

**Improving Competitiveness in Canada's Small and Medium Enterprises through
Energy and Carbon Management
as part of the COVID-19 Economic Recovery Program**

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Improving Competitiveness in Canada's SME Sector through Energy and Carbon Management as part of the COVID-19 Economic Recovery Program

About David Arkell, President and CEO, 360 Energy

David Arkell is the President and CEO of 360 Energy, a company he founded in 1995. He is seen by many customers and people within the energy industry to be a thought leader on how energy should be managed on a continuous basis. Working in 23 states and 8 provinces across North America, David has a deep understanding of energy markets and of corporate management techniques that impacts their ability to manage energy and carbon. His knowledge has enabled 360 Energy to offer innovative customer-focused energy programs to drive continual business improvement processes. David's unique approach integrates energy efficiency implementation with optimizing energy supply management. Their clients consistently achieve energy performance improvements year after year. 360 Energy is now applying this understanding to helping businesses reduce their carbon footprint.

Introduction

As a company that has been working with businesses, the greenhouse industry and public sector to reduce and manage their energy for over 25 years, I would like to strongly encourage the Government of Canada to put a focus of its COVID-19 economic recovery program on improving Canadian businesses' ability to manage energy/carbon that would enhance Canadian productivity and create new jobs in the sustainability sector while also reducing Canada's impact on the climate.

Below are recommendations and insights about the SMEs from my years of experience understanding its opportunities and barriers as it relates to energy and, by definition, carbon management.

The goal is to include SMEs in the carbon reduction activity that will also position them for the future and lead them to increasing their productivity. This action will occur by integrating management techniques that are learned and embedded within their organizations. The techniques will provide measurable productivity improvements and a reduced environmental impact from this individually smaller but collectively very large sector.

Recommendations

- Provide resources to Small and Medium-Sized Enterprise businesses (SMEs) to invest in the human capital necessary for corporate culture change that integrates climate consciousness throughout an organization – finance, procurement, engineering, operations.
- Provide SME businesses with resources to develop and implement internal interdepartmental business processes to track, report and reduce energy usage that enables continuous improvement programs to control and reduce energy usage and carbon over time. Base multi-year funding on meeting sector targets. Bonus companies that develop and implement a Net-zero plan for 2030 and meet accelerated targets.
- Create a national carbon market system that enables the robust creation of credible carbon credits and offset purchasing across the country.

Making the Case for energy and carbon management for SMEs

Fully maximizing energy and carbon management in the SME business sector will have a significant compound effect to reduce carbon emissions, create jobs, improve the competitiveness of the Canadian economy and position it for growth, increased wealth and prosperity, while reducing environmental and climate impact.

With maximized energy and carbon management programs, Canadian companies will:

- Be more competitive
- Be more innovative
- Reduce carbon emissions and other environmental impact
- Embed climate consciousness at the corporate level and throughout organizations
- Integrate energy supply management with conservation, and
- Help Canada meet its carbon reduction targets
- Enhance Canadian branding around the world leading to additional export opportunities

Insights about SMEs and their energy use

1. Most Businesses don't have a full understanding that energy use is a controllable cost – from procurement to technology to process improvements there are many opportunities to avoid unnecessary energy costs. Most get their energy bill and then pay their bill. Given that 80% of carbon emissions come from energy use, therefore when a business manages its energy use, it can also manage its carbon footprint. Raising the consciousness of businesses that energy and carbon are controllable is essential to optimize the reductions and build a corporate culture of continuous improvement that will be necessary for Canada to meet both its 2030 and 2050 targets.

2. Organizations that do think they do pretty well when it comes to managing their energy almost always miss a lot of opportunities. But like the saying goes “you don’t know what you don’t you.” Virtually every organization we’ve worked with over the last 25-plus years is surprised to learn how much more control they can have over their energy use and spending. Optimizing energy and carbon efficiency fully comes with cross-functional teams focussed on energy savings, cost avoidance, efficiency and carbon reduction. Under Senior Management sponsorship, cross-functional Energy teams bring together: Finance to track and benchmark costs; Engineering and Operations to drive site level activities and technology; and Procurement to source solutions and carbon off-sets to meet zero emissions and savings targets. These are whole organization culture shifts that set the stage for continuous improvement and long-term success. Essential ingredients for the shift to the low-carbon economy.
3. Technology is an important ingredient in the mix businesses should be considering when reducing their energy and carbon footprint; but many times technology investments are simply used as quick fixes so that businesses can forget about it and get back to business. They don’t have to internalize the motivations or rationale or understand the available levers to control carbon emissions and nor the culture shift necessary to contribute to the Net-Zero economy. In our experience, quick fix technology improvements aren’t often all they’re cracked up to be. The goal of energy managers funded by government programs has been to find more government programs to fund equipment replacement. The technology choices are often inadequately assessed in the first place, improperly installed, maintained, and rarely measured (annually) to confirm for effectiveness. The energy manager role itself is also almost always a middle management position embedded in engineering with little senior management buy-in or no ability to influence the additional leavers of procurement, finance and operations.

To date, most energy reduction programs implemented by governments in Canada focus only on technology to reduce consumption, and overlook the management improvements that focus on training, accountability, reporting and consciousness raising. Developing internal business processes to track and report energy usage and costs, combined with employee training, enables a continuous improvement program to control and reduce energy usage over time. This is one of the single biggest overlooked opportunities to reduce Canada’s carbon footprint and energy consumption.

4. The science is moving everyone to act and that momentum should continue in order to spur change. Governments, markets, investors, financial institutions, media, customers and the public are all making climate change everybody’s business. Demands on organizations to significantly reduce their carbon footprints and have a plan get to Near or Net-Zero Carbon Emissions is accelerating. Developing and implementing multi-year Near or Net-Zero Emission Program can meet the unique needs of businesses and reduce their risk exposure. Organizations with a Near or Net-Zero Emission Program will not only reduce their risk, reduce and avoid future costs, they’ll also become preferred employers, preferred suppliers, gain recognition, build their brand and their reputation. Government efforts to meet the 2030 and 2050 carbon reduction commitments should ensure this momentum continues.
5. Most carbon reduction and energy efficiency programs want to amplify the benefits by focussing on technology, stimulating innovation, new industries and sectors. This is an important vision for the future. There is no doubt these are programs will bring long term benefit to our climate mitigation efforts but focussing solely on the long vision misses the opportunity for significant compounded

gain by also simply focussing on business processes to control costs and reduce energy consumption and Canada's carbon footprint. This provides an immediate gain that also positions the sector for the low carbon economy.

Energy and Carbon Reductions Potential - Example

By implementing simple energy management principles, accountabilities and controls Canadian manufacturers combined could save as much as \$15B over five years, (\$3B per year over 5 years). This represents only 5% per year of the energy consumed by Canadian manufacturers. Added up over 5 years, that's a 25% reduction, all without even including any technological upgrades or carbon offsets. In our experience, a five per cent reduction for five consecutive years is a fully achievable undertaking.

With energy consumption representing 80 percent of GHGs, those reductions amount to 9.9 Megatons per year for five consecutive years (or 49Mts), which would contribute significantly to Canada meeting its 2030 Paris Climate Accord targets.

<i>2017 Fuel Usage - Total Industrial, Agricultural, Commercial and Institutional by Type</i>		
Fuel Type	Fuel Amount	Estimated Consumer Cost
Natural Gas & NGL	2,152,255 TJ	\$12.9 billion
Electricity	321,148 GWh	\$32.1 billion
Refined Petroleum Products	15,760 ML	\$15.8 billion
Total		\$60.8 billion
Estimated 5% savings (annual)		\$3.04 billion

Data from Table 1-1 and Table 2-1 from Statistics Canada's 2017 Report on Energy Supply and Demand in Canada

<i>2017 Carbon Emissions - Total Industrial, Agricultural, Commercial and Institutional in Tonnes CO2e</i>		
Fuel Type	Fuel Amount	5% Reduction
Natural Gas & NGL	106,086,216	5,304,311
Electricity	48,172,260	2,408,613
Refined Petroleum Products	43,604,068	2,180,203
Total	197,862,543	9,893,127

Calculated using Guideline for Quantification, Reporting and Verification of Greenhouse Gas Emissions Effective November 2017, the National Inventory Report 1990-2017 Emissions Factors, and Table A13-1 from the National Inventory Report 1990-2016: Part 3

Testimonials - Improving competitiveness with comprehensive energy management

Many companies have and do take energy management seriously and with great effect, reducing costs, improving productivity and operational performance, reducing waste and environmental impact:

Steel business and processor Samuel, Son & Co. have had comprehensive energy management programs at a Corporate and site level for many years *“... has driven to be more innovative, drawing on corporate and individual site energy multi discipline team’s intimate knowledge. Our team uncovered savings they had not previously considered, and established processes to ensure those new savings are measured and sustained over time. In today’s marketplace, being cost-competitive takes more than just tough negotiation with materials suppliers. Staying competitive requires a keen understanding of all input costs and the variables that cause those to fluctuate. It requires strategic application of data and knowledge and an insatiable curiosity about ways to get better over time.”*

Rod Crawford, Group President of Manufacturing
Samuel, Son & Co.

“Energy costs account for about one-third of the input expenses in manufacturing cement, and the industry as a whole is known for being energy and greenhouse gas intensive. It is also very competitive; both energy markets and cement markets go through cycles. Our organization needed to be ready for the risks of a slow market for our product. Carefully managing energy consumption and energy costs, as well as reducing GHG emissions, are essential to staying competitive.”

Jose Soraggi
Operations Manager
St. Marys Cement, Bowmanville ON

“We now understand our utility bills, our site’s energy usage, energy markets, and the pieces over which we have the most control for us to manage. With this knowledge, we not only tackled our low-hanging fruit, but we continue to identify many less conventional conservation and energy procurement ideas. Surprising enough, 50% of the savings we have achieved have not required company capital. We have embedded energy management practices throughout our company to control energy with members from diverse roles across the plant. The management of energy is a sound business investment and has provided significant returns for us.”

Robert Hunt
Sumitomo Bakelite North America, Inc
Durez Canada Company, Ltd. Fort Erie ON

“Energy is Cronos’ 2nd largest cost after labour. Our comprehensive energy management program empowers our team with the knowledge, skills and data required to understand how, when and why we are using energy; identify opportunities to reduce energy use and energy costs, and to sustain those savings over the long term. Cannabis production is a very competitive industry; there are a lot of players entering the field now but as the market levels out, the companies who survive will be those who understand and control their input costs very closely. The processes is establishing a culture of continuous improvement that will enable us to remain competitive.”

David Hsu
Chief Operating Officer
Cronos Group Inc.

Conclusion

To advance the public call to action now we need to *activate and engage human capital* to move to our ambitious and required goal of net-zero emissions. Relying solely on technology will not get it done and will not get done at the speed that is required. Culture and behaviour change across all business sectors a required pivot that government and society needs to undertake to reach the goal.

Fully maximizing energy and carbon management in the SMEs will have a significant compound effect to reduce carbon emissions, improve the competitiveness of the Canadian economy and position it for growth, increased wealth and prosperity, while reducing environmental and climate impact.

When we maximized businesses continuous ability to manage energy programs, Canadian companies will:

- Be more competitive
- Be more innovative
- Reduce carbon emissions and other environmental impact
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- Help Canada meet its carbon reduction targets
- Enhance the Canadian Brand around the world