

Progressive Regulations to Promote Clean Technology and District Energy (2023)

Issue

Alberta regulations are lagging in making renewable energy and clean technology feasible for consumers. Specifically, the Province's micro-generation regulations restrict Alberta businesses from aggregating sites owned by customers, in turn restricting their ability to generate and distribute any excess energy directly to other buildings or compound residence (district energy). Adapting provincial regulations to promote self-generation with clean technology and district energy sources is an important climate change strategy for Alberta, and an opportunity to reduce costs and improve competitiveness for Alberta businesses.

Background

Rising demand for electricity in Alberta

Locally and globally, there is an increasing need for electricity, due to a growing demand for air conditioning, electric heating, and electrified transportation, for example. Growing electricity demand will result in higher delivery and electricity prices: upgrades to infrastructure and construction of generation will be necessary, resulting in costs being passed on to consumers.

In Canada, communities account for 60 percent of total energy consumption and half of Canada's emissions – making them key players in our country's goal to reduce emissions. And while carbon-based fuels will likely remain an important part of our energy system for decades, Alberta has an opportunity to better utilize our fossil fuels by improving the way we use our existing energy sources while transitioning to low and zero emission solutions that are available right now, such as district energy systems.

What is district energy (DE)

District energy systems (DES) use a central energy plant to provide efficient heating, cooling, hot water and power to a group of buildings. Modern systems (climate-resilient and low-carbon) are one of the least-cost and most efficient solutions in reducing emissions and primary energy demand.¹⁴⁸ These systems use alternative energy sources, such as wood waste, sewer heat or waste heat, captured from other processes. Typically, DE is almost fully consumed by consumers within that compound, building or subdivision; excess electricity is sold to the grid.

Benefits

DES have a number of benefits that support communities and business:

More cost effective. Serving many customers from one location, DES have lower operations and maintenance costs than buildings with in-building heating systems. Buildings connected to DES have lower capital costs and smaller footprints and, as such, fewer associated costs (insurance, maintenance, upgrade, etc.).

Reduced carbon footprint. DES use alternative energy sources and have greater efficiency, producing fewer greenhouse gas emissions than fossil fuel-based systems.

¹⁴⁸ <https://www.districtenergy.org/topics/district-energy-cities>

Viable, reliable and readily available technology. DES are proven technologies, and are already in place in other parts of Canada and around the world.¹⁴⁹

Reliable access to energy. Increasingly faced with electricity brownouts or blackouts from ice, snow and wind storms, floods and fires, low carbon technologies like DES can add to Albertans' energy security.¹⁵⁰

Fundamental to more resilient communities. Quest Canada, a national non-profit actively working to accelerate the adoption of efficient and integrated community-scale energy systems in Canada, promotes the value of DE technology in building more resilient communities, citing its environmental, economic and reliability benefits.¹⁵¹

Barriers in Alberta

Current Alberta regulations do not allow a property owner to install generation and sell electricity to the occupants of buildings, compounds or subdivisions. The energy must be sold to the grid through electric distribution system-connected generation (DCG), and then bought back to customers at market rates. Further, while building owners have the option of installing micro-generation, they cannot produce more than what they can consume through their own metering points.

Alberta regulations for small, medium and large business have misaligned incentives for self-generation options. 1). Bulk metering for landlords of commercial retail units and office towers, apartments or large condominium residence is not allowed; 2). There is no incentive for developers of these facilities to install, partner or adapt district energy sources; 3). Micro-generation regulations are restrictive on aggregating sites owned by customers and the distribution of energy is limited at this time; and, 4). Utilities will not allow for building owners to manage the costs of energy for their facilities as rates do not allow such a transaction.

As early as 2017, the Alberta Electric Distribution System-Connected Generation Inquiry identified the need for regulatory change to accommodate growth in the district energy sector in Alberta.¹⁵² However, current regulations in the province continue to hamper DES, despite their proven benefits and viability. Furthermore, incentive programs available through Emissions Reduction Alberta, the Municipal Climate Change Action Centre, and other sources do not support funding programs that could benefit DES' implementations.

As part of its climate change plan, the Government of Alberta has set a target of 30 percent of electrical energy produced in Alberta to be generated from renewable sources by

2030. Progressive policies and strategies in Alberta that promote self-generation with clean technology, such as DES, support an affordable, flexible, reliable and environmentally responsible alternative to energy delivery for Alberta consumers. Such an approach creates an environment of resiliency and competitiveness for Alberta businesses and communities.

¹⁴⁹ http://www.auc.ab.ca/regulatory_documents/Consultations/DistributionGenerationReport.pdf

¹⁵⁰ <https://www.bing.com/videos/search?q=youtube+atco+microgen-renewables&view=detail&mid=8200969BCACD8C2BCEE18200969BCACD8C2BCEE1&FORM=VIRE>

¹⁵¹ <https://questcanada.org/>

¹⁵² http://www.auc.ab.ca/regulatory_documents/Consultations/DistributionGenerationReport.pdf

The Alberta Chambers of Commerce recommends the Government of Alberta:

1. Implement an industrial, commercial and residential regulatory framework that allows customers to install district energy systems for the sharing of electricity and heat between tenants and neighboring buildings. Such a framework would include checks and balances to ensure cost controls are in place to protect end use customers.
2. Include, support and promote district energy systems in programs and policies aimed at helping drive Alberta and Canada's climate change aspirations, more resilient communities and a more competitive economy.