilot scale community programs and enabling initiatives that will set the stage for larger community scale programs in the future.

**WITH THE UNDERSTANDING THAT AN ENERGY-SUSTAINABLE CITY WILL TAKE DECADES TO ACHIEVE, THE STRATEGY OUTLINED THREE PHASES OF WORK FOR THE CITY TO UNDERTAKE, WITH PHASE 1 FOCUSING ON THE DEVELOPMENT OF A STRONG GOVERNANCE AND ACCOUNTABILITY FRAMEWORK.**

PHASE 2 – GEARING UP FOR COMMUNITY SCALE PROGRAMS

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# 2017 ACTION ITEMS

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## 2017 ACTIONS AND PRIORITIES UPDATES

# 2017 ACTIONS & PRIORITIES UPDATES

The following summarizes progress towards advancing the Energy Transition Strategy in 2017:

## ENGAGING EDMONTONIANS ON CLIMATE CHANGE

### Launch of the Change for Climate program

This program is a call to all Edmontonians to take action on climate change and work together to reduce our greenhouse gas emissions. To help residents discover the best ways to take action, recognize the actions they are already taking and encourage them to do more, this program offers a spectrum of actions. The spectrum is organized by carbon footprint impact and in addition to encouraging commitments from residents, it also points them to the City programs they can benefit from as well as available Provincial rebates.

The Change for Climate program provides an opportunity to weave together all climate change related initiatives that the City is undertaking under one coherent, consistent and overarching movement with one look and feel. A key tool that helps bring City programs, community initiatives and residents together is the [changeforclimate.ca](http://changeforclimate.ca) blog. This blog provides a platform for residents to share their climate related stories, highlight and encourage participation in City programs and help develop positive social norms around taking action on climate change.

THIS PROGRAM IS A CALL TO ALL EDMONTONIANS TO TAKE ACTION ON CLIMATE CHANGE AND WORK TOGETHER TO REDUCE OUR GREENHOUSE GAS EMISSIONS.

### Renewable Series

As part of this larger effort to get residents excited and talking about climate change and to showcase the outstanding stories and initiatives taking place in Edmonton, the [Renewable Series](#) was developed. This video and blog series is about visionaries, creators, community leaders and above all else, Edmontonians, each with a unique vision of a sustainable future in the heart of Canada's fossil fuel industry. By the end of 2017 six episodes of Season One had been successfully released on social media.

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# 2017 ACTIONS & PRIORITIES UPDATES CONT'D

### EcoCity Grant Program Renewal

The City of Edmonton and Alberta Ecotrust are partnering again for the next three years to deliver environmental grants to help support improved energy literacy, the advancement of energy conserving lifestyles, and the shift to renewable energy. In 2017 the Edmonton Community Foundation committed to contributing \$300,000 to the EcoCity Edmonton Fund for the next three years.

*In 2017 EcoCity Edmonton Grants were awarded to:*

- ▶ St. Paul's United Church (\$25,000) for solar panels and tours
- ▶ Iron & Earth (\$20,000) to develop a local chapter and host reskilling workshops.
- ▶ Zion Baptist Church of Kensington (\$38,475) for solar panels and education program
- ▶ The Global Youth Network (\$20,000) for four climate focussed workshops over the course of a year
- ▶ Paths for People Committee (\$20,000) for support the City for Life public forum and workshop on Active Transportation

### Community Outreach Program

A comprehensive outreach program was established and implemented in 2017 which included street teams attending various events throughout the year, from the home renovation shows to Canada Day celebrations, to promote Climate Change action. In 2017, 32 outreach events were conducted, directly reaching over 2,500 people.

### Green Leagues

Renewal and continued support of the Edmonton Federation of Community Leagues sustainability resources. The Green Leagues program encourages the adoption of solar PV and energy efficiency upgrades in Community League buildings and raises awareness about the benefits of such improvements with its members. There are now 21 energy efficiency projects, 15 solar PV installations and 3 net zero electricity community leagues.

A COMPREHENSIVE OUTREACH PROGRAM WAS ESTABLISHED AND IMPLEMENTED IN 2017 WHICH INCLUDED STREET TEAMS ATTENDING VARIOUS EVENTS THROUGHOUT THE YEAR, FROM THE HOME RENOVATION SHOWS TO CANADA DAY CELEBRATIONS, TO PROMOTE CLIMATE CHANGE ACTION.

# 2017 ACTIONS AND PRIORITIES UPDATES CONT'D

## CITY LEADERSHIP – OPERATIONS

### Approval of City Policy C532 – Sustainable Buildings

City Council approved the City's Sustainable Building Policy C532. The policy establishes standards for new and existing buildings that are nation leading for a cold climate city. For the first time it introduces commitments to maintaining sustainable building practices for the buildings it owns, leases and funds over the course of their entire lifecycle not just on the design and construction standards of new buildings. This includes a commitment to evaluating BOMA BEST as a tool, benchmarking Edmonton civic facilities to understand relative energy consumption patterns, and advancing continual recommissioning to improve energy efficiency on an ongoing basis.

### Update of the City's Corporate Operations GHG Management Plan

Over 2017, the largest effort to date has been taken to establish an ambitious, cost-effective plan for reducing greenhouse gas emissions in City (corporate) operations. The plan presents the levels of effort and investment required to achieve different carbon reduction scenarios across all City operations, exploring both the energy demand side as well as the supply side of the low carbon pathway. The plan will be presented to City Council in mid 2018 where Council will be asked to provide direction on the recommendations.

### Community Greenhouse Gas Inventory

In 2017, Edmonton released its first community greenhouse gas inventory that was calculated in conformance with the *Global Protocol For Community Scale Greenhouse Gas Emission Inventories*. This best practice international protocol allows Edmonton to compare its carbon footprint with other global cities. Edmonton is one of the first municipalities to utilize the BASIC+ methodology in Canada.

## Energy 101

Led by the City's Office of Energy Management, a comprehensive awareness and education program was launched in 2017. This program is intended to engage City employees and stakeholders in energy management and performance reporting to encourage energy conservation. Energy 101 online courses help stakeholders understand the basics of energy management and sustainability, and provide tools to assist them to reduce facility energy use. The City online Energy 101 'The Basics' course provides energy education to all City employees. The City energy management opportunity process is one way opportunities are identified and implemented at the City.

## Energy Profiling

Energy 101 course completion triggers access for learners to view energy profile information relating to City facilities and assets that consume utilities (power, gas, water). The tool allows online viewing of consumption, cost and the measured carbon footprint for City sites. As the program evolves, the City intends to provide mentorship and share elements of the City program to compliment Community programs and other municipalities in Alberta.

## Secondary Metering

This initiative compliments the City's training initiative to educate their workforce in theory and best practices of energy management. The sub-metering pilot project allows the City to leverage energy consumption information from mechanical equipment to inform on energy performance outcomes to a broader group of City stakeholders. The pilot project is part of the City's GHG reduction strategy. The goal is to allow the City to better meet energy management goals relating to utilities cost management, measured greenhouse gas impact; carbon footprint for leased properties and acquisitions and outcomes from changes in energy conservation behaviors.

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THIS PROGRAM IS INTENDED TO ENGAGE CITY EMPLOYEES AND STAKEHOLDERS IN ENERGY MANAGEMENT AND PERFORMANCE REPORTING TO ENCOURAGE ENERGY CONSERVATION.

# 2017 ACTIONS AND PRIORITIES UPDATES CONT'D

## CITY LEADERSHIP – TRANSFORMATIONAL INITIATIVES

### Blatchford

The purpose of this project is to transform 535 acres in the heart of Edmonton into one of the world’s largest sustainable communities. The neighbourhood will create an opportunity for 30,000 residents to live a unique and sustainable lifestyle.

Driven by City Council’s vision to create a community that significantly reduces its ecological footprint and empowers residents to pursue sustainable lifestyle choices, Blatchford is a leading-by-example opportunity to showcase Edmonton’s commitment to becoming an energy sustainable city. The community will incorporate

best practices for sustainable urban design including increasing density; prioritizing design that promotes walking, cycling or transit; creating a mix of housing, retail, commercial and public spaces; and incorporating significant park and green spaces.

After years of necessary planning, design, engineering and site preparation work, construction of the district energy sharing system began in 2017. The first stage will see approximately 250 units (townhomes and condos) built beginning in 2018.

THE PURPOSE OF THIS PROJECT IS TO TRANSFORM 535 ACRES IN THE HEART OF EDMONTON INTO ONE OF THE WORLD’S LARGEST SUSTAINABLE COMMUNITIES.



# 2017 ACTIONS AND PRIORITIES UPDATES CONT'D

## Edmonton Transit Service (ETS) Electric Buses

ETS is committed to electrifying the bus fleet over time. Electrification of transportation is highlighted in the Energy Transition Strategy and policy as being a priority goal with the potential to significantly contribute to greenhouse gas reductions, particularly as the Alberta electricity grid decarbonizes. City Council has directed Administration to purchase up to 40 e-buses, with funding available through the Public Transit Infrastructure Fund (PTIF). The first of these buses will be received in late 2018 and will be Edmonton roads in 2019.

The City of Edmonton’s Light Rail Transit (LRT) Network Plan, approved by City Council in 2009, has the goal of providing LRT to all sectors of the city by 2040. The plan also identified principles for new LRT lines and expanding current lines. Three of these principles are using urban-style LRT, encouraging Transit-Oriented Development (TOD) along LRT corridors, and as a result reducing greenhouse gas (GHG) emissions. Providing LRT to all sectors of the city, along with using urban-style LRT and TOD all support the vision of a more compact, transit-oriented and sustainable city, where more people walk, cycle and use transit. The Public Transit Infrastructure Fund from the federal government allowed five LRT projects to advance in 2017. These projects include Valley Line West LRT, Capital Line South LRT extension, Metro Line Northwest LRT extension, Centre LRT Study and Heritage Valley Park and Ride. As well, construction of Valley Line Southeast LRT, which began in 2016, continued with the expectation of opening to the public at the end of 2020.

CITY COUNCIL HAS APPROVED ADDITIONAL FUNDING TO FURTHER ADVANCE THE DESIGN OF THE DOWNTOWN DISTRICT ENERGY SYSTEM IN ORDER TO MAKE INFORMED DECISIONS ON THE POTENTIAL FUTURE CONSTRUCTION AND OPERATIONS OF THIS SYSTEM. ADDITIONAL WORK BEING CONDUCTED IN 2018 WILL ALSO INCLUDE FURTHER ASSESSMENT OF CITY BUILDINGS, IN THE AREA OF THE DISTRICT ENERGY SYSTEM, FOR POTENTIAL DEEP GREEN RETROFITS THAT WOULD COMPLIMENT A POSSIBLE DISTRICT ENERGY SYSTEM.

## Downtown District Energy System

In 2017, ENMAX developed a Design Basis Document that outlines the design, construction, and operation of a potential District Energy System (DES), which would provide cost-effective and environmentally responsible thermal energy to individual buildings in the downtown core. District Energy is highlighted in the Energy Transition strategy as an approach to decentralizing the energy system, building resilience as well as creating an opportunity to decrease carbon emissions at a building level. A DES can also be designed to accommodate combined heat and power which can further reduce carbon emissions by utilizing waste heat to produce on-site electricity. City Council has approved additional funding to further advance the design of this system in order to make informed decisions on the potential future construction and operations of this system. Additional work being conducted in 2018 will also include further assessment of City buildings, in the area of the District Energy system, for potential deep green retrofits that would compliment a possible district energy system.

# 2017 ACTIONS AND PRIORITIES UPDATES CONT'D

## COMMUNITY PROGRAMS AND ENABLING INITIATIVES

### EnerGuide for Homes Spot the Difference program

Launched in June 2017. This program combines the power of a home energy evaluation and rating (EnerGuide) with an online sharing platform that assists Edmontonians in understanding their home's energy performance in relation to other Edmonton homes. This voluntary program is available to both new builders and residents and assist in socialization energy labeling in the community prior to federal and provincial regulations being introduced.

### Building Energy Benchmarking Program

The 3 year pilot program was launched in June 2017 as well and will lay the foundation for Edmonton's transition to a low-carbon, sustainable energy future by making building energy performance information accessible to interested stakeholders - information that will be used to benchmark building energy performance, facilitate energy efficiency improvements and GHG reductions. The program is designed to encourage market transformation where energy efficiency is appropriately valued and seeks to engage Edmonton's large buildings in benchmarking their energy performance and sharing the results with the City. Like the residential labeling program, this voluntary program will assist the community in understanding the benefits and importance of energy benchmarking and transparency prior to any federal and provincial regulations being introduced.

### Electric Vehicle Curbside Charging Station Demonstration Project

Partnering with ATCO Electricity, the City of Edmonton is installing up to ten curbside charging stations in various areas of the City as part of a 5-year demonstration project. The project will provide Edmontonians and visitors to Edmonton with convenient, high quality electric vehicle charging opportunities in commercial and business districts and other high density areas. It will also signal electric vehicles as a viable option in Edmonton, while assisting the City in understanding elements of EV charging such as usage, pricing structures, and durability. The project was launched in 2017 with charging stations slated to be operational by Summer 2018.

### NISP Workshops

This workshop series is part of the National Industrial Symbiosis Program (NISP) Pilot project - a first in Canada! The NISP Model has been proven in 30 countries to deliver local and regional industrial symbiosis. Industrial symbiosis opportunities include business-to-business partnerships to transform wastes or by-products from one business into higher value inputs for other businesses, as well collaborations to maximize efficient use of logistics, space, or even R&D resources.

THE PROJECT WILL PROVIDE EDMONTONIANS AND VISITORS TO EDMONTON WITH CONVENIENT, HIGH QUALITY ELECTRIC VEHICLE CHARGING OPPORTUNITIES IN COMMERCIAL AND BUSINESS DISTRICTS AND OTHER HIGH DENSITY AREAS.

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# 2017 ACTIONS AND PRIORITIES UPDATES CONT'D

### Solar Permitting Streamlining

Amendments to Zoning Bylaw 12800 were approved by City Council and came into effect on April 10, 2017 to facilitate easier residential solar installations in Edmonton. To encourage the installation of rooftop solar collectors in low-density residential areas, several new changes were made, including:

- ▶ Roof mounted solar panels in low density residential areas no longer require a development permit, provided setback and height requirements are met.
- ▶ Clear guidelines around appropriate projections into setbacks and height limitations in all zones were added.
- ▶ Simplifying zoning regulations and in consideration of the likeness in size, appearance and use of "Solar-electrical (PV)" and "Solar Thermal" device definitions are consolidated under new 'Solar Collector' definition

### "Greener" Brownfield Grant

In 2017, Edmonton's very successful brownfield grant program was updated to incentivize even greener development. The brownfield grant provides funding for the assessment and remediation of contaminated properties in an effort to accelerate the redevelopment of these properties. In 2017, the LEED certification level required to receive up to 100% of the City approved remediation costs moved from silver to gold. All other eligible properties can qualify for up to 50% of the City approved remediation costs.

Many other projects and initiatives the City is undertaking have links to energy transition and climate change mitigation. For instance, the ongoing implementation of the Infill strategy, transit oriented development, light rail transit, promotion of active transportation, the build out of the bicycle lane network, and the commitment to setting high building standards in City led developments/programs such as Oxford or the First Place program. These initiatives are acknowledged as important contributors to climate change mitigation in Edmonton.

### INTERNATIONAL PANEL ON CLIMATE CHANGE CITIES AND CLIMATE CHANGE SCIENCE CONFERENCE

In 2017, the City of Edmonton was selected to host a unique international conference that will boost the scientific understanding of climate change and cities. This event, the Cities and Climate Change Science Conference, co-sponsored by the IPCC, took place in March 2018 to support the implementation of the Paris Agreement, the New Urban Agenda, and international Sustainable Development Goals. Among many other achievements, the conference was a place for global mayors to meet and assert their commitment to taking aggressive climate action. To affirm this commitment a directional document was produced, the Edmonton Declaration. Signatories of the Edmonton Declaration, of which the City of Edmonton, outlines the essential commitments Cities need to make to achieve the Paris Agreement, one of which is to understand the actions they are taking or plan to take in the context of keeping global average temperature increases to 1.5 degrees. This is expected to be further discussed with various cities over 2018.

# ENERGY TRANSITION ACTION PLAN REVIEW – OPPORTUNITIES & CHALLENGES

Implementation of the Energy Transition Eight Year Action Plan is a very complex undertaking. The Plan needs to be reviewed consistently and put in the context of the numerous emerging opportunities and issues, including participation by other levels of government, new science, improved technology, economic conditions and costs and benefits, as well as more comprehensive understanding of carbon accounting.

As such, in accordance with Policy C585, a review of the plan was initiated in late 2017 to ensure its continued relevance and afford the opportunity to adjust directions and make minor changes in response to that review. It should be noted that the review undertaken was a high level check-in with the intent for minor recalibration and not a holistic review of the strategy and action plan (which is scheduled for 2022). As part of this review, the original economic and carbon modelling done in 2014 is being updated to further evaluate the actions in the plan and their relative contribution to achieving carbon reduction targets.

The modelling exercise goes even further then it did in 2014 by developing a local carbon budget as an anchor for the scenario comparisons. Utilizing methodologies championed by C40.org, an international support organization for climate change action at the municipal level, a local carbon budget, consistent with the achievement of the Paris Agreement's goal of keeping global average temperatures to less than 1.5 degrees celsius, was developed for Edmonton. As the world continues to gain appreciation for the level of effort and scale of investment required to address the climate change challenge, these new approaches and methods for understanding local contributions to climate change are becoming more important. This is being completed in response to the Edmonton Declaration, introduced at the Intergovernmental Panel on Climate Change's first Cities and Climate Change Science conference, held in Edmonton in March 2018.

Using this updated modelling as a yardstick, combined with internal conversations and workshops with the Energy Transition Advisory Committee, the Energy Transition Eight Year Action Plan will be evaluated and adjusted in advance of the 2019 to 2022 budget, in an effort to inform City Council's decisions on possible future investments in low carbon initiatives.



# ENERGY TRANSITION ACTION PLAN REVIEW – OPPORTUNITIES & CHALLENGES CONT'D

## EMERGING OPPORTUNITIES AND CHALLENGES

*Emerging opportunities and challenges to be considered going forward in 2018 include:*

### Energy Efficiency Alberta and the Alberta Climate Leadership Plan.

*The 2017 year saw the launch of many programs through this new provincial agency such as:*

- ▶ direct, no-charge installation of low-cost energy efficiency products to Alberta residential properties
- ▶ point-of-sale rebates through participating retailers for the purchase of energy-efficiency appliances/ products,
- ▶ incentives to business, nonprofit and institutional energy users to encourage high-efficiency products, and
- ▶ funding to nonprofit and volunteer groups for a range of energy efficiency measures.

Many of Edmonton's programs and initiatives are designed to complement the provincial programs including the EnerGuide for Homes: Spot the Difference EnerGuide evaluation rebate that helps Edmontonians understand what home improvements make the most sense and therefore what provincial rebates to pursue and the Large Building Energy Reporting program that also assists building owners in prioritizing for the provincial commercial products incentive program.

### The Federal Pan-Canadian Framework on Clean Growth and Climate Change.

This framework includes four main pillars: pricing carbon pollution; complementary measures to further reduce emissions across the economy; measures to adapt to the impacts of climate change and build resilience; and actions to accelerate innovation, support clean technology, and create jobs.

Over 2017, the federal government assembled workgroups made up of provincial and territorial representatives. The City of Edmonton, given its leadership as a municipality, has had the opportunity to provide formal input into the roll out of key components of the Pan-Canadian Framework specifically, the workgroups assembled to promote Electric Vehicles and those relating to Building Energy Labelling. Three of Edmonton's programs, launched in 2017, including the EnerGuide for Homes initiative, the Large Building Energy Reporting program, and the electric vehicle curbside charging station pilot, directly align with with the Pan Canadian Framework.

### City Charter

*The Strategy* recommends a number of initiatives that require amendments to provincial legislation or the extension of new powers to the City through a City Charter. Of particular note is the foundational program of property-assessed clean energy financing programs (PACE); this financing mechanism assists citizens and businesses by providing on-property tax bill repayment of lot level improvements relating to energy efficiency and clean energy. As the City Charters are formally enacted and implemented in 2018 and some additional language is added to the Municipal Government Act (MGA), elements of an effective PACE program are expected to be enabled. Other potential opportunities arise with the addition of energy efficiency as an element that can be regulated through municipal bylaws. The draft charter regulations also outlined a requirement for the City to develop climate change mitigation and adaptation plans. The City will assess and advance its thinking and rationale on application of these new powers as the regulations are enacted.

# WE ARE SUR ING UP

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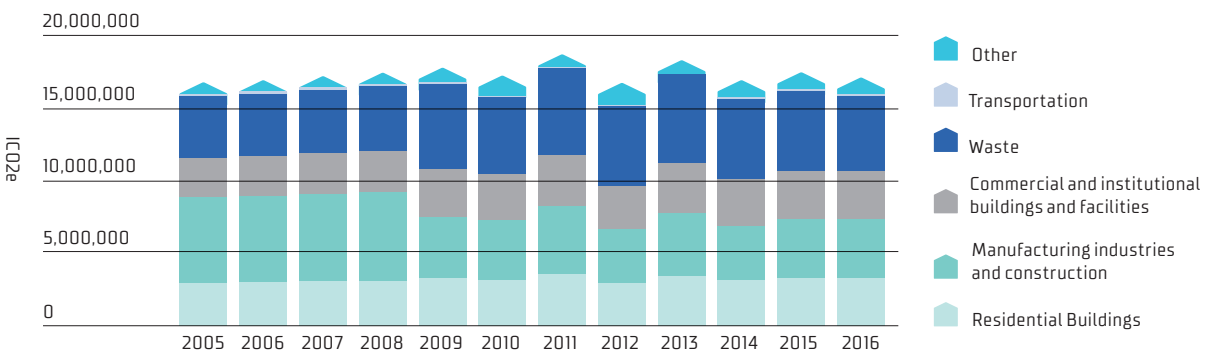
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## MEASURING UP

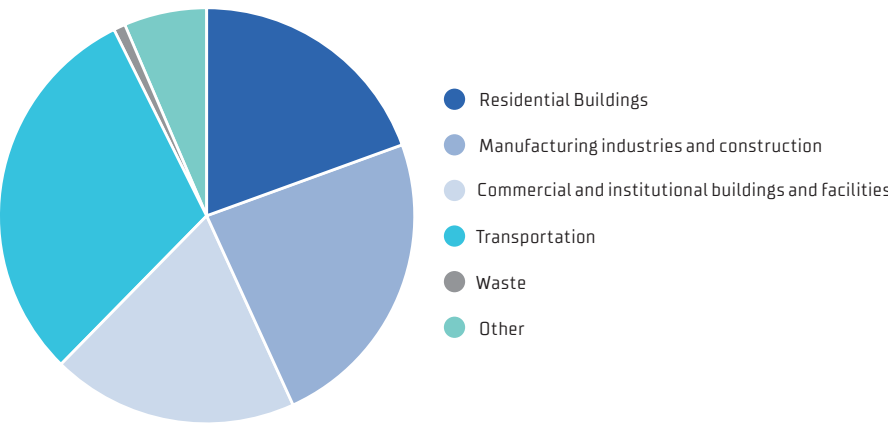
# MEASURING UP

Measuring, monitoring, and reporting program level success metrics as well as aggregated emissions reductions is an important tenet of the Community Energy Transition Strategy. Metrics provide a large-scale view of the total system as well as gauge the performance of individual programs. The City has been calculating Edmonton's community greenhouse gas emissions and its corporate emissions since the late 1990s. Recently, both of the protocols utilized were reviewed and the emissions inventories modernized to reflect changes in best practices. A snapshot of Edmonton's community emissions inventory is provided below:

Community Greenhouse Gas Emissions



Community GHG Emissions [tCO2e]



# MEASURING UP CONT'D

In 2016 (the last year available at the time of writing this report), Edmonton community emissions were calculated to be approximately 17.3 Million tonnes of carbon dioxide equivalent (the measure of convention for greenhouse gases). Compared to the 2015 reporting year, the community GHG emissions have decreased 370,080 tCO2e or 2.1%. The reductions seen in the last few years can be attributed to warmer than average winters reducing the use of natural gas combined with an economic slowdown. The reduced economic activity resulted in slightly reduced transportation fuel use and less development resulting in an increase contribution of carbon storage from ecosystems. Although emissions have stabilized in recent years, Edmonton emissions are still nearly 2% higher than the 2005 baseline and therefore well above the 2035 target of 35% reduction below 2005 levels.

On a per capita basis, the City of Edmonton's GHG emissions are approximately 19 tCO2 and on the higher range compared to other global cities. The World Bank published 'Representative GHG Baselines for Cities and their Respective Countries' showing that city per capita emissions will vary widely, from less than one tonne in developing countries, to over 20 tonnes for Sydney, Australia. It should be noted, however, that the data availability, and GHG estimation methods will vary greatly, hence why Edmonton has recently aligned its methodology with the *Global Protocol for Community Scale Greenhouse Gas Emissions (Basic Plus)*, the internationally accepted protocol for the evaluation and reporting of municipal emissions.

Variability in greenhouse gas emissions at the City level are associated with the local climate and how energy is created in the region in addition to any specific carbon reduction activities undertaken. For example, Vancouver, located on the West Coast, has a carbon footprint of 2.3 tCO2e/capita as it has access to hydro electricity which has a very small GHG grid intensity factor (0.01067 tCO2e/MWh). Vancouver is also located on the west coast

and is not subject to months of temperatures below 0 degrees centigrade – thus heating demands are typically lower when compared to a City in Alberta. Alberta has a much higher grid intensity factor (0.95 tCO2e/MWh) as electrical energy is predominantly generated by coal and natural gas. Compared to the City of Calgary's 2015 per capita emissions of 17.7 tCO2e, who prepared a BASIC GHG inventory, the City of Edmonton's 2016 BASIC level per capita emissions of 15.7 tCO2e/capita are comparable.

**EDMONTON HAS RECENTLY ALIGNED ITS METHODOLOGY WITH THE GLOBAL PROTOCOL FOR COMMUNITY SCALE GREENHOUSE GAS EMISSIONS (BASIC PLUS), THE INTERNATIONALLY ACCEPTED PROTOCOL FOR THE EVALUATION AND REPORTING OF MUNICIPAL EMISSIONS.**

MEASURING UP

MEASURING UP

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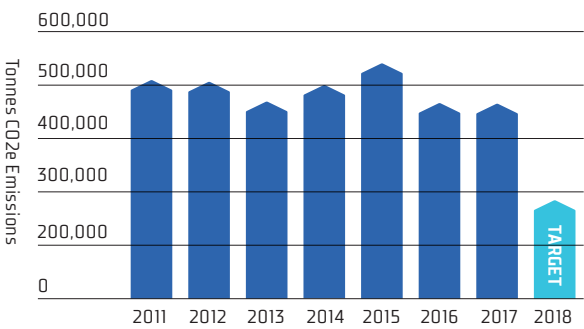
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MEASURING UP  
CONT'D

City of Edmonton Corporate Greenhouse Gas Emissions

City Corporate Greenhouse Gas Emissions measures the amount of greenhouse gas (GHG) emissions from City operations including City buildings and other facilities, streetlights, vehicle fleet, transit fleet, solid waste management, and fugitive GHG emissions from landfills. The measure also includes an estimate of the reduction in GHG emissions that is generated by trees which the City maintains and, beginning in 2013, the emissions saved by the City's purchase of green electricity. In 2017, the protocol that the City utilizes to measure and calculate its corporate greenhouse gases was changed to The Climate Registry (TCR) General Reporting Protocol (Version 2.1, January 2016) from the ICLEI (Local Governments for Sustainability) GHG reporting protocol. This was a necessary modernization to the City's accounting of greenhouse gases to better align with international community protocols for large municipalities allowing improved comparability with other cities. As a result, emissions relating to the City's public transit system were integrated into the corporate emissions profile where they were once left out. In addition, emissions relating to water and wastewater including drainage operations was removed from the total as the responsibility for these operations now fully resides with EPCOR (these are still reported and would be included in the overall community inventory for Edmonton but not captured in the aggregate amount reported here). When making any change to the accounting of greenhouse gases, prior period adjustments must be made back to the baseline year (in this case 2005); as such, the magnitude of emissions noted will differ from prior reporting of emissions. The absolute target has also been updated accordingly although the percentage decrease (42% below 2008 levels) remains the same. Data is collected from third party invoices, the urban tree inventory, landfill hauler summary reports for waste loads hauled to landfills by contractors, and the landfill waste degradation models.

City Corporate Greenhouse Gas Emissions



In 2017, the City's corporate GHG emissions totaled 529,223 tCO2e before the procurement of green electricity (31% of the total electricity used by the City of Edmonton), and the application of the GHG reduction from the urban forest, and 440,109 after incorporating the procurement of green electricity and applying the benefit of the urban forest.

**ACTIONS TAKEN BY THE CITY TO REDUCE THESE EMISSIONS PROVIDE A MEANS OF HIGHLIGHTING WHAT IS ACHIEVABLE AND VIABLE IN THE COMMUNITY, LEADING THE CREATION AND IMPLEMENTATION OF LOW CARBON INITIATIVES THAT CAN BE REPLICATED BY OTHER BUSINESSES AND ORGANIZATIONS.**

MEASURING UP

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MEASURING UP

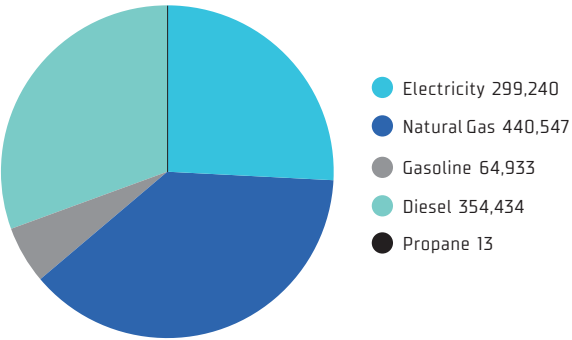
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MEASURING UP  
CONT'D

For the 2017 reporting year, approximately 51% of the City's corporate GHG emissions came from buildings and other facilities like recreation centers and pools, and waste management facilities; 26% came from transportation which includes corporate service vehicles as well as transit fleet; 13% came from the operation of streetlights and traffic signals; and, 10% came from the decomposition of waste at City operated landfills. Because more than 40% of Alberta's generation capacity is natural gas-fired and 60% is coal-fired, more than 54% of the City's corporate GHG emissions come from electricity use in buildings, and to power streetlights and transit vehicles (LRT). Diesel and gasoline used in the operation of fleet, equipment, and other transit vehicles accounted for 23% of the GHG inventory. Lastly, natural gas use to heat buildings contributed 17% to the total GHG inventory. Total energy use for the reporting year was over 4.1 million gigajoules (GJ) which was a 2.9% increase over the prior reporting year. Although the fuel used by the City is relatively balanced (1/3) between electricity, natural gas, and diesel, most of the GHG emissions (60%) result from electricity usage as the Alberta grid is largely fossil-fuel based. While the corporate energy split has remained relatively stable, energy usage has increased as the City continues to grow with buildings, fleet and waste management increasing energy use from 4-10% between 2016 and 2017.

Operational Energy Use Profile Total Energy [MWh]



Between 2005 and 2017, corporate GHG emissions have increased by almost 25%, while GHG emissions per resident of Edmonton have declined 6.3%. The increase in absolute GHG emissions is indicative of a city whose emissions are growing faster than the rate of reductions. The decline in per person GHG emissions is a result of the City's focus on reducing energy usage from operations. Based on its current trajectory, the City will not meet its GHG emissions reduction target as outlined in "The Way Ahead". The target will not be achieved due to the initial plan's underestimation of growth in civic accomodations and fleet combined with lower-than-forecasted procurement of green electricity as well as lower-than-anticipated funding levels.

**THE UPDATED PLAN WILL LEVERAGE ENERGY EFFICIENCY AND GHG REDUCTION OPPORTUNITIES IN THE FOLLOWING AREAS: BUILDING ENERGY RETROFITS, STREET LIGHTS, SOLAR/PV TIED TO CITY BUILDINGS, ELECTRIC BUSES, AND THROUGH GREEN ELECTRICITY PURCHASES.**

The City is currently developing a 2019-2030 corporate GHG management plan to address climate change through the reduction of corporate level energy consumption and GHG emissions. The GHG management plan is providing three scenarios for City Council's consideration – a 30% reduction below 2005 levels, a 50% reduction below 2005 levels, and a carbon neutral option. The updated plan will leverage energy efficiency and GHG reduction opportunities in the following areas: building energy retrofits, street lights, solar/PV tied to city buildings, electric busses, and through green electricity purchases.

# MEASURING UP CONT'D

*In addition to the system level view above, individual programs are tracking progress through the following metrics:*

### ENERGUIDE FOR HOMES: SPOT THE DIFFERENCE PROGRAM

The City of Edmonton successfully launched the Spot the Difference program in June 2017 at a media event with political and administrative speakers from the Federal and Municipal governments. The program consists of a \$400 rebate available to eligible residents to get an EnerGuide evaluation done for their home and to post their label on an online energy use disclosure map. Each home posted on the [map](#) is given a colour coded tag according to its energy usage in the following categories:

- Energy performance 0 to 29% less than the typical\* house
- Energy performance is > 30% better than the typical\* house
- Energy performance is >30% less than typical\* house
- Energy performance is 1 to 29% better than the typical\* house

New home builders also participate in the program. Many champion builders signed up before the official launch as they were excited to show the labels from their high performing homes. These homes have the builder's logo attached to their tag and it is being used as a marketing tool to show energy performance among new builders. To get more builders on the map the City issued a time limited incentive of \$200 per home for up to 10 homes for each builder as long as they committed to posting labels from all of their homes in 2018. There are now over nearly 20 builders signed up to share their homes on the site. Combined these builders represent about 50% of new homes built in Edmonton each year on average. This progress is an integral part of market transformation towards greater efficiency in the new home market.

As of the writing of this report, there are over 300 entries on the map. The City has put considerable effort into promoting the program to realtors and residents by attending 23 trade shows, community workshops, conference presentations, etc. and were able to directly reach 2500 residents. There has also been a corresponding advertising campaign for the program with social media posts and advertising, radio and print advertising. These ads will continue in 2018.

The program has benefited from strong relationships with the Edmonton Federation of Community Leagues, the Edmonton Real Estate Board, Energy Efficiency Alberta (Summerhill & Ecofitt), the Eco-Solar Home Tour and BuiltGreen which have all promoted the program to their networks.

### BUILDING ENERGY BENCHMARKING REPORTING PROGRAM

On June 5th Edmonton's Building Energy Benchmarking pilot program was launched in EPCOR Tower with speakers from City Council, BOMA Edmonton & Qualico Commercial (owners of EPCOR Tower).

*Year 1 Successes Include:*

- 83 buildings participated from 22 organizations covering 2,017,000 sq-m (21,702,000 sq-ft) gross floor area (7% of Edmonton's commercial gross floor area) including commercial, institutional & multi-family participants.
- Other than the City of Edmonton, the largest number of participating buildings was from the Government of Alberta (21 buildings), followed by Oxford Properties (City Centre Mall) and Triovest Realty Advisors (3 offices)
- 73% of participants consented to detailed disclosure, signaling increased comfort with disclosure of building-level energy benchmarking information. This information will be publicly available to interested stakeholders in the first annual Benchmarking Report.
- In order to walk the talk, 24 City of Edmonton properties (representing 39 buildings) participated in year 1. This represents 26% of our City-owned and operated building area.



MEASURING UP  
CONT'D

A Building Energy Benchmarking Report will be launched publicly in Q1 2018 and include a detailed summary of Year 1 participating buildings and their energy performance results. There are also almost 20 building showcases throughout the report celebrating specific buildings that have demonstrated excellent energy efficiency and operational innovation.

“RENEWABLE” VIDEO SERIES

Throughout 2017 six episodes of the Renewable Series were successfully produced and released on social media. Cumulatively the series received 929,877 combined views on Youtube and Facebook, and fostered 6,807 positive reactions online.

Social Media Numbers

Social Referral Traffic	Sessions	Users
Facebook	2,831	2,497
Twitter	366	299
LinkedIn	24	22
Instagram	14	13
YouTube	12	11
TOTAL	3,269	2,864

TV Impressions

Station	Spots	GRP	Audience Size
Global Edmonton	70	58.9	395,200
Rogers [CKEM]	188		233,700
Rogers [RSAN]	3		51,900

CHANGE FOR CLIMATE COMMUNITY  
ENGAGEMENT PROGRAM

The Change for Climate Engagement program was launched in November 2017 with a media event, an integrated advertising campaign, ongoing social media engagement and a sold-out “Change for Climate Talks” event. This five-year program is measured against four objectives:

- 1 **Build social norms** – Promote positive social norms and create a momentum around normative actions.
- 2 **Shape attitudes** – Build awareness and excitement about the need to address climate change and opportunities for the city.
- 3 **Motivate commitments** – Educate residents on how they can participate and encourage them to make commitments.
- 4 **Drive actions** – Get residents to follow through and take action to reduce energy consumption using conservation and efficiency.

To measure social norms and attitudes a pre-launch statistically valid baseline survey was done in June 2017 and will be repeated annually. Interviews with 506 Edmontontians reported that 73% are concerned about climate change and 66% agree efforts to prevent climate change present an economic opportunity.

Since the November launch, the program has seen the following results in terms of actions, commitments and engagement:

- 1,138,400 TV impressions (2.5 weeks of advertising)
- 1,364,074 impressions on Facebook and Twitter
- 129% increase in Facebook Page likes and a 22% increase in Twitter followers



MEASURING UP  
CONT'D

ELECTRIC VEHICLES

On the electric vehicle front, 2017 was an exciting year for Edmonton and Alberta. The number of electric vehicles in Edmonton rose to almost 300 while across Alberta there was as many battery electric vehicles sold in 2017 alone as in all of 2013, 2014 and 2015 combined. Coincident with this growth, the number of publicly accessible electric charging stations has also been increasing with high profile installations such as the Londonderry Mall Simons DC Fast Charger, the first to be installed in Alberta and tied into parking canopy solar array, and the installation of eight Tesla Superchargers at Southgate Centre, an Edmonton first.

ECOCITY EDMONTON

Projects are funded under two categories: Energy Transition (those projects that result in direct and immediately measurable emissions reductions) and Community Mobilization (those projects that build literacy and capacity to facilitate low carbon lifestyles and drive future carbon reductions). Regardless of the funding category, the ultimate intent of these projects is to showcase to the greater community the actions that can be taken to reduce greenhouse gas emissions, thereby increasing awareness and uptake of these actions across Edmonton. Examples of projects in the Energy Transition category include the installation of 35.5 kilowatts of solar photovoltaics, with an additional 42 kilowatts planned. The solar installations will reduce 1350 tonnes of greenhouse gas emissions over the lifetime of the equipment. Examples of projects that mobilize the community and drive community action include the recent grant funding of an Edmonton chapter of the Iron and Earth organization, a group dedicated to reskilling oil and gas workers to take advantage of the emerging renewable energy economy. EcoTrust Alberta has estimated that fifteen thousand people in Edmonton have been engaged by the projects to date.

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EDMONTON.

# LOOKING

# AHEAD

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# LOOKING AHEAD

LOOKING AHEAD

Implementation efforts will continue to accelerate in 2018 with the following critical initiatives being advanced:

PROPERTY ASSESSED CLEAN ENERGY

The purpose of this project is to conduct a feasibility study and develop a program design for property assessed clean energy programs (PACE) in Alberta. In 2017, the City Charter nodded to providing Edmonton with enabling powers to provide PACE like funding on properties. The language fell short of enabling a true PACE program; however, in collaboration with other levels of government, other municipalities, community partners, and the City of Calgary, the Government of Alberta has committed to take steps to to fully enabling PACE across Alberta. The City of Edmonton is collaborating on a program design in 2018, partially funded by the Federation of Canadian Municipalities, to develop the details of an Alberta PACE program as well as finalize a robust building case for a full roll out of this tool in subsequent years.

ACTION ON SOLAR

In 2018, advancement of the community solar action plan will continue with a focus on community based programming that complements provincial rebates and continued work on streamlining solar permitting (at the building/safety codes level). The following actions are planned:

- » **Solar Potential Map:** In Q1, 2018, the City will release a solar potential map. This engagement tool is an engaging way for residents and building owners to get an idea of the potential of their roofs to generate solar energy. The online map will link to any available rebates, how-to videos, and provide residents with information on the Solar Energy Society of Alberta, which in turn provides guidance on engaging a qualified contractor.

- » **Continue to enable solar through streamlined permitting:** In 2018, work will continue on establishing improved solar permitting at the building codes/safety codes processing level. A formal industry stakeholder consultation will be completed to inform the improvements.
- » **Evaluation of the Community Solar Action Plan:** Significant work has been undertaken over the years to understand the role solar has in energy transition including the Renewable Energy Task Force report, *Shaping Edmonton's Renewable Energy Future*, delivered to City Council in 2012. Since that time this report has been used to guide the actions taken around solar photovoltaics. With a goal to produce 10% of Edmonton's electricity within the City boundaries by 2035, put forward in the Community Energy Transition Strategy, a robust action plan is required. A review and revision of the community solar action plan will be conducted in 2018 to ensure it is aligned with the goals outlined in the Energy Transition Strategy.
- » **Solar Education:** The City has partnered with the Solar Energy Society of Alberta to hold two solar workshops an expected 50 participants. These workshops engage businesses in the potential of solar.



LOOKING AHEAD CONT'D

SMART TRANSPORTATION AND EV STRATEGY

In 2017, the City developed a draft Electric Vehicle Strategy. During this time, effort was initiated to understand the role of electrification within the context of a greater smart transportation action plan. To ensure these initiatives are aligned and complementary they have been combined in 2018. The project will focus on emerging transportation technologies for passenger vehicle transportation (personal, shared vehicles and public transit) in an urban setting. The intention is to deliver the fulsome strategy to City Council in Q4, 2018. The technologies include:

- » Automated vehicles
- » Connected vehicles (ability to communicate with other vehicles and transportation infrastructure)
- » Shared vehicles (vehicles shared between users and vehicles-for-hire)
- » Electric vehicles (fully battery electric or plug-in hybrid electric)

CHANGE FOR CLIMATE COMMUNITY ENGAGEMENT PROGRAM

This program is a five-year strategy to get residents to take action on climate change. Following the November 2017 launch, many elements are being planned, developed and released in 2018 including:

- » **Ongoing promotion and utilization of the Change4Climate.ca blog:** Residents will be encouraged to share their climate related stories, join the movement and interact with the spectrum of actions, while receiving messages about why and how to act on climate change.

- » **Change for Climate Talks Videos:** The talks from community leaders and influencers that took place during the Dec. 7 Change for Climate Talks event, will be turned into videos and shared via social media. This will allow many individuals that couldn't attend the talks to enjoy the presentations and help spread the messages.
- » **How to videos:** A series of videos and infographics that inform residents in an entertaining way about "how to" actually do the actions needed to reduce greenhouse gas emissions, will be made available to residents. Explanations range from how to weatherproof a home to how to get solar pv installed at home.
- » **Renewable Series:** Continuing with the successful approach and style of Season One, Season Two of this blog and video series will feature the outstanding energy transition initiatives taking place in Edmonton.
- » **Comprehensive outreach program:** An annual program to meet with residents at various events and inform them of the Change for Climate actions as well as other relevant programs such as the EnerGuide program. Are approximately 30 individual events is being planned.
- » **Alignment with Cities & Climate Change Science Conference:** The City is developing several events parallel to this exclusive conference to ensure that Edmontonians have an opportunity to participate and learn about climate change.

LOOKING  
AHEAD CONT'D

LIGHT EFFICIENT POLICY

Work was initiated in late 2017 to develop light-efficient community guidelines and policies as per Tactic 4.7.9d in the Community Energy Transition Strategy. This project is an extension of policy C576 Light Efficient Community Policy approved by City Council in 2013 that applies to City-owned buildings and development. The goals of this Project are to expand the policy to provide enabling direction on community developments:

- 1 identify the types of urban light sources that have a negative environmental impact and the types of environmental impacts;
- 2 identify best practice strategies and mitigating actions to reduce the negative impacts of urban light on the environment, and
- 3 develop community light-efficient guidelines including a citizen guide and supporting policy recommendations. The intent is for these documents to be ready in late 2018.

IMPLEMENTATION OF EDMONTON'S CORPORATE GREENHOUSE GAS MANAGEMENT PLAN

The purpose of this plan is to propose a comprehensive action plan for reducing greenhouse gas (GHG) emissions from The City of Edmonton's corporate operations; contributing to Edmonton's long-term goal of carbon-neutrality. The plan outlines the targets to be achieved over the next 12 years and beyond. In 2018, near term actions will be pursued and the foundations built for longer term actions based on a corporate GHG reduction target supported by City Council. As well, evaluation of the options available to obtain green electricity in the local market will be explored for implementation within the 2019 to 2022 operating budget.

IMPLEMENTATION OF C532 – SUSTAINABLE BUILDING POLICY

The City's Policy C532 requires that new City building construction and major renovations meet and attain LEED Silver certification, achieve a minimum 40% or greater energy efficiency and greenhouse gas reduction than the National Energy Code of Canada for Buildings (NECB) 2011, and that 1% of the total capital project budget of new construction will be dedicated to the incorporation of on-site renewable and or alternative energy generation systems.

In 2018 the City of Edmonton will register for BOMA Canada's Portfolio Program and work on the BOMA BEST Certification and Recertification of several City-owned facilities. In addition, strategy and resource planning for implementation on BOMA BEST certification for all eligible buildings will be developed.

ENABLING GREEN BUILDING THROUGH BYLAW AND PROCESS IMPROVEMENTS

The Energy Transition Strategy has identified a need to investigate the barriers and gaps between Edmonton's policies, bylaws, development regulations, and approval processes with respect to the achievement of low carbon goals. To bridge this gap a comprehensive Sustainable Development Framework is proposed to be developed in order to apply sustainable principles to all stages of development. It is critical that the goals of energy transition are embedded in policies, bylaws, area structure plans (ASPs) and neighbourhood structure plans (NSPs), and supporting design guidelines to ensure the advancement towards a low carbon future. This work is being initiated in early 2018 by the Development Services branch in a collaborative effort between many City departments.



LOOKING  
AHEAD CONT'D

UNDERSTANDING THE LOW CARBON ECONOMY AND EDMONTON'S ASSETS AND OPPORTUNITIES

Economic and Environmental Sustainability is undertaking the research and analysis to better understand the size and scope of the green energy economy in the Edmonton region and develop recommendations for an action plan designed to support the needs of local businesses, grow key components of the value chain, and attract new investment and talent. Secondary research for the research being undertaken includes undertaking a broad sweep of relevant reports and articles; a review of major industry trends and growth opportunities; a policy analysis on evolving federal, provincial, and regional priorities; and a review of comparative cities and best practice programs. Sector profiling work will also include data collection and analysis of statistical sources to estimate green energy sector employment and gross domestic product (GDP); compiling lists of relevant companies, projects, investments, and research activities; and performing a value chain assessment of existing strengths, weaknesses, and gaps. This work will be completed in 2018.

LOW CARBON INNOVATION CENTRE

Guided by the longstanding work of the Toronto Atmospheric Fund, Edmonton and five other Canadian cities have joined together to incubate the creation of Low Carbon Innovation Centres across Canada based on the Atmospheric Fund model. The group is working on a joint funding application to NRCan worth \$150M.

The premise of the Innovation Centre concept is there is no shortage of great ideas for how to reduce urban emissions, but all too often there is something missing between opportunity and deployment at scale; this holds for technological advancements, policies, programs, financing, etc. The LCIC theory of change is to use the multiple stages of the innovation process to fill in the blanks including:

- 1 Developing ideas and concepts;
- 2 Demonstrating, refining and de-risking opportunities through real-time implementation and collaboration
- 3 Paving the path to mainstream implementation, including by demonstrating the business case (feasibility, benefits); advancing the policy and practical requirements for implementation, including financing; and generating buy-in and acceptance for adoption.

If successful, Edmonton and its' partner, Alberta Ecotrust, will receive an initial investment of \$20M to create an endowment which will be used to fund and finance low carbon innovation projects. Initial areas of focus are energy efficiency retrofits, community renewable energy and electric vehicles.

LOOKING  
AHEAD CONT'D

CONTINUE TO BUILD COMMUNITY SUPPORT  
AND MAINTAIN STRONG GOVERNANCE

Through the Energy Transition Advisory Committee, programs, initiatives and policy directions will be vetted. As well, the ongoing support of the Energy Transition Leadership network will continue to provide a forum to incubate ideas to support a low carbon future. The introduction of the Corporate Climate Leaders club will provide an avenue to champion leading Edmonton organizations and provide a support system for other organizations that are just starting on their low carbon journey.

TOOLS FOR RESIDENTS TO  
UNDERSTAND THEIR ENERGY USE

The Energy Transition Strategy recommends implementing various tools that will increase the energy literacy of Edmontonians and inform them better about their own energy use. Work continues on a community energy information platform; however, recent information has suggested that this will require more effort and investment than originally anticipated. To somewhat satisfy the objective while a more robust business case is developed, the City will be launching, a simple tool where residents who live in single family homes can compare their electricity use with their neighbours. This online map provides an interactive way for residents to input their annual electricity use and instantly compare to the average use in their neighbourhood and the average of the overall City. Making these comparisons helps residents to engage in conversations about energy and its use in the home. Future iterations of the tool are being planned to show greenhouse gases and eventually show average space heating as well.

MEASUREMENT AND REPORTING

The work initiated in 2017 on understanding Edmonton's carbon budget will continue with the application of tools provided by C40.org as well as the pursuit of nation leading greenhouse gas measurement approaches such as the development of a consumption based inventory.

ONGOING IMPLEMENTATION  
OF PROGRAMS AND INITIATIVES

The EnerGuide for Homes and Large Building Energy Reporting programs will continue to be implemented and adjusted to increase participation. Both of these programs are setting the stage for the upcoming regulations around building label that have been signaled in the Pan Canadian framework. Other successful programs such as the EcoCity community grant and the Edmonton Federation of Community Leagues Green Leagues program will continue.

CORPORATE CLIMATE LEADERS PROGRAM

Edmonton's Corporate Climate Leaders Program supports the growing number of Edmonton organizations that are concerned about climate change and want to take action. Members will make a commitment to take action on climate change through active GHG management across their operations. In addition to supporting members in the implementation of their GHG management practices, the City of Edmonton is working with Climate Smart Businesses to help build capacity for lasting change within member organizations. The program will facilitate members sharing best practices and lessons learned, exploring emerging business opportunities related to the low carbon economy, mentoring newcomers and celebrating success – which will be communicated community-wide, inspiring all Edmontonians to take climate action. In year 1, it is expected that 15-20 founding members will join who will serve as leaders in future years, in addition to 25-50 other organizations will sign up for the program.



EDMONTON'S  
CORPORATE  
CLIMATE LEADERS  
PROGRAM  
SUPPORTS THE  
GROWING NUMBER  
OF EDMONTON  
ORGANIZATIONS  
THAT ARE  
CONCERNED ABOUT  
CLIMATE CHANGE  
AND WANT TO  
TAKE ACTION.



For more information please visit: [changeforclimate.ca](https://changeforclimate.ca) or call 311

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