ALBERTA
Energy Efficiency Alliance

A Better Way to Manage Utility Costs in Alberta

Albertans have overpaid on their utility bills by billions of dollars because we've largely ignored energy efficiency programs in the past. We have new programs coming, but more needs to be done to ensure we're not going to continue overpaying in the future.

There are two main ways energy efficiency reduces utility bills:

1) helping homes and businesses use less energy
2) avoiding the need to build new infrastructure like power lines.

Provinces and states that have annual targets for energy efficiency programs typically save consumers between 0.4% and 1.5% of their electricity every year, and between 0.4% and 0.75% of their natural gas (beyond business-as-usual).[1] If Alberta had run similar programs instead of shutting down its Energy Efficiency Branch in the early 1990s, Albertans would have saved between $260 and $890 million in 2014 on electricity bills alone (as shown in Figure 1).

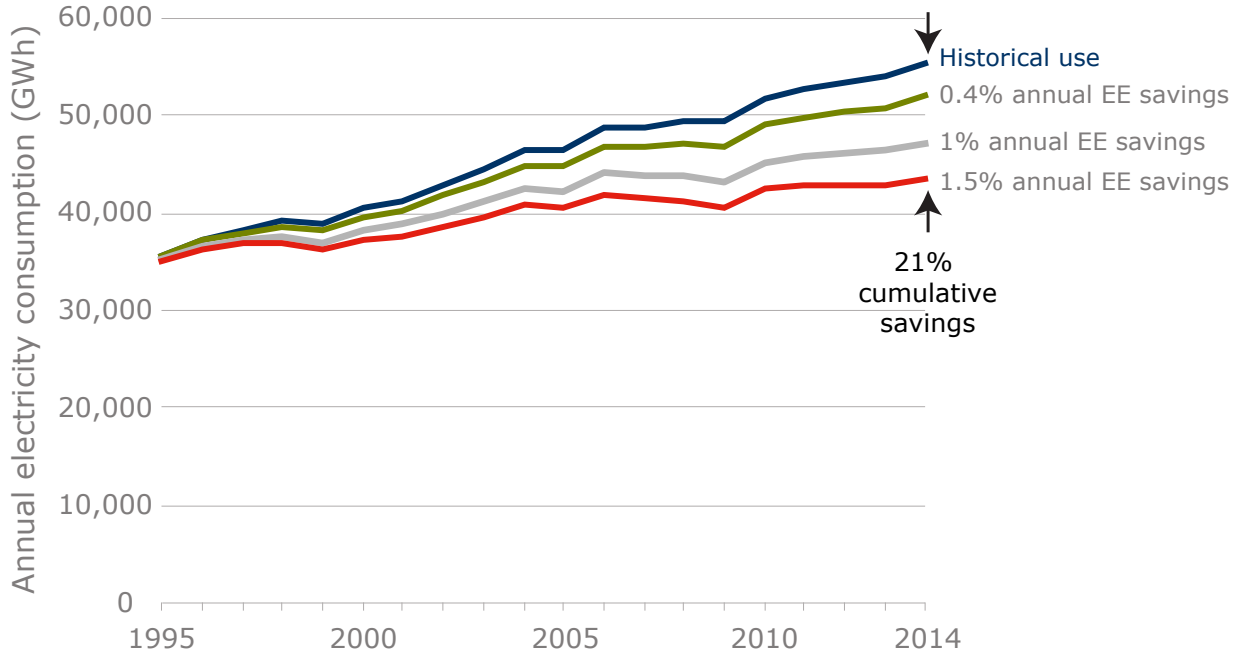

Figure 1: Province-wide electricity consumption under different efficiency scenarios

When it comes to new infrastructure, we are currently in the middle of building $13 billion worth of new transmission lines in the province.[2] Of course, some of this expansion is needed under any scenario, but it is clear that a significant amount of this expansion could have been put off if electricity consumption were reduced by between 0.4% and 1.5% every year, similar to other provinces and states. In fact, the amount of transmission line costs deferred could be even greater than 21% because the power lines currently being built are designed to meet the province's electricity needs for decades to come – providing time for even more energy savings to be realized. Exact figures for savings in this area are unknown, but could very realistically be several billion dollars (see Table 1).

While we've missed out on these past savings, we shouldn't make the same mistake again. The upcoming launch of new energy efficiency programs is a good start, but managing utility costs through energy efficiency needs to go much further.

Table 1: Potential electricity cost savings from energy efficiency programs

SAVINGS OPPORTUNITY	0.4% ANNUAL SAVINGS	1.5% ANNUAL SAVINGS
Electricity savings from 1995 to 2014 relative to business-as-usual	$2.5 billion	$9.0 billion
Reduction in costs for transmission projects (originally $13 billion) – based on energy savings out to 2030 for each scenario	$1.3 billion (10% reduction)	$4.1 billion (32% reduction)
Total potential savings from reduced energy use (1995-2014) and avoided infrastructure costs	$3.8 billion	$13.1 billion

Note: Does not include potential savings from reduced distribution infrastructure requirements.

Best practice in managing utility costs

One of the best practices in managing utility costs is to look at all the ways to keep costs down and implement a variety of approaches that result in the lowest cost to consumers. This has led to competitive markets to search out the lowest cost energy sources and close monitoring of costs for natural monopolies like transmission and distribution systems. These approaches, however, only apply to the supply side of the utility system. Nearly all jurisdictions also look to the demand side of the system to save costs. In fact, it is well recognized that it is cheaper to reduce demand than to build new supply infrastructure (as shown in Figure 2).[3]

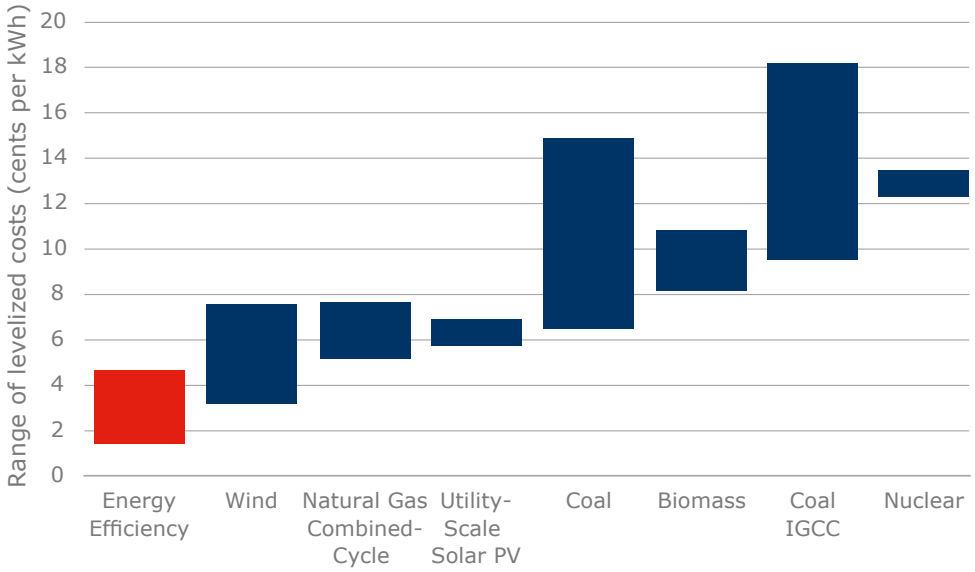

Figure 2: Cost of energy efficiency versus electricity generation

This has been one of the missing pieces in Alberta for some time now. The Alberta Utilities Commission (AUC) and the Alberta Electric System Operator (AESO) have not been thinking about how to manage utility costs through reducing demand. It's not their fault though; they were never given the ability to do so. In fact, when ATCO Gas asked in 2011 if they could help consumers save energy, the AUC denied these costs. They didn't disagree that it was good for consumers and would save more money than the programs would cost. They basically acknowledged that they had no mandate from government to approve energy saving programs, even if they were in the financial interest of consumers.[4]

While new energy efficiency programs are a great start for helping Albertans save money, the AUC and AESO also need to be allowed to consider energy savings as a way to help manage utility costs. For the AESO, a mandate like this would have certainly factored into their decisions regarding the $13 billion worth of power lines currently being built. A simple cost-benefit analysis years earlier would have shown (as it has in other provinces and states) that it's cheaper to help consumers save energy than it is to invest 100% of your money into new supply infrastructure. While it's too late to reverse most of these decisions, we should make sure we do things differently next time.

Energy efficiency programs for the future

The last reason why it's important to provide a mandate to the AUC and AESO around demand side savings in the utility system is because it's unclear at this point whether we're investing enough into energy efficiency. Again, the initial programs are a good start — Alberta will be about average in per capita funding across the country — but no one is looking seriously at whether we should be increasing funding from there. Giving a mandate to the AUC and AESO means they will need to regularly assess what the right level of investment is. Only then will they have both the **insight and ability** to set energy efficiency funding at a level that is best for consumers, and to actively manage utility costs using tools that have been available in other provinces and states for decades.

Endnotes

1. Dunsky Energy Consulting. 2015. *GHG Savings and Energy Efficiency High-Level Opportunity Analysis in Alberta.* http://www.aeea.ca/pdf/energy-efficiency-scenarios-for-alberta.pdf. p.2.
2. Darcy Henton. 2015. "Power transmission costs in Alberta expected to nearly double over next decade." *Calgary Herald.* http://calgaryherald.com/news/politics/power-transmission-costs-in-alberta-expected-to-nearly-double-over-next-decade.
3. Figure adapted from Chris Neme and Jim Grevatt. 2016. *The Next Quantum Leap in Efficiency: 30 Percent Electric Savings in Ten Years.* http://www.raponline.org/knowledge-center/the-next-quantumleap-in-efficiency-30-percent-electric-savings-in-ten-years/
4. Alberta Utilities Commission. 2011. *Decision 2011-450.* http://www.auc.ab.ca/regulatory_documents/ProceedingDocuments/2011/2011-450.pdf. p.142.