

# CCRE Commentary

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## Hope is not enough: Inspiring better energy policy

by Steven Lightfoot, Eng.



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He has worked for both Pratt & Whitney Canada and Rolls-Royce Canada over a seventeen-year career as a gas turbine Engineer. During that period he held numerous positions in fields as diverse as mechanical design, engine performance, engine testing, control systems development, and customer support. He currently works in the Thermal Power division of SNC-Lavalin where he is involved with many aspects of electrical power plant development, ranging from feasibility studies to on-site commissioning and including both “conventional” and “clean-tech” technologies such as cogeneration, district heating and waste-to-energy projects.

In addition to his professional technical career he is active in some local businesses including a brewpub. He also contributes as a volunteer to the public discourse on energy policy and its connection to the environment and the economy through both writing and speaking engagements. He can be contacted at [lightfoot@ca.inter.net](mailto:lightfoot@ca.inter.net)

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## Hope is not enough: Inspiring better energy policy

Steven Lightfoot, Eng.

Hope, that element of the human condition that has inspired greatness and progress throughout history, is now derailing serious attempts to deal with real threats to securing future energy supplies and protecting the global environment.

Unfortunately, hope that simple solutions exist to complex energy challenges is driving simplistic and unrealistic energy policy around the world. We should let hope inspire us, but not let it inform the rational processes we require to solve problems.

There is no lack of environmental lobby groups or energy gurus trying to bend the ears of politicians with messages of false hope in green energy.

One such guru is Amory Lovins, the founder and head of the Rocky Mountain Institute. Lovins, a promoter of renewable energies, is a master marketer who regularly develops snappy but shallow energy-related catch phrases. However, his work has been highly influential. For example, his most recent book, *Reinventing Fire*, is endorsed by U.S. political heavyweights such as George Schultz and Bill Clinton.

Lovins writes and speaks about energy policy using emotionally evocative language. Recently, he coined the expression “applied hope”<sup>1</sup> to describe the philosophy underpinning his work.

But this attractive phrase is no substitute for a fact-based energy policy. It muddies rather than clarifies the debate over this critical field that is much too serious for flippant catchphrases. Instead of using hope strictly as inspiration, Lovins and his ilk provide false hope for real problems. The result: wrong-headed policies that take us backward rather than forward in generating much-needed solutions.

### CRITICAL THINKING REQUIRED

Problem solving is a cerebral, not an emotional process. While it can involve brainstorming and creativity, problem solving tends to be Cartesian in nature. It requires critical thinking.

In the context of addressing energy policy and related technologies, critical thinking will, at a minimum, include a review of scalability, practicality, commercial and regulatory requirements, and will involve input from the relevant industry, including the engineers in that field.

It is worth noting that engineering is otherwise known as “applied science,” an interesting contrast to the Lovins-created expression “applied hope.”

*“Hope is at the root of who we are as humans. It is in our nature. We want to believe.”*



Steve Rhodes  
February 2, 2008 in Castro, San Francisco, CA,

<sup>1</sup> Lovins, Amory. Commencement remarks to the Natural Science School, University of California at Berkeley. 15 May 2011.



Thomasin Element

*“Hope-driven  
energy policy is all  
around us”*

## THE MEANING OF HOPE

According to the website dictionary.com, hope is defined as “the feeling that what is wanted can be had, or that events will turn out for the best.”

Hope is a fundamental part of the human psyche and human culture. One only has to look at any religion to find that hope is a core characteristic of its belief system. In the New Testament, for example, Corinthians 13:13 describes the essential values of Christianity as being “Faith, Hope and Love.”

Hope can be a powerful tool of persuasion. It is frequently used by politicians in their quest to engage supporters. President Barack Obama demonstrated the rhetorical use of hope during the 2008 presidential election campaign when he said: “In the end, that’s what this election is about. Do we participate in a politics of cynicism or a politics of hope?”<sup>2</sup>

More than anything, however, hope makes us feel better in difficult circumstances and in times of uncertainty. Hope is the opposite of fear, and acts as a pacifier and emotional defence against it. Fear causes paralysis of rational thought. Once hope has replaced fear, we are free to use reason again, if we so choose.

Hope is at the root of who we are as humans. It is in our nature. We want to believe.

## THE LIMITS OF HOPE

Hope, however, has a down side. While hope can give us emotional strength in times of adversity, relying on hope can be a liability.

Hope does not solve problems. Solving problems requires reason, not emotion. Hope can pacify fear so that we are able to use reason, but using hope as a problem-solving tool will lead us nowhere. As author Norman Cousins wrote: “Hope is independent of the apparatus of logic.”<sup>3</sup>

Earlier, Benjamin Franklin warned that we must not rely on hope to address the serious challenges before us. Said Franklin: “He that lives upon hope will die fasting.”<sup>4</sup>

## AS A SOCIETY, WHAT ARE WE REALLY TRYING TO DO?

Today, there is a cacophony of voices on all matters energy and environmental, including many outspoken proponents of renewable energies.

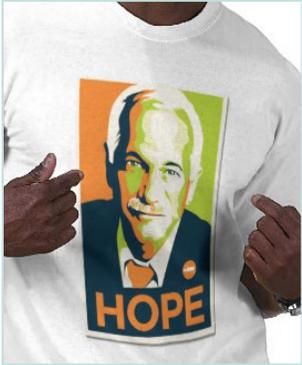
We need to rise above the din and ask: “What are we actually trying to do? Make ourselves feel better by doing something? Anything? Or are we actually trying to solve a problem?”

The major problem with using “applied hope” in the context of energy policy is that it encourages citizens to believe that there are simple solutions. If one adopts the false hope-filled rhetoric of people like Lovins, one might believe that renewable energy is abundant and easy to use or that fanciful solutions such as solar-powered airplanes will transport us en masse.

<sup>2</sup> [http://www.finestquotes.com/select\\_quote-category-Politics-page-1.htm](http://www.finestquotes.com/select_quote-category-Politics-page-1.htm).

<sup>3</sup> <http://www.quotegarden.com/hope.html>.

<sup>4</sup> <http://www.quotegarden.com/hope.html>.



Lovins's promotion of his hydrogen-fueled hypercar®<sup>5</sup> is one example of his unrealistically hopeful thinking. This futuristic automobile, presented to the public and policy-makers as a practical alternative to petroleum-fuelled vehicles, would be constructed of lightweight composite materials. It would carry cylinders of highly pressurized hydrogen gas, and its motive power would be provided by a hydrogen fuel cell of the type promoted by companies such as Ballard Power Systems.

While hydrogen at first glance appears to be a perfect vehicular fuel, given that it has no emissions other than water, it has serious practical limitations, including its low-energy density by volume. It also presents real difficulties in storage and transportation.

Hydrogen fuel's largest drawback, however, is the fact that it is not a source of primary energy—it is only an energy carrier. It does not naturally exist in nature and must be produced from an energy source, which today is typically natural gas. To produce industrial-scale levels of hydrogen for transport fuels to replace petroleum would be an undertaking of unprecedented scale. It would require a massive expansion of the nuclear power plant fleet to produce hydrogen via electrolysis of water. Ironically, Lovins is vehemently opposed to nuclear power.

In short, Lovins's hypercar® and the near-term hydrogen economy are pipedreams.

### HOPE-DRIVEN ENERGY POLICY

Hope-driven energy policy is all around us. The governments of Ontario, Germany, Spain, California and countless others have provided large financial incentives to develop their green energy industries and increase their use of intermittent renewable energy, despite mounting evidence that these initiatives are ineffective from a cost, operational and even emissions point of view.

For residents of the Greater Toronto Area, a monument to hope has become part of the Toronto skyline. The WindShare Ex Place wind turbine, on the Exhibition Place grounds near Lake Ontario, will never produce any meaningful amount of electricity. What it does do, for better, and likely worse, is to remind the general public that wind turbines exist. Citizens who "want to believe" will be continually encouraged by its presence. Jack Layton, a master of hopeful rhetoric and a disciple of Lovins, was one its key proponents.

In his 2009 book *Sustainable Energy - without the hot air*, Cambridge physics professor David J.C. MacKay comments on the tendency of citizens to believe that small changes to energy use can add up to a lot, and that "every little bit helps." His response: "If everyone does a little, we'll achieve only a little."<sup>6</sup>

MacKay notes that small individual contributions to energy efficiency, conservation and support of renewable energy make us feel good in that we are doing something. But when one analyzes it rationally, quantifies it, and uses the principles of applied science in the analysis, it doesn't add up to much.

<sup>5</sup> Hypercars®, hydrogen, and the automotive transition." Lovins, Amory and Cramer, David. *International Journal of Vehicle Design*, Vol 35, Nos 1/2, 2004.

<sup>6</sup> MacKay, John J.C., *Sustainable energy-without the hot air*. 2009. ISBN-10 0954452933. [www.withoutthehotair.com](http://www.withoutthehotair.com).

*“What are we actually trying to do? Make ourselves feel better by doing something? Anything? Or are we actually trying to solve a problem?”*

Using the United Kingdom as a model, MacKay quantifies all of society's energy uses and then lists all potential renewable energy sources. As a result, he shows conclusively that U.K. domestic renewable energy sources, even at any price, are insufficient to power the country. It is an enlightening and sobering read.

MacKay makes suggestions about how we might create a more energy sustainable world, including the increased use of electrified transportation, the possible use of nuclear power and some realistic ways to improve building heating. His principal conclusion is the requirement to quantify energy matters. As he writes, "...make sure it adds up!"

### **CANADA'S COMMITMENT TO KYOTO WAS BASED ON HOPE**

The climate change challenge we hear about in the media is really an energy challenge. Because the vast majority of the world's energy systems use carbon-based fuels, which emit CO<sub>2</sub>, considered to be an important greenhouse gas (GHG), any reduction in GHG emissions means a reduction in the use of carbon-based fuels. Essentially, the Kyoto Accord to reduce GHG emissions was all about reducing carbon based energy use.

Globe and Mail political columnist John Ibbitson, commenting on Canada's commitment to Kyoto last year, observed:

"The Liberals found themselves stuck with Draconian [GHG reduction] targets that, if met, would hobble oil sands production, hammer big industry in Ontario and send home-heating bills through the roof. Their solution was to study the issue. And study. I remember sitting through an interminable briefing in 2003, in which officials patiently explained how Canada would meet its Kyoto targets. The only problem was that there was this enormous gap, which was to be closed through 'future reductions.' It was like having a household budget in which Miscellaneous was bigger than Mortgage."<sup>7</sup>

In a case like this, where a large section of GHG emission reductions are referred to ambiguously as "future reductions," with no concrete system in place to achieve them, technologically or otherwise, how can the approach be called anything other than hope?

And clearly, energy policy informed or driven by hope does not lead to successful solutions. It leads to false starts and a waste of time and resources.

### **CONCLUSION**

We must encourage policy-makers to think critically about the promises made by persons who sell energy solutions based on "applied hope." Let us encourage them to ask the tough questions, to insist on quantification of information for comparative purposes, to seek out fact-based information and to use reason and experience when making decisions.

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<sup>7</sup> "Kyoto withdrawal shames us all." John Ibbitson. Globe and Mail, Dec. 13, 2011.

*"We must encourage policy-makers to think critically about the promises made by persons who sell energy solutions based on 'applied hope' "*