About Enerlife Consulting Inc.

www.enerlife.com

Based in Toronto, Enerlife Consulting Inc. is a North American leader in energy efficiency for commercial, institutional and multi-residential buildings. We monitor energy use data for thousands of buildings in Ontario, across Canada and the United States and in Europe. We work with hundreds of building owners, including commercial offices, school boards, hospitals and municipalities, applying data analytics to identify energy efficiency measures, implement improvements and verify savings. We are responsible for a growing number of buildings which are among the most energy efficient in North America.

Enerlife is also leading the low carbon energy transition for commercial buildings. We have documented the necessity to first achieve high levels of energy efficiency in order to make decarbonization and electrification affordable. We have shown that most commercial buildings can displace a substantial portion of fossil fuel combustion without adding demand to the electrical grid.

Enerlife represents the Building Owners and Managers Association (BOMA) in regulatory hearings at the Ontario Energy Board (OEB). We have a multi-year contract with NRCan to document actual energy efficiency of recently opened buildings across Canada, and to recommend code and process improvements to deliver consistently high energy performance for new construction. We advise Enbridge Gas and the Independent Electricity System Operator (IESO) on energy efficiency program design. We freely share our latest knowledge and data through workshops and webinars attended by hundreds of people each year.

As such, Enerlife has unique influence, knowledge and insight into actual energy trends, the characteristics of high energy performing buildings, electricity and natural gas load forecasting, and the nature and magnitude of the real energy savings potential. We offer the following information, observations and recommendations as Ontario tackles the unprecedented challenges and opportunities of the massive energy transition, which is just beginning, and in which commercial buildings will play a large and positive role.

Observations and Recommendations

1. With climate change accelerating, and emissions reduction targets looming, our data show **commercial buildings are not on track** – trends are going in the wrong direction. There is an urgency to implement systemic change. We are moving too slowly, and the climate doesn't care about our challenges.

2. **Integration is key to a successful conservation and energy transition framework:**

    a. We need to **integrate (not just coordinate) electricity and natural gas efficiency programs**. They are joined at the hip in the context of the energy transition. Integrated program design and delivery will maximize efficiency and effectiveness and minimize customer confusion.

    b. **Electric and natural gas integrated resource planning (IRP) programs** are needed to avoid large, unnecessary capital expenditures on energy infrastructure during the energy transition. **IRP needs to be a fully integrated process that involves all key parties**, including the IESO, electric utilities (both transmitters and distributors), natural gas utilities, all levels of government, district heating & cooling providers and customers. Commercial buildings can be major players in reducing peak demands for electricity and natural gas, and the associated infrastructure costs. They need to be engaged in the IRP process well in advance, especially when capital investment (such as exhaust air heat recovery to reduce local peak demand) is involved. Major business decisions take time.

    This IRP approach should be used in all electric and natural gas utilities' on-going infrastructure planning exercise.

3. There is a very big, so far largely **untapped potential for highly cost-effective energy savings and peak demand reductions** through energy efficiency. Traditional achievable potential methods completely miss the mark with respect to the scale and the nature of energy efficiency measures in commercial buildings, in particular through **operations and maintenance improvements**. Using publicly available actual energy data provides more reliable and actionable forecasts at less cost and yields far higher savings targets.

4. Commercial building owners need **better data to plan and execute energy efficiency programs**. We have smart metering of electricity, and electric distributors must work with owners to make data and analytics readily available for identifying and verifying potential savings. It is absurd that natural gas data still rely on the archaic process of manual meter readings. Owners have at best 12 monthly data points to try and manage the biggest source of emissions in their buildings. At least half, and often years of readings are estimated. Advanced Metering Infrastructure (AMI) for natural gas in commercial buildings is long overdue, and is equally essential for gas system planning during the energy transition, as well as design and verification of effective efficiency programs.

5. Commercial building owners need **new and improved efficiency programs** to provide technical support, as well as financial incentives which address big gaps in what exists today, including:

    a. New Construction – a very large number of new buildings in Ontario fail to meet current Ontario Building Code energy standards.

    b. Portfolio Energy Management – while a few buildings achieve significant energy savings, many others in the same portfolio (office, retail, school boards, municipalities) record offsetting increases due to generally unknown equipment deterioration and operational missteps.

    c. Geothermal – the ground offers an unlimited source of year-round heating and cooling which can substantially reduce peak cooling and heating energy demand, which we consider an essential, and currently largely neglected part of an affordable energy transition. Ontario has many highly successful installations along with many that have failed.

    d. Energy Performance Programs – targeting the very large potential for operational savings. IESO's Energy Performance Program, and Enbridge Gas' Pay for Performance pilot program (in kindergarten to 12th grade or K-12 schools) are highly effective North American leaders which should be integrated to deliver immediate savings, and help commercial buildings prepare for the energy transition.

6. **We support a longer-term energy efficiency framework.** Commercial building owners require a longer-term framework (10+ years) that provides certainty and stability, which are crucial for any major investment in conservation and energy transition measures. Many life-cycle-cost analyses have longer than 10 year-timeframes.

7. **A hybrid approach (natural gas and electric) is the most effective and efficient pathway to energy transition.** Electricity will be the future energy source, but it will take a long time to build up the current electricity grid to take on all the additional load shifted from fossil fuel. In the meantime, natural gas will remain to be a major energy source during the near/medium energy transition period. Therefore, natural gas conservation programs are key to emission reduction and easing the additional burden on the future electricity grid. **Maximizing electric and natural gas conservation programs is the most important first step to decarbonization and electrification**.

    During this hybrid transition period, customers will need additional training and optimization tools in order to operate their hybrid systems (natural gas and electric) in the most economic, effective and efficient manner. Alternative electricity and

natural gas price plans (e.g. the recent alternative time-of-use global adjustment price plans proposed by the OEB) could further improve the economics of these hybrid systems, providing additional incentives to electrification, resulting in more greenhouse gas emission reduction.