

Progressive Regulations to Promote Clean Technology and District Energy

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 business.

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: infrastructure upgrades will be necessary and generation will need to be constructed, resulting in costs being passed on to consumers.

While carbon-based fuels will likely remain an important part of our energy system for decades, whole economies throughout the world are embracing clean technologies and renewable energy. Alberta has an opportunity to better utilize our fossil fuels by improving the way we use our existing energy sources while transitioning to future models. One of these opportunities is through district energy systems; however, current Alberta regulations hamper district energy systems, despite their proven economic and environmental benefits.

What is district energy

District energy systems use a central energy plant to provide efficient heating, cooling, hot water, and power to a group of buildings. Modern (climate-resilient and low-carbon) district energy systems are one of the least-cost and most efficient solutions in reducing emissions and primary energy demand.¹ These systems use alternative energy sources, such as wood waste, sewer heat or waste heat, captured from other processes. Typically, district energy is almost fully consumed by the consumers within that compound, building or subdivision; any excess electricity is sold to the grid.

Benefits

Whether these systems are incorporated into an existing development or installed as part of new construction, district energy systems are widely used around the world, and have a number of benefits that support communities and business.

More cost effective. Because a district energy system serves many customers from one location, these systems have **lower operations and maintenance costs than buildings with** in-building heating systems.

¹ <https://www.districtenergy.org/topics/district-energy-cities>

Buildings connected to district energy systems also have lower capital costs and **smaller footprints** as they require less space (i.e. fewer infrastructure requirements for metering, boiler rooms, etc.) and, as such, do not have additional associated costs such as insurance, maintenance, upgrade, etc. This is particularly beneficial for office towers, commercial buildings, condos, municipal entities, institutions, etc.

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

Viable, reliable and readily available technology. District energy systems are proven technologies and are already in place in other parts of Canada and around the world.²

Reliable access to energy. Increasingly, consumers are experiencing interruptions on the grid due to external risks such as electricity brownouts or blackouts from ice, snow and windstorms, floods and fires. Using low carbon technologies like district energy systems provide an opportunity to add to Albertan's energy security.³

Barriers in Alberta

Current regulations in Alberta 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. In addition, 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 CRUs, commercial 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.

In 2017, the Alberta Utilities Commission submitted the Alberta Electric Distribution System-Connected Generation Inquiry, discussing the role of district energy sources. The inquiry identified the need for regulatory change to accommodate growth in this sector in Alberta.⁴

Conclusion

As part of the Alberta government's climate change plan, the government has set a target of 30 percent of electrical energy produced in Alberta to be generated from renewable sources by 2030. Progressive Alberta policies and strategies in Alberta that promote self-generation with clean technology, such as

² http://www.auc.ab.ca/regulatory_documents/Consultations/DistributionGenerationReport.pdf

³ YouTube ATCO Microgen - Renewables <https://www.bing.com/videos/search?q=youtube+atco+microgen-renewables&view=detail&mid=8200969BCACD8C2BCEE18200969BCACD8C2BCEE1&FORM=VIRE>

⁴ http://www.auc.ab.ca/regulatory_documents/Consultations/DistributionGenerationReport.pdf

district energy sources, support an affordable, flexible, reliable and environmentally responsible alternative to energy delivery for Alberta consumers. In turn, such an approach creates an environment of resiliency and competitiveness for Alberta businesses and communities.

The Alberta Chambers of Commerce recommends the Government of Alberta:

1. Implement a light and medium industrial, commercial and residential regulatory framework that allows customers to install district energy sources for the sharing of electricity and heat between tenants and neighboring buildings.