

ENERGY & EMISSIONS IN BRAMPTON

OUR COMMUNITY SPENDS

\$1.8 BILLION

ON ENERGY EACH YEAR...

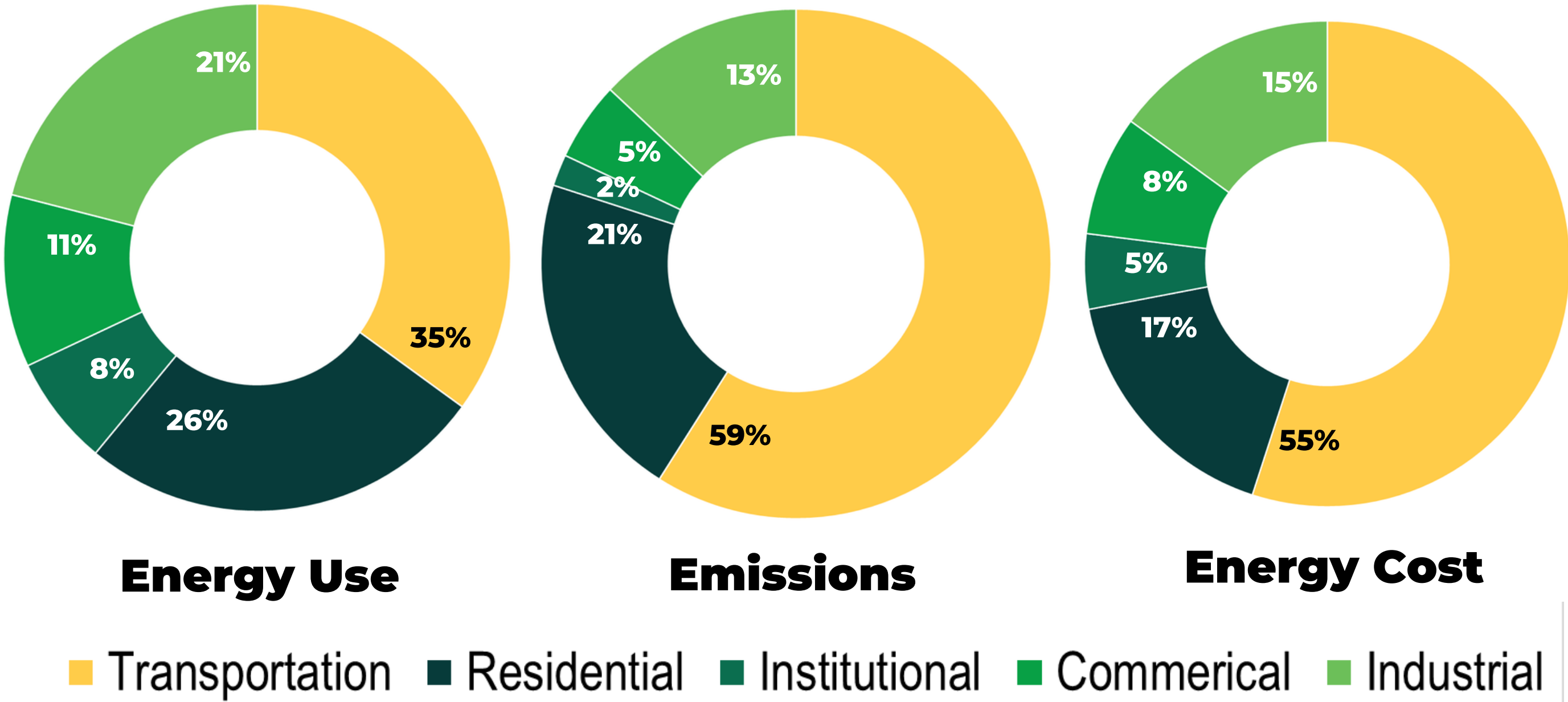


\$1.4 BILLION

OF THOSE ENERGY DOLLARS LEAVE THE COMMUNITY.

TRANSPORTATION ACCOUNTS FOR OVER 50% OF ALL ENERGY COST AND EMISSIONS IN BRAMPTON. RESIDENTIAL BUILDINGS ARE OUR 2ND BIGGEST EMITTER AND COST.

Brampton's Energy Use, Energy Cost, and Emissions by Sector in 2016 (%)



CLIMATE MITIGATION IN BRAMPTON

JUNE 5, 2019

Brampton City Council unanimously votes to declare a climate emergency.

FEBRUARY 5, 2020

City Council endorses the Brampton Eco Park Strategy for the enhancement of the city's natural heritage system and city parks to create better places to socialize and interact with the environment.

FEBRUARY 19, 2020

City Council endorses the One Million Trees program, which aims to plant one million trees in Brampton by 2040 to meet the goals in the Brampton 2040 Vision.

AUGUST 29, 2019

The City of Brampton releases its corporate energy and emissions plan, called "A Zero Carbon Transition", which sets energy use and emissions targets for City facilities.

NOVEMBER 13, 2019

The City of Brampton joins the Global Covenant of Mayors for Climate & Energy, an international coalition of city and local governments that share a goal of pursuing action to combat climate change.

ONGOING

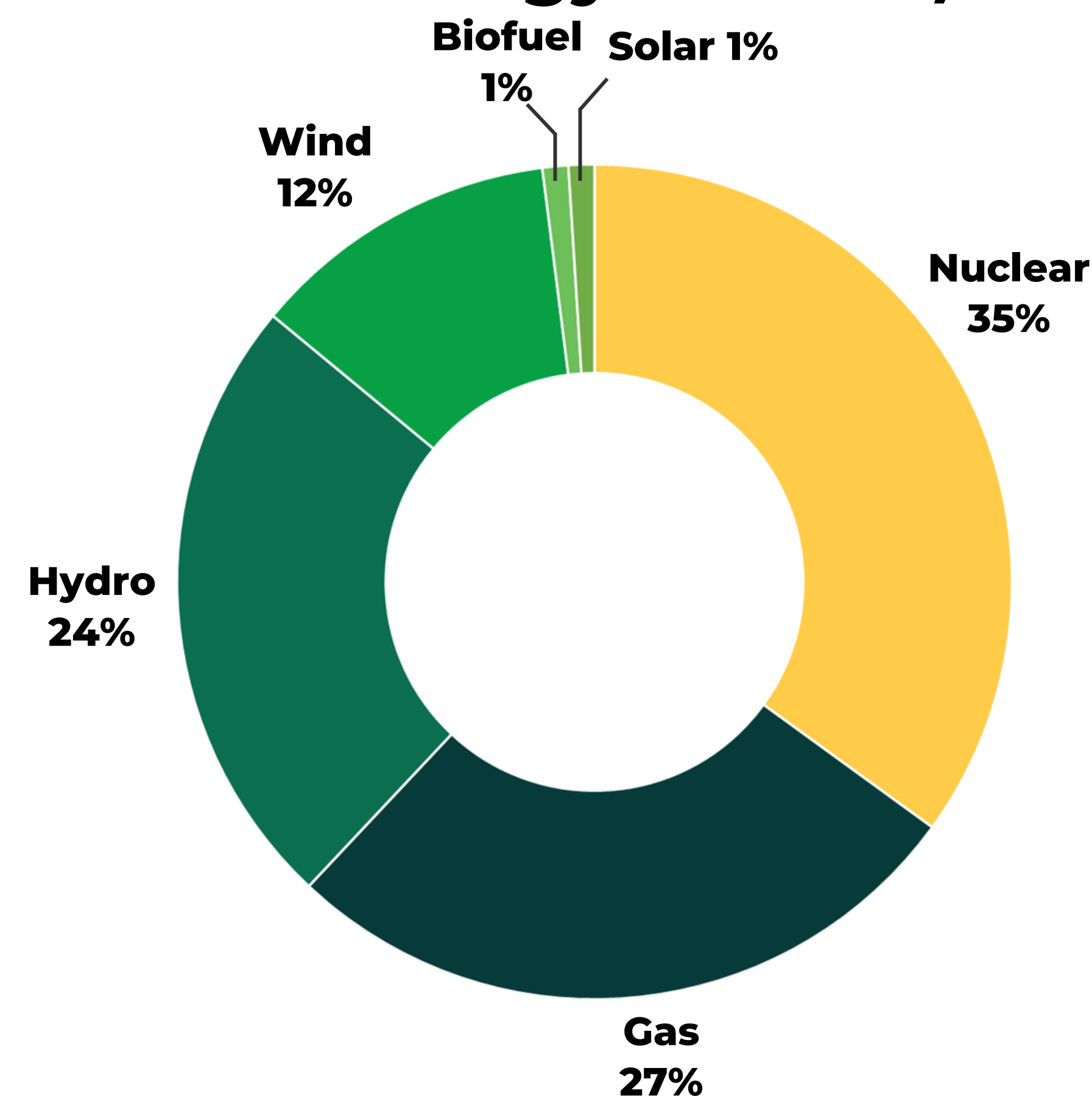
In partnership with Sheridan College and the Region of Peel, the City of Brampton is exploring the creation of an organization that will focus on convening partners to ensure that stakeholders work together to achieve CEERP goals.

WHERE DOES OUR ENERGY COME FROM?

ENERGY SOURCES IN ONTARIO

- Canada relies on fossil fuels to meet 80% of its energy needs
- This has significantly increased greenhouse gas emissions associated with our energy system
- In 2019, Ontario's electricity mix was 35% nuclear, 27% natural gas, 24% hydro, 12% wind, 1% solar, and 1% biofuel
- Until the 1950s, Ontario's electricity system was almost 100 percent renewable hydroelectric power
- Most of our natural gas comes from outside the province and has been delivered by interprovincial pipelines since 1958
- Gasoline and diesel are mostly sourced from crude oil, almost all of which comes from outside Ontario (exported from western Canada, the Atlantic offshore, and the US)

Ontario Energy Sources, 2019

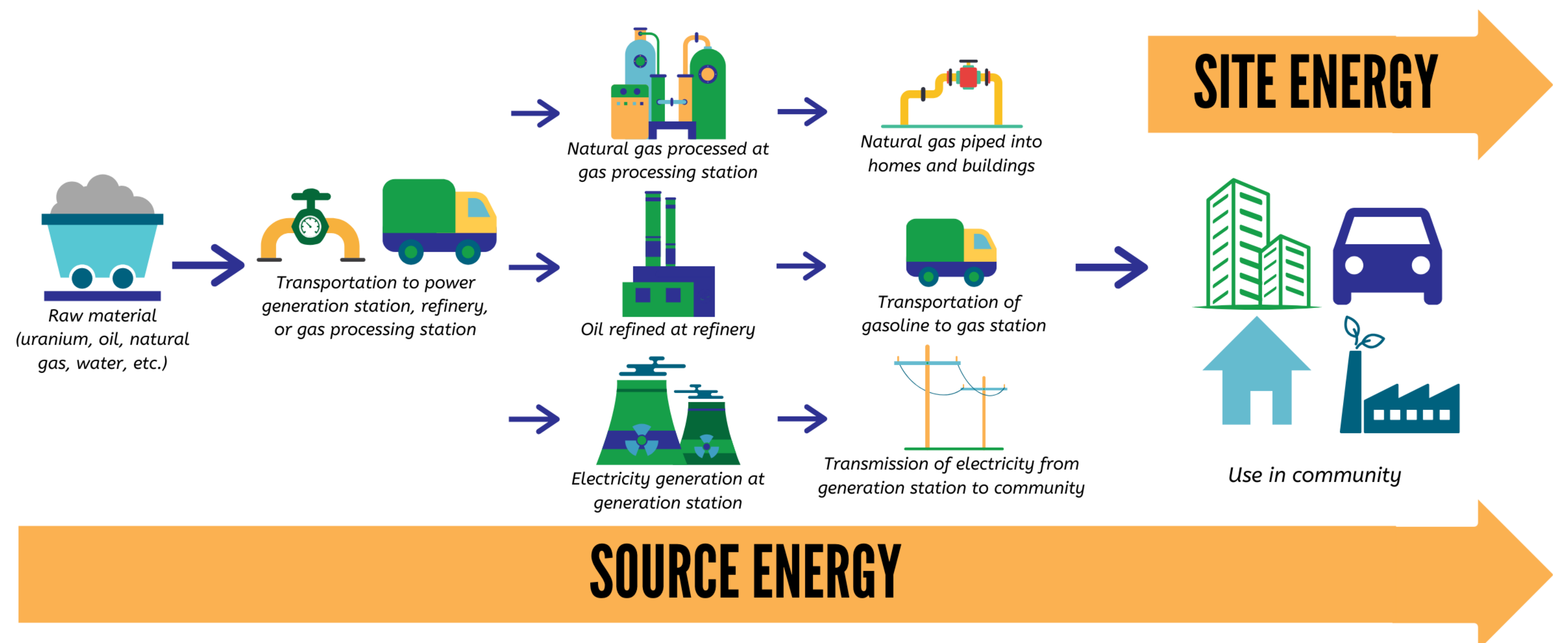


WHAT ARE SYSTEM LOSSES?

- The introduction of non-renewable energy sources (i.e., fossil fuel and nuclear) to meet increasing energy demands has had two effects:
 - the creation of waste by products (i.e., the release of carbon dioxide into the atmosphere)
 - increased system losses
- System losses: occur when energy is transformed from one form to another and when energy is moved from one location to another
- System losses account for approximately 30% of all source energy use and reduce the efficiency of the system

HOW DOES ENERGY GET TO US?

- Site energy: energy purchased by consumers at the utility meter or gas pump
- Source energy: energy purchased at the utility meter or gas pump and all the energy required in production and distribution to consumers.



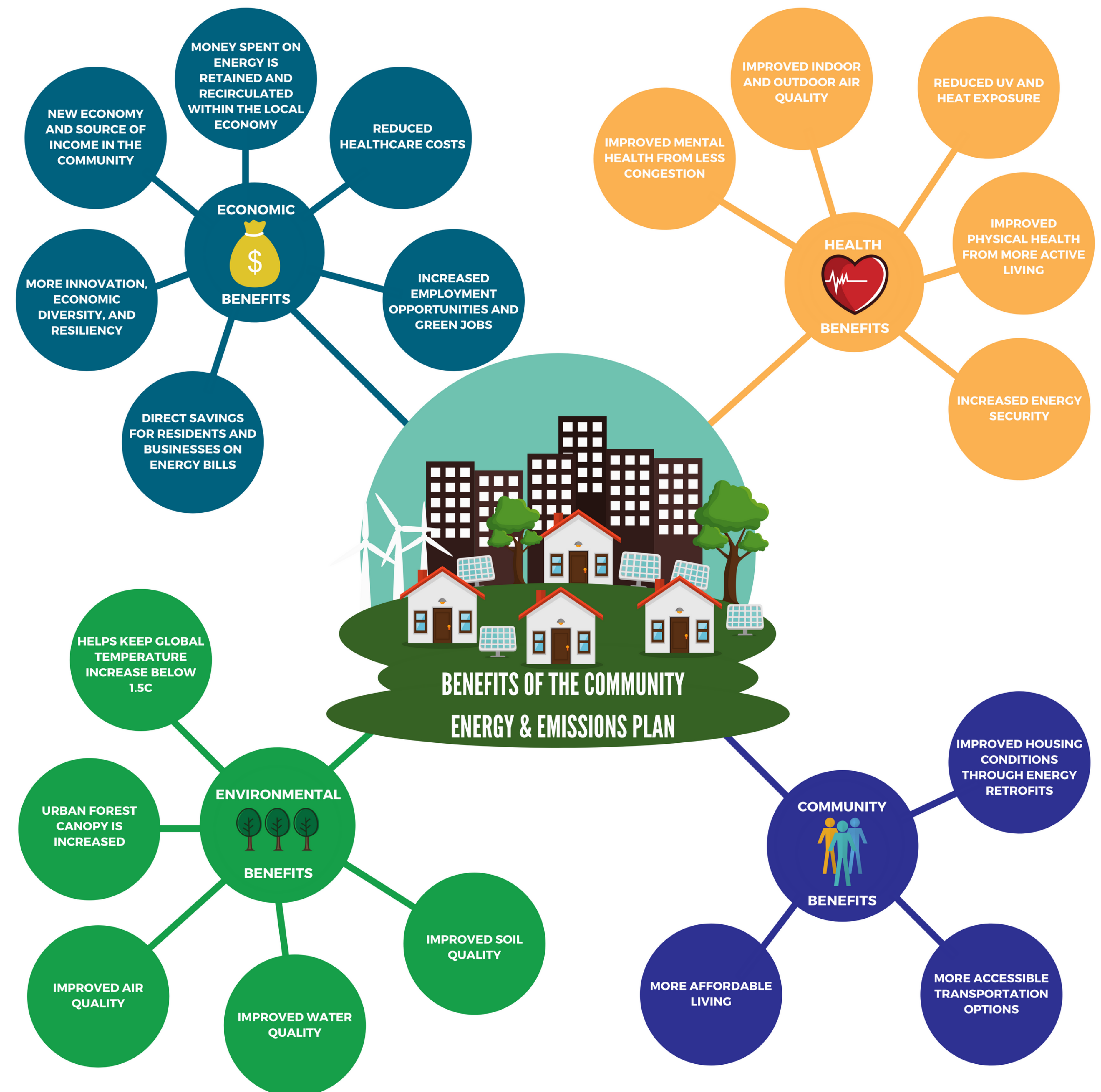
WHAT IS THE CEERP?

BRAMPTON'S COMMUNITY ENERGY AND EMISSIONS REDUCTION PLAN

The Plan takes a local lens to focus on community wide priorities and actions to reduce GHG emissions, increase energy efficiency, ensure energy security, create economic advantage, and increase Brampton's resilience to climate change.

WHY HAVE A CEERP?

- Human influences are changing the Earth, which is causing increases in average global temperatures
- In Brampton, the impacts of climate change have been felt through extreme heat events, flooding, heavy rainfall and ice storms
- These events have significant impacts for our health, infrastructure, environment, and economy, and are expected to continue and to increase in the future
- Another consideration is ensuring Brampton is positioned to manage the risks and capitalize on the opportunities associated with the modern energy transition
- The CEERP is a opportunity for Brampton to become a leader and tap into the the economic and social potential of this energy evolution.



BRAMPTON'S ENERGY FUTURE IS CLEAN, SUSTAINABLE, AND RESILIENT, AND SUPPORTS THE BRAMPTON 2040 VISION

GOALS

ENERGY

Reduce energy use by 50% from 2016 levels by 2041

EMISSIONS

Reduce emissions by 50% from 2016 levels by 2041, and to establish a pathway to reduce emissions by 80% by 2050

ECONOMIC

Retain at least \$26 billion in cumulative energy costs to the community by 2041.

GUIDING PRINCIPLES

ENVIRONMENTAL

Work towards climate neutrality

ENERGY

Benchmark energy performance against global best practice

ECONOMIC

All energy-related investments will meet risk-adjusted returns, energy costs will be competitive, and local employment will be generated

RELIABILITY

Energy systems will meet challenges of changing user expectations, climate uncertainty, and new technology

STRATEGIC DIRECTIONS

LOCAL ENERGY & SUPPLY
DISTRIBUTION

INDUSTRIAL
EFFICIENCY

TRANSPORTATION
EFFICIENCY

GREEN
COMMUNITIES

HOME & BUILDING
EFFICIENCY

GREEN
INFRASTRUCTURE

HOW WILL WE ACHIEVE THESE GOALS?

OBJECTIVES AND 2041 TARGETS

Twenty-five objectives with targets to achieve by 2041

Example:
OBJECTIVE - Increase efficiency of existing homes
2041 TARGET - Achieve a 35% residential sector efficiency gain from 2016 by retrofitting 80% of existing homes

2020-2025 PRIORITY PROJECTS

Six priority projects to be completed by the City and other partners

Example:
Investigate the establishment of a home energy efficient retrofit company to offer standardized energy efficient retrofits and other energy technologies (e.g., solar hot water) to homes and other buildings.

ENERGY, EMISSIONS, AND YOU

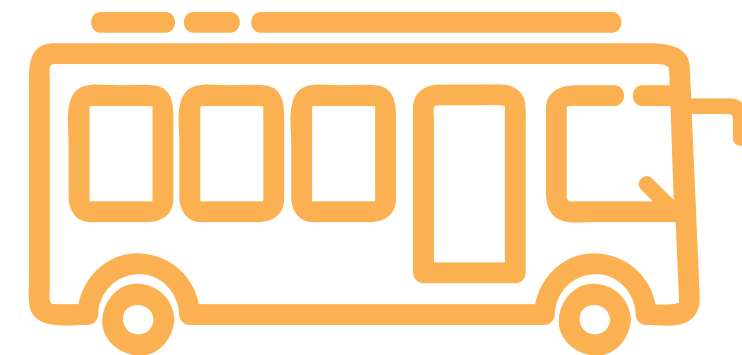
HOW DO YOU GET TO WORK/SCHOOL?



Walking



Cycling



Transit



Carpooling



Driving



Other?

HOW DO YOU REDUCE YOUR HOME ENERGY BILL AND CONSERVE ENERGY?

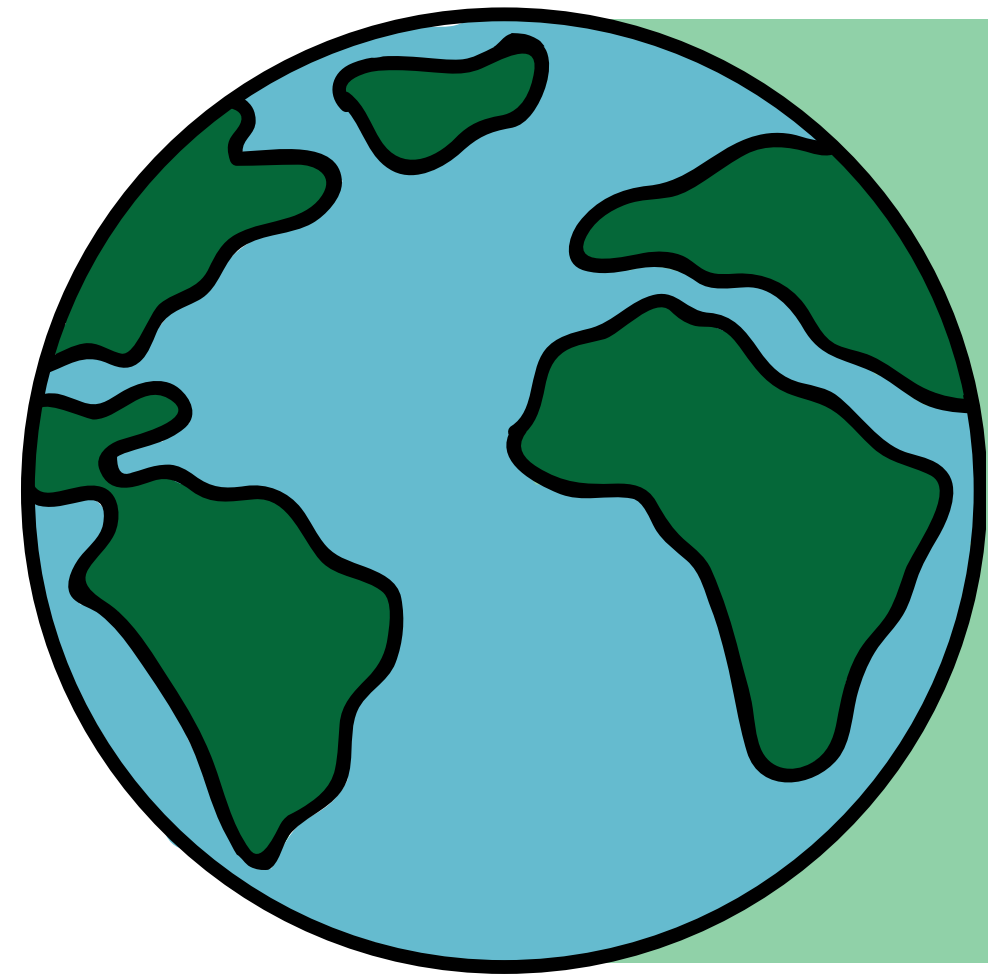
Some example actions you might already do:

- installed LED lightbulbs
- use a hot water tank insulation jacket
- hang clothes to dry instead of using a clothes dryer
- always turn off and unplug devices when not in use
- keep house temperature to 21 or below in the winter and 25 and above in the summer



Looking for more ways to reduce your energy bill and conserve energy? Visit SaveOnEnergy.ca

EVERYBODY CAN CONTRIBUTE!



Climate change is not an individual problem and does not have individual solutions - it requires collective action. This means that the CEERP needs to be a community plan - everybody needs to contribute to reducing their impact on the planet.

DEVELOPERS

- Design communities to facilitate future distributed energy systems, achieve sustainable transportation targets, expand tree canopy cover, and improve building energy efficiency
- Promote local employment opportunities in new communities and support retention of local employment in existing communities

RESIDENTS - AT HOME

- Change your habits and actions to reduce your energy use and emissions (e.g. walk or take transit for some trips instead of a car)
- Retrofit your home to be more energy efficient
- Advocate to your municipal, provincial, and federal representatives to take action to reduce energy use and emissions

RESIDENTS - AT WORK/SCHOOL

- Carpool, take transit, bike, or walk to work or school
- Set up a carpool group or walking bus to make eco-friendly transit more social
- Advocate for your workplace or school to adopt more energy-efficient and emissions-reducing practices
- Investigate energy efficiency retrofit opportunities

MUNICIPALITIES

- Complete the Official Plan update to implement the CEERP
- Implement network improvements and undertake planning to increase transit service in Brampton and prioritize it as the preferred mode for travel in the City's Transportation Master Plan
- Develop a mechanism to value green infrastructure assets and their benefits

BUSINESSES

- Share knowledge and best practices for energy and emissions planning
- Move toward a circular economy
- Offer more environmentally-friendly goods and services to customers
- Promote environmentally-friendly practices in the workplace, such as telecommuting

COMMUNITY ORGANIZATIONS

- Develop partnerships, advocate for changes, and find new resources to advance sustainability goals
- Plan, coordinate, and deliver energy use and emissions reduction projects that link with CEERP priority projects
- Identify, track, and report on energy use and emissions reduction indicators

COMMENTS

WHAT MATTERS MOST TO YOU?

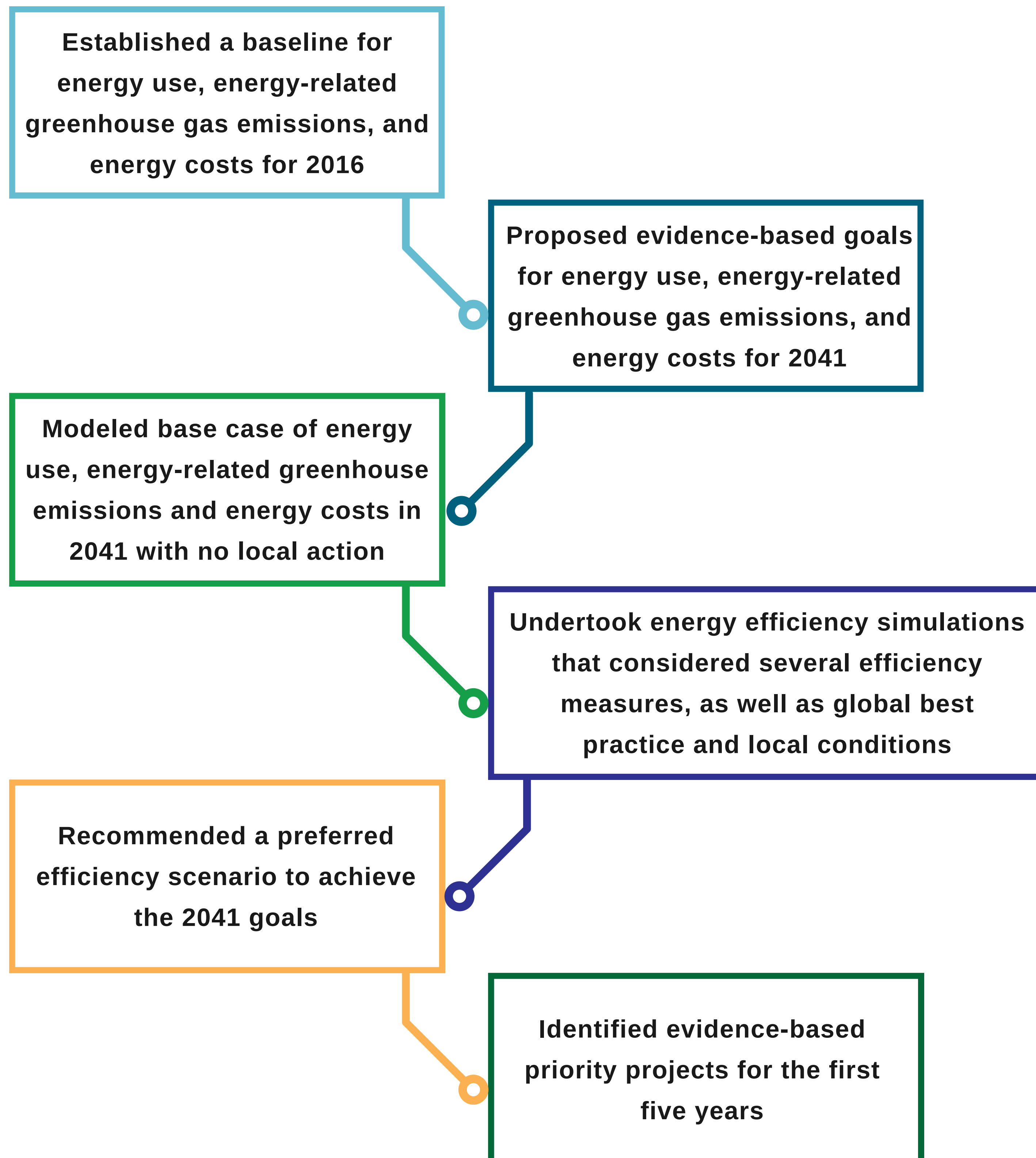
For example...

- *building retrofit programs*
- *better transit*
- *business initiatives*
- *improved trail network*
- *mixed use communities*
- *green infrastructure (i.e. constructed wetlands for stormwater management)*
- *community gardens*
- *etc...*

WHAT DO YOU NEED TO REACH YOUR OWN ENERGY AND EMISSIONS GOALS?

WANT TO LEARN MORE?

CEERP PLANNING PROCESS



Interested in learning more about environmental initiatives in Brampton and staying updated on the CEERP?

Join the Brampton Grow Green Network at:

<http://tiny.cc/GrowGreen>