Clean Energy Opportunities
for Alberta municipalities

Clean energy opportunities are a win for Alberta's municipalities: they create jobs, attract investment and increase quality of life for residents.

This primer was created to guide Alberta municipalities of all sizes toward practical and effective measures that take advantage of clean energy opportunities across the transportation, buildings, and electricity sectors to diversify their economies.

With operations covering almost every aspect of their residents' lives, municipalities are in a strong position to lead the shift to clean energy.

The opportunities described here have multiple benefits: cost savings, economic development, increased livability, and pollution reduction. None of these measures are silver bullets in and of themselves, but the benefits multiply when opportunities are implemented together.

Clean energy benefits

- Cost savings
- Increased livability
- Economic development
- Improved air quality and health

Clean energy opportunities

Electricity

- Municipally-owned renewable energy projects
- Municipal solar rebates
- Smart LED street lights
- Property-Assessed Clean Energy (PACE) financing

Transportation

- EV charger ready building bylaw
- Decarbonizing urban freight
- Electrifying municipal fleet
- Transit-oriented development

Buildings

- Demonstrate and incentivize deep energy retrofits
- Require energy upgrades at sale
- Net-zero building targets and strategies

Electricity

Municipalities can take steps to stabilize electricity bills for both themselves and residents through affordable renewable energy, which also attracts new businesses, technology providers and associated jobs. Larger renewable energy projects can bring additional opportunities for increased municipal revenues and investments in community economic development.

Learn more about the local benefits of wind energy in this joint discussion paper:

Wind energy in Alberta: Sustainable Communities, Sustainable environment
www.pembina.org/reports/ab-wind-workshop-local-economies.pdf

Learn more about the attractive economics of clean energy portfolios in Alberta, in our study comparing renewable energy and natural gas for electricity generation:

Reliable, affordable: The economic case for scaling up clean energy portfolios
www.pembina.org/pub/reliable-affordable-economic-case-scaling-clean-energy-portfolios
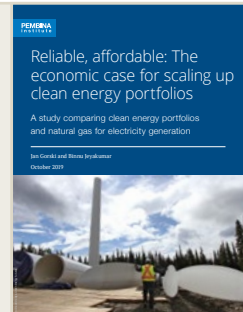
Municipally-owned renewable projects

Municipal governments can directly participate in locally produced renewable energy by entering into partnerships with developers on large projects or on smaller community-scale projects.

Learn how Raymond became the first Alberta town to power 100 per cent of its operations with solar:

A case study from the Municipal Climate Change Action Centre
mccac.ca/app/uploads/Case-Study-Raymond.pdf
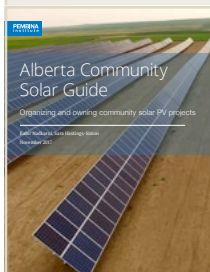
For examples of different collaboration models, see our guide:

Alberta Community Solar Guide: Organizing and owning community solar PV projects
www.pembina.org/pub/alberta-community-solar-guide

Municipal solar rebates

Municipalities can raise awareness about renewable energy and support local adoption by offering residential solar rebates along with educational programs.

Learn more about Canmore's successful *Solar Incentive Program* in this New Energy Economy story:

Bringing renewable energy to Alberta's Bow Valley
newenergyeconomy.ca/our-stories-1/2019/3/27/canmore-solar-initiative

Smart LED street lights

Street lighting can be a significant expense for municipalities. Switching to energy-efficient LEDs combined with "smart" features (e.g. automatic dimming outside of peak hours) can dramatically reduce these costs.

Learn more about how implementing smart street lighting:

GSMA Smart Cities Guide – Street Lighting: How mobile operators can help cities manage and control their streetlights and use them to provide new smart city services
www.gsma.com/iot/wp-content/uploads/2017/03/Smart-Street-Lighting-Case-study-webv1.pdf

PACE financing

Municipalities can offer low-interest loans for clean energy projects and energy efficiency measures, to be repaid through property taxes. Loans granted through Property Assessed Clean Energy (PACE) programs are tied to the property rather than the person, making this an attractive option for owners concerned about what happens when they sell.

To learn more about how to implement a PACE program, try our webinar on solar financing:

Financing Solar Energy
https://www.pembina.org/event/financing-solar-energy

Or check out **PACE Canada's Alberta region website**:
https://paceab.ca

Transportation

Moving goods and passengers is the backbone of our local economies. Municipalities across Alberta have a great opportunity to strengthen their economic development potential by reducing fuel consumption, improving local goods movement efficiency, and reducing traffic.

EV charger-ready building bylaw

Municipalities can update their bylaws to ensure that any new building has the minimum electrical infrastructure to sustain the future installation of EV Level 2 chargers, making it easier for residents to choose electric vehicles (EVs) as an alternative.

For comparison, take a look at **Plug In BC's policy page** for a list of policies put in place by B.C. municipalities of all sizes to support electric vehicles:

pluginbc.ca/policy

Decarbonizing urban freight

Municipalities can implement strategies that improve the efficiency of local goods movement while reducing fuel consumption, such as supporting the use of electrically-assisted cargo-bikes or off-peak delivery schemes.

Learn more about urban freight solutions in our report:

The next frontier for climate action: Decarbonizing urban freight in Canada
www.pembina.org/pub/
next-frontier-climate-action

PEMBINA institute

The next frontier for climate action

Decarbonizing urban freight in Canada

Maddy Ewing, Carolyn Kim, Janelle Lee, Cedric Smith
February 2020

Electrifying municipal fleet

By being early adopters of zero-emission vehicles (ZEVs), municipalities can show leadership with capital investments that pay back, as well as lower operational costs. Municipal teams can plan to replace vehicles reaching end-of-life with zero-emission alternatives. Moreover, when local governments build out a network of refuelling and recharging infrastructure for their own fleets, this infrastructure can also be made available to benefit local economic actors.

For more information on implementing EV plans locally:

Municipal Climate Change Action Centre: Electric Vehicle Knowledge Guide
mccac.ca/app/uploads/EV-Knowledge-Guide.pdf

Transit-oriented development

Planning for denser housing developments in conjunction with transit hubs and corridors, including those providing bus service, improves the livability and attractiveness of a municipality. Alberta's largest cities have been on board for a long time — both Calgary and Edmonton have transit oriented development policies.

City of Edmonton (February 2012)
www.edmonton.ca/city_government/documents/PDF/TOD_
Guidelines_-_February_2012.pdf

City of Calgary (December 2005)
www.calgary.ca/PDA/pd/Documents/transit-oriented-
development/tod-policy-guidelines.pdf

For lessons on transit-oriented development check out:

How to create vibrant transit supportive communities: A Typology & Evaluation Tool
www.pembina.org/reports/how-to-create-vibrant-transit-supportive-communities-
evergreen-pembina.pdf
Transit-supportive development along bus corridors
www.pembina.org/pub/transit-supportive-development-along-bus-corridors

How to create vibrant transit supportive communities:
A Typology & Evaluation Tool

EVERGREEN
PEMBINA institute

Buildings

Buildings represent a great opportunity for municipalities to decrease energy use and carbon pollution, and help residents save money on energy bills while living and working in healthier, more comfortable spaces. High-performance buildings are also more resilient to climate events, providing protection for people during extreme weather or periods of poor air quality.

Demonstrate deep energy retrofits

Pilot projects using municipal facilities or social housing normalize and demonstrate the feasibility of innovative solutions, while also building industry capacity to deliver them.

Programs should also be designed to deliver deep retrofits — that is, whole-building solutions that integrate energy efficiency, decarbonization, seismic safety, and climate adaptation — by increasing incentives for projects that bundle retrofit actions and by setting outcome-based metrics in contracts.
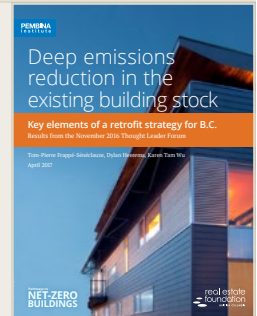
For more on building energy retrofit bundling:

Deep Emissions Reduction in the Existing Building Stock
www.pembina.org/pub/building-retrofits

Building Energy Retrofit Bundling Programs
calp2016.sites.olt.ubc.ca/files/2019/06/Home-Energy-Retrofit-Bundling-Report_2019.pdf

For more information on net-zero planning, see:

The City of Toronto: Zero Emissions Buildings Framework
www.toronto.ca/wp-content/uploads/2017/11/9875-Zero-Emissions-Buildings-Framework-Report.pdf

Vancouver's building bylaw for existing buildings
https://vancouver.ca/files/cov/vancouver-building-bylaw-section-11-2-unoffical-wording-effective-nov-1-2019.pdf

New York City's 2019 Local Law 97
www1.nyc.gov/assets/buildings/local_laws/ll97of2019.pdf

Planning for zero carbon

Larger municipalities, like Edmonton and Calgary, need to set targets and develop programs and policies to eliminate carbon pollution from buildings by mid-century. They can incent or require new construction to be net-zero energy, and to drive down carbon pollution from existing buildings at time of renovation, such as is happening in Vancouver and Toronto. Alternatively, a deadline can be set, like in New York City, which will see emissions from large buildings capped in 2024 and a city-wide emissions reduction of 80 per cent below 2005 levels by 2050.

Incent or require upgrades

"Trigger" events, such as the sale of a building, major renovation or refinancing, offer opportunities for implementing energy conservation measures. These can be promoted and supported by municipalities through the permitting process and/or incentive programs. Market awareness can be accelerated by requiring energy performance disclosure as part of these programs.

In its Municipal Energy Roadmap, the Federation of Canadian Municipalities recommends these upgrades for provinces like Alberta with high-carbon electrical grids: Heat pumps, building envelope upgrades, rooftop solar PV and electric efficiency measures, like controls and LED lighting.

GMF Municipal Energy Roadmap
https://data.fcm.ca/documents/reports/GMF/2020/gmf-municipal-energy-roadmap.pdf

FOR MORE INFORMATION on other sectors and actions not covered in this document, check the Municipal Climate Change Action Centre's (MCCAC) Learning Centre (mccac.ca/learning-centre). The Rocky Mountain Institute's Carbon-Free City Handbook (rmi.org/insight/the-carbon-free-city-handbook) also contains numerous recommendations applicable to municipalities of all sizes.