

## [ LETTERS ]



### MOORE'S LAW DOESN'T APPLY

Steven D. Lightfoot, P.Eng., builds a weak case when suggesting that Ontario's *Green Energy Act* is an ineffective and wasteful policy ("Why Moore's law applied to energy generation is more like Moore's curse," *Engineering Dimensions*, May/June 2011, p. 64). In fact, the Ontario *Green Energy Act* is an effective piece of legislation that has sparked growth in clean and renewable sources of energy, has helped create a series of energy conservation measures and has created over 10,000 new jobs in Ontario so far. Indeed, over 24,000 contracts have been offered to renewable energy generators, totalling 4500 MW of renewable energy in Ontario as of July 2011. Many renewable generation facilities are being connected to the electricity grid each month, reducing reliance on fossil-fuel-fired peaking plants.

Changes in status quo that deliver long-term benefits often require investments that feel high, given our preference for instant gratification and our tendency to avoid looking too far into the future. And so it is not surprising that some "authorities" currently use energy density as the most rational criterion when prioritizing investments in Canada's energy future. This short-term investment prioritization favours more traditional and

established sources, such as nuclear and fossil-fuel-driven generation, over renewable generation, despite it often taking 10 years or more from investment proposal to commercial operation of a traditional generating facility and despite real costs and real risks trending upward for traditional generation. By contrast, it takes less than five years to reach commercial operation for most renewable generation facilities, and the associated real costs and real risks for renewable energy are rapidly trending downward. Fortunately, Ontario has visionary political leaders who have crafted policies that will stimulate investment in a safe, reliable, affordable and sustainable electricity system.

The *Green Energy Act* recognizes that a safe, reliable, affordable and sustainable electricity system can be achieved only through an optimal mix of complementary energy sources. It further acknowledges that there was an under-investment in Canada's electricity system since 1990, and that Ontario's electricity rates are less than most other developed jurisdictions and that new investment is an inconvenient truth. Ratepayer increases are required to fund investment in our electricity system. The majority of Ontario electricity rate increases are used to fund upgrades and cost overruns for traditional energy sources, while a minority are used to fund deployment of renewable generation facilities in Ontario.

The head of a leading progressive American think tank, John Podesta, recently said Ontario has become a global leader in the clean-energy business, and that killing the government program that is driving investment in wind and solar industries would be a mistake. Enlightened policy-makers in Ontario also recognize that the majority of Ontario citizens strongly support such renewable energy sources as solar photovoltaic energy generation. Finally, Vermont Law School's Institute for Energy and the Environment recently stated that "building nuclear reactors would be the worst choice you could have for reducing carbon emissions."

Ron Mantay, P.Eng., MBA, Sharon, ON

### RISK MANAGEMENT STUDIES

We read with great interest the letter by Richard Hawrelak, entitled "Risk management," published in the May/June 2011 issue of *Engineering Dimensions* (p. 88).

In the letter, Mr. Hawrelak identifies the lack of qualified engineers in the field of risk management in Canada. This is, indeed, an issue of engineering education in our country. Many efforts have been made in the department of chemical and biochemi-

cal engineering (CBE) at the University of Western Ontario to make improvements in this regard.

Process safety and risk assessment are covered, in great detail, in several courses in the CBE department at Western. Students are exposed to many case studies, and a number of safety-related video clips are used in class to show the importance of safety in the chemical industry. This material is covered starting from first-year undergraduate studies to graduate level courses.

We encourage the readers of *Engineering Dimensions* magazine to learn more about the process safety and risk management materials covered in CBE programs at Western by visiting our department website: [www.eng.uwo.ca/chemical](http://www.eng.uwo.ca/chemical).

Ajay K. Ray, PhD, P.Eng.  
chair, department of chemical and biochemical engineering,  
University of Western Ontario,  
London, ON



## NOT SO ENVIRONMENTALLY FRIENDLY?

I read with interest the article "PEO adds tax receipt downloading to website" (*Engineering Dimensions*, May/June 2011, p. 17) and noted that Chetan Mehta, PEO manager of financial services and business planning, indicated a cost saving to PEO of about \$18,000 annually. As a cost saving measure, I fully endorse this move.

However, I was extremely disappointed that Mr. Mehta is quoted as saying, "It's also inherently green and in keeping with PEO's endeavour to reduce its eco-footprint."

Paper is a biodegradable, renewable, sustainable product made from trees and non-wood fibres, such as agricultural residues and for purpose crops. Growing and harvesting trees and processing them into paper provide tens of thousands of jobs in Canada. Working forests are good for the environment. They provide clean air, clean water, wildlife habitat, carbon neutral energy, carbon storage and can help mitigate forest fires. Selling agricultural residues, such as cereal straw and corn stover, increases farm income, which could save the family farm. And, planting for purpose crops allows farmers to use marginal lands not suited for food production. Also, paper is recyclable. For more facts on paper and the environment, please refer to [www.twosides.info](http://www.twosides.info).

On the other hand, computers are made from plastics using nonrenewable fossil fuels and various nonrenewable metals, including toxic heavy metals. Electronic waste disposal is already a large global problem and increasing yearly—not to mention the huge amount of global energy that goes into operating the billions of computers out there, energy that is largely produced from nonrenewable fossil fuels whose burning releases captured carbon dioxide into the environment.

To my knowledge, there is not a single peer-reviewed study anywhere that shows that electronic tax receipts (or bills) are more environmentally friendly than using paper (if PEO or anyone knows of such a study, I would appreciate knowing about it). In fact, in the United Kingdom, this type of hype has resulted in the legislation of new requirements for digital marketing that now have to be backed up by fact.

As noted earlier, I endorse this move as a cost saving measure for PEO. But, I cannot agree that e-receipts and e-bills are "inherently green" unless PEO can back this up with facts.

Robert (Bob) W. Hurter, MBA, P.Eng., Ottawa, ON

## Case study 1

Did "safety" glass perform as intended?



## WORKING TOGETHER

Regarding the letter by Sam Kodsi, P.Eng. (*Engineering Dimensions*, May/June 2011, p. 87), the case study Mr. Kodsi sought to clarify is one of many I submitted to PEO, who requested easily-understood examples of forensic engineering to engage readers who may not be familiar with the field. There was neither intent nor space to provide a complete set of credits for the many other parties involved in the case studies presented.

In the spirit of prudent forensic engineering, after reading Mr. Kodsi's letter I retrieved the relevant documents from storage to review. Mr. Kodsi was retained directly by the father of the plaintiff who sustained injuries from the subject glass window. In his expert engineering report, Mr. Kodsi concluded that the glass used in the vehicle did not meet the required safety standards, based solely on a visual inspection of the size variance between individual glass fragments. Interestingly, a subsequent expert report from the US, commissioned on behalf of the vehicle manufacturer, also relied on glass fragment size analysis, but arrived at the opposite conclusion (i.e. that the subject glass was in conformance with applicable safety standards).

The defendant ultimately retained legal counsel, who in turn retained Jamie Catania of Giffin Koerth Forensic Engineering, five years subsequent to Mr. Kodsi's report. Upon assessment of the incident, Mr. Catania determined that a materials expert would be required, at which time I was retained to assess the

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subject safety glass. Using detailed polarized optical microscopy and scanning electron microscopy/spectroscopy, in conjunction with fragment size analysis, I estimated the mid-plane tensile stress of the glass and determined that the glass was improperly tempered.



### PROFESSIONAL DEVELOPMENT

To the disappointment, I am sure, of my many readers and fans, today's letter is not about climate change. Rather, it is about professional development. A common theme across the comments from past PEO presidents was the need for monitoring professional development of PEO members. I agree that it is important but we need to consider some other factors.

A civil engineer, for example, who is designing buildings or bridges needs to stay current with the various codes, changes in materials sciences, and the effects of climate change (howsoever caused, cyclical or human causation—sorry, I couldn't resist) so professional development on an ongoing basis is needed and warranted. However, before we rush to implement a practice common among other professional organizations of requiring a member to earn so many professional development credits per year, what about the engineer who is the agent of the change? The engineer whose work, itself, is the change before the courses are developed, the textbooks written, or the codes updated? Sure, they could take courses but the subjects to them are outdated, yesterday's methods.

In my own career as a manufacturing engineer, I would have been hard-pressed to earn such credits in the '90s. Throughout the '90s, I was implementing just-in-time, LEAN, and six-sigma tools but years before the labels of LEAN or six-sigma had been created. Through a fortunate and somewhat unique opportunity, I was leading edge for a while in factory design, processes, and management through experimentation and trial and error. Manufacturing engineers, managers, and union executives from other companies were visiting us to learn what we were doing. They walked away with a certificate they could have used in such a PD monitoring scheme. Even today, some companies are just starting what we did back in 1990.

As an aside, I have heard a term used at several companies today that I believe I coined oh so many years ago and shared with co-workers and our visitors. I should have copyrighted it.

So, as we implement a professional development monitoring process, let's keep in mind that a one-size-fits-all will not work.

David Moffat, P.Eng., Toronto, ON

Primarily, I believe this case illustrates why forensic engineers should be working together wherever possible to strengthen the profession and raise our currency so that we are fully respected within both the engineering and legal communities.

Doug D. Perovic, PhD, P.Eng., Toronto, ON

### JUST JACK

Life is whimsical; we move along with fortune and little care and out of nowhere we are hit by what Bob Rae described as a life event that breaks our hearts.

Maybe that is why so many were emotionally touched by Jack Layton's sudden death. The whimsy in working a lifetime for a goal that is almost within reach, in just beginning to enjoy some of the rewards of achievement when it is all yanked away, seems so unfair that, whatever our politics, we can relate.

To some the response was over the top; after all, we are Canadians and making a fuss over one of our own is not the way we are, modest and self-effacing. But when a political foe like Prime Minister Harper acknowledges Jack's place in people's hearts and offers a state funeral, one knows how special Jack was in Canadian politics.

In Jack Layton we lost a truly great Canadian.

He showed us the virtue of civility, decency, and deep respect for humanity and for nature.

As an individual bearing the great trial of a devastating illness, his courage and dignity was an invaluable example.

In his public life, you could disagree with his politics but not with his kindness and sincerity.

It is appropriate for us to recognize that politics is perfectly honourable and even beneficial, when honourable and decent people like Mr. Layton participate in it. The emotions surrounding his passing reiterate people's hunger for struggle on behalf of the ordinary citizen, and the wish that that struggle be conducted in an upright manner.

We, who encourage engineers to enter public life, hope that the manner of his public service, tolerant, respectful, inclusive, dedicated, and offered with grace and charm, should be an inspiration.

Patrick J. Quinn, P.Eng., FEC, Mississauga, ON

Letters to the editor are welcomed, but should be kept to no more than 500 words, and are subject to editing for length, clarity and style.

Publication is at the editor's discretion; unsigned letters will not be published. The ideas expressed do not necessarily reflect the opinions and policies of the association, nor does the association assume responsibility for the opinions expressed. All letters pertaining to a current PEO issue are also forwarded to the appropriate committee for information.

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