COUNCIL REPORT

IMPLEMENTING AND ENFORCING MORE ADVANCED ENERGY CODES

Recommendation

1. That the February 27, 2024, Urban Planning and Economy report UPE01754, be received for information.
2. That Attachment 5 of the February 27, 2024, Urban Planning and Economy report UPE01754 remain private pursuant to section 27 (privileged information) of the *Freedom of Information and Protection of Privacy Act.*

Requested Action		Information Only	
ConnectEdmonton's Guiding Principle		**ConnectEdmonton Strategic Goals**	
CONNECTED This unifies our work to achieve our strategic goals.		**Climate Resilience**	
City Plan Values	LIVE		
City Plan Big City Move(s)	Greener as we grow	**Relationship to Council's Strategic Priorities**	Climate adaptation and energy transition
Corporate Business Plan	Transforming for the future		
Council Policy, Program or Project Relationships	• Edmonton Community Energy Transition Strategy • Council Policy C627 Climate Resilience		
Related Council Discussions	• November 1, 2023, UPE01816 Urban Planning and Economy Report, Annual Climate Strategies Update		

Previous Council/Committee Action

At the June 15, 2022, Executive Committee meeting, the following motion was passed:

That Administration provide a memo that outlines opportunities, challenges and options to implement and enforce higher levels of energy savings than the federal energy code as adopted by the province.

Executive Summary

- Over a third of Edmonton's community greenhouse gas emissions come from buildings.[1]
- The new building codes include up to five energy performance tiers, each with increasing energy efficiency requirements. The Government of Alberta will adopt the first tier (Tier 1) for the province on May 1, 2024.
- Homes built in Edmonton today are more energy efficient than homes built a decade ago. The Energy Transition Strategy imagines a future where homes in the coming decade will be even more comfortable, energy efficient, and resilient as well as having lower energy costs than the homes today.
- The City of Edmonton has options to support higher levels of energy efficiency in new building construction in the community through incentivization, partnership and advocacy, policy, as well as activation. However, regulation mandating higher standards will not be possible due to recently announced amendments to provincial legislation.
- Overall Edmontonians are supportive of climate action, and 85 per cent of Edmontonians view it as important that their home is energy efficient. However, the community will see various opportunities and challenges with constructing emission neutral buildings. Although energy efficient buildings may be more cost effective over the long-term, they require a higher initial capital cost.

REPORT

The City of Edmonton has set ambitious climate targets, as outlined in The City Plan and the Community Energy Transition Strategy. This includes reducing community greenhouse gas emissions 50 per cent by 2030 and reaching net zero emissions per person by 2050. Buildings are a significant source of energy consumption in Edmonton, making up approximately 36 per cent of community greenhouse gas emissions in 2022[2]. Emission neutral buildings are a critical part of Edmonton's energy transition. Administration previously provided a memo to Council in response to the motion, with the commitment to bring additional information back within a Council report.

Based on The City Plan growth projections, at least 400,000 additional units will need to be built to accommodate an additional million people. Half of these units are expected to be through new builds and half will be through rebuilding of existing homes. This building and redevelopment has potential to play a significant role in establishing Edmonton's long-term sustainability. Given that buildings constructed today are expected to last past 2050, efforts are needed to support low emission opportunities. Moving toward emissions neutral building practices will support the City's climate resilience goals. An emissions neutral building is highly energy efficient and would be emissions neutral once supplied with zero-emission energy.

Energy and Building codes are rules that provide the minimum requirement for the energy efficient design and construction of new buildings. These codes are developed by the federal government. In turn, provincial governments adopt the national codes, with or without changes. Once these codes come into effect, each municipality must then implement and enforce them

[1] City of Edmonton 2022 Community Greenhouse Gas (GHG) Emissions Inventory Report, July 2023
[2] City of Edmonton 2022 Community Greenhouse Gas (GHG) Emissions Inventory Report, July 2023

through application review and inspections. More information on the codes can be found in Attachment 1.

The most recent codes (2020 NECB and NBC (AE) Part 9.36) include predefined "Energy Tiers", or series of steps to reach net zero construction. These tiers, ranked one through five, gradually decrease the amount of energy a building will consume. The provincial government has the authority to decide which tier of the code they will adopt and when to progress to the next tier that will gradually move towards net zero construction. The Government of Alberta plans to adopt the first tier (Tier 1) of the new code on May 1, 2024, and to continue engagement with stakeholders on if and when to adopt higher tiers.[3, 4] The provincial government has not published a schedule for adopting higher tiers.

Edmonton is a national leader in green building practices and home to significant expertise in sustainable building practices and green building technologies. Currently in Edmonton, some developers are building homes that exceed energy code requirements, including building net zero homes. Based on building permit data, Administration estimates that roughly 30 per cent of houses and seven per cent of large buildings in Edmonton currently meet the Tier 2 requirements of the new 2020 codes. The City of Edmonton is also a leader, requiring new City buildings to be built to an emissions neutral standard, and through the ongoing Blatchford development, which is planned to be a carbon-neutral community for 30,000 residents that uses 100 per cent renewable energy.

Municipal Action

Many Canadian cities are exploring options to reduce emissions in new and existing buildings. Some Canadian cities have adopted, or plan to adopt more stringent energy efficiency requirements for buildings and some have voluntary programs that offer non-financial incentives (Attachment 2). Different cities may have different powers and authorities delegated to them by their respective provincial or territorial governments.

Like other Canadian cities, the City is also making efforts towards emissions neutral buildings. This includes:

- Establishing a policy requiring new City buildings to be built to an emissions neutral and climate resilient standard (Policy C627, in effect since 2021);
- Forming an Emissions Neutral Buildings Industry Advisory Group (ENBIAG);
- Setting emissions neutral requirements for the Blatchford development, encouraging or requiring higher efficiency in City-led developments such as Exhibition Lands and Goodridge Corners;
- Piloting a carbon capture unit on a City facility;
- Simplified zoning requirements for solar panels on residential buildings and higher maximum height limits in small scale residential zones to accommodate thicker insulation;
- Providing various education and awareness programs such as the Building Blocks series and the Emissions Neutral Buildings Information Exchange to support learning and discussions on

[3] Government of Alberta. Municipal Affairs. *Notice - Upcoming new Alberta codes editions.* March 2023
[4] Government of Alberta. Environment and Protected Areas. *Alberta emissions reduction and energy development plan*. 2023

high performance buildings and industry best practices, as well as various energy efficiency awareness initiatives through the City's Change for Climate program;
- Including sustainable building requirements on new construction within City of Edmonton land sale agreements.
- Providing rebates for the installation of solar energy systems on new and existing buildings;
- Programs that focus on existing housing including the Home Energy Retrofit Accelerator, Canadian Home Builders' Association (CHBA) Net Zero pilot, Home Upgrades (support to lower income homeowners) and Clean Energy Improvement Program (CEIP) pilot, these programs allocated funding to incentivize transitioning existing homes towards decreased energy use and higher comfort; and
- Voluntary Energy Labeling program (see February 27, 2024 Urban Planning Committee report UPE01755 Implementing Mandatory Energy Labelling for New Construction, for opportunities and challenges of moving from a voluntary to mandatory program) and the Building Energy Benchmarking program, which contributes to energy reduction activities through informed energy consumption knowledge and year-over-year performance comparisons.

Opportunities

Administration has identified several preliminary options for supporting increased energy efficiency in new construction based on the Energy Transition Strategy's levers of change. These options are not mutually exclusive. A combination of these may be required to achieve the desired outcome.

Lever of Change - Policy and Regulation

On December 18, 2023, the Government of Alberta indicated their intention to remove Section 7(2) of the *City of Edmonton Charter, 2018 Regulation*, Alta Reg 39/2018 (the "**City Charter**"). This regulation permitted the City to pass bylaws under the *Safety Codes Act* related to environmental matters, as long as those bylaws were consistent with current codes. Regulatory options on this topic are limited due to the proposed removal of Section 7(2) of the City Charter and changes to the *Building Code Regulation* (see private Attachment 5). Outside of the creation of a bylaw, there may be potential barriers for zero-emission buildings that can be removed throughout the development process through policy, regulatory and procedural changes. Administration will outline opportunities for the integration of climate action across the planning and development spectrum through the high level Climate Resilience Planning and Development framework scheduled for Council in Q2 2024. As well, there may be policy and regulatory options related to district energy systems, that would provide low-carbon energy sources for buildings, which is a key part of achieving emission neutral buildings (see February 27, 2024 Integrated Infrastructure Services report IIS02148 Implementing Edmonton's District Energy Strategy).

Lever of Change - Incentives

Adoption of higher energy performance in new construction could be encouraged through financial or non-financial incentives similar to the City of Calgary's Green Buildings Priority Stream designed to encourage energy efficient buildings. Administration currently includes a variety of energy performance requirements within sale agreements such as, requiring builders to achieve an EnerGuide rating of at least 15 per cent lower than a typical home or requiring a minimum

IMPLEMENTING AND ENFORCING MORE ADVANCED ENERGY CODES

LEED Certified certification for industrial properties. Administration evaluates increasing energy performance requirements in land sales agreements for each new development project that is advanced (such as Heritage Valley and Goodridge Corners). Additionally, Administration can consider other City development incentives that could be expanded to include climate considerations. Administration is also conducting research to understand if new construction could be added to the Clean Energy Improvement Program eligibility - see Attachment 3 for details.

Lever of Change - Partnerships and Advocacy

The City could work with outside partners such as other municipalities, industry and community stakeholders, and electrical utility stakeholders to strengthen discussions with other orders of government to advance energy performance in new construction, including advocacy related to higher tier adoption. Provincial adoption of a higher tier of the 2020 NECB would provide consistency for builders across the province and bring manufacturer and supply chain benefits. If higher energy performance tiers were to be advanced, industry stakeholders have generally indicated that they would prefer province-wide adoption, rather than local adoption, as it would lead to inconsistent regional requirements. Alberta has recently signaled that it intends to adopt Tier 1 of the 2020 NECB on May 1, 2024. The City could partner with stakeholders to advocate for adoption of higher tiers and provide clarity for timelines to implement.

Successful implementation of higher energy codes will require partnerships and engagement with a broad set of stakeholders. For example, meeting more stringent codes may require increased electrical infrastructure and service to lots, requiring engagement with stakeholders such as the Alberta Electric System Operator, the Alberta Utilities Commission and electrical utility providers. A low-carbon electricity grid is required to achieve net zero emissions. Increased electrical service and capacity is required for higher tier adoption, which includes the electrification of all heating.

Lever of Change - Activation

Stakeholders have indicated that more skilled workers, better technologies and additional education are required to move up the energy performance tiers, and make net-zero buildings feasible at scale. The City can engage with industry and post-secondary institutions to promote capacity building and new technologies, while engaging with the public to educate and promote awareness of the benefits of energy efficient buildings. The City can also support information sharing through forums like the Emissions Neutral Buildings Information Exchange (currently being advanced in Alberta by the Alberta Ecotrust Foundation with funding from the City). Activation actions are not sufficient on their own, but help to increase public and industry interest and capacity for energy efficiency.

Each of these levers have various challenges and opportunities, as detailed in Attachment 4.

Next Steps

A City of Edmonton specific regulation using the City Charter Regulation is not a viable option related to Energy Code matters. However, Administration will:

- Work with stakeholders to advocate for Tier 2 adoption and for a schedule for adoption of higher Tiers (Lever of Change- Partnership and Advocacy);
- Outline opportunities for the integration of climate action across the planning and development spectrum through the high-level Climate Resilience Planning and Development framework that will be presented to Council in Q2 2024 (Lever of Change - Policy); and
- Develop non-financial incentives/green permitting pilot in 2024 using approved 2023-2026 operating budget (Lever of Change - Incentives).

Legal Implications

Legal implications are included in private Attachment 5.

Community Insight

Through various public hearings, such as the Zoning Bylaw Renewal, Administration heard the community discuss the importance of improving energy efficiency in buildings. Administration conducted targeted engagement to collect preliminary feedback from stakeholders, including meetings with the Emission Neutral Building Industry Advisory Group (ENBIAG), the Energy Transition and Climate Resilience Committee (ETCRC) and public surveys (Attachment 6). Administration also reviewed a public report from the Building Industry and Land Development Association (BILD) Alberta[5]. Stakeholders have varying levels of support for additional regulation. Key themes from stakeholder feedback include:

- Alberta is economically and technologically ready for Tier 2, but technological and infrastructure barriers need to be addressed for economical adoption of net zero ready requirements.
- Affordability impacts need to be considered - both the impact on construction costs as well as ongoing operating costs.
- Consistency of Code application across the province is important to many stakeholders.
- 60 per cent of Albertans support net-zero codes, while seven per cent oppose[6].
- Edmontonians are supportive of climate action, and 85 per cent of Edmontonians view it as important that their home is energy efficient[7]. However, Edmontonians are more likely to disagree with paying a tax levy to address climate change (45 per cent) than agree (34 per cent).
- There is a need to reduce emissions from buildings, build industry capacity, remove barriers and include equity and economic growth considerations.

[5] BILD Alberta, "Roadmap to Net Zero New Construction", August 2022.
[6] Efficiency Canada "Building Codes for New Buildings", March 2022 https://www.efficiencycanada.org/building-codes/building-codes-for-new-buildings/
[7] Narrative Research for the City of Edmonton "2023 Climate Change and Energy Perceptions Report", July 2023

IMPLEMENTING AND ENFORCING MORE ADVANCED ENERGY CODES

Additional engagement with key stakeholders would be required prior to implementing programming related to increased energy efficiency in new construction.

GBA+

Administration conducted a GBA+ assessment on the equity implications of increased energy efficiency in new construction. The main equity consideration of increased energy efficiency in new construction is the potential impact on housing affordability. This includes both directly increased costs for new homes and a loss in value for older, less efficient properties whose owners do not have the means to pay for energy efficiency upgrades as the market shifts towards valuing efficiency. Increased capital costs may be offset by reduced utility costs, but this may not translate into savings for tenants, if they are not the property owner. Initiatives to advance energy efficiency in new construction should be done alongside equity-focused work such as energy poverty reduction programs and general housing affordability measures.

Vulnerable populations and low-income people and families are disproportionately impacted by climate change, and the business-as-usual scenario also has equity implications such as more energy poverty during the winter, less adaptability to extreme temperatures, and higher overall costs to retrofit the building later.

Attachments

1. Energy Code Background
2. Jurisdictional Scan
3. Incentive Options
4. Opportunities and Challenges
5. PRIVATE Confidential Legal Advice - Legal Implications of Energy Code
6. Stakeholder Feedback