



Wind is one of the clean energy renewables, along with hydro and solar, that will meet growing electricity demand. ABB photo

# Canada's Economic-Energy Conundrum: EPIC's Contribution to a National Discussion

Dan Gagnier

*For five years, the Energy Policy Institute of Canada gathered expertise and research to help the country's decision leaders formulate a national energy strategy. Now chair of the International Institute for Sustainable Development, former EPIC president Dan Gagnier sheds light on what EPIC found, how global markets are shifting and what Canada can do to take the lead in energy transformation.*

On July 31 of this year, the Energy Policy Institute of Canada (EPIC), a not-for-profit policy think tank founded by traditional and renewable energy interests and other private sector CEOs, ceased to operate. The EPIC Report on Canada's Global Energy Leadership was delivered to governments in 2012. For some five years, experts from the energy industry and other sectors had directed research and exchanged non-competitive information on what we should do to have a viable energy strategy for this country.

The aim was to enhance our competitiveness in a fast changing geopolitical context, demonstrate environmental responsibility and create prosperity and growth. Before you, as a reader, assume it was self-serving, you should consider some of the key recommendations of the report. They included:

1. Major review and overhaul of federal/provincial regulatory systems
2. Move toward a national carbon pricing regime
3. Creation of innovative cluster partnerships and enhancement of the Scientific Research and Experimental Development (SRED) program
4. Enhancement of Canada's energy security through infrastructure investment, market diversification and technological leadership

**We have the natural resources and the technological resources to make a contribution if we can take the decisions in time to lead on energy transformation by demonstrating how to invest and increase the share of renewables; by using best standards for the safe and environmentally acceptable extraction, transportation and distribution of both fossil fuels and electricity.**

5. Promotion of energy literacy and conservation

Through 2011 to this July, EPIC worked with both the federal and provincial governments, sharing our efforts and answering questions on the benefits of taking a more directive approach to an energy strategy that would reflect jurisdictional prerogatives and regional realities. Political and private sector leadership was at the base of bringing about positive change.

Before we assess what has been achieved, we need to consider the energy demand, production and investment profile in 2013 and 2014.

The 2013 International Energy Agency (IEA) study provides a great overview. In its opening slide, the key determinants of change in the sector are clearly represented.

**T**he imperative for Canada in this fast changing situation is basically a call to action. We have the natural resources and the technological resources to make a contribution if we can take the decisions in time to lead on energy transformation by demonstrating how to invest and increase the share of renewables; by using best standards for the safe and environmentally acceptable extraction, transportation and distribution of both fossil fuels and electricity.

Within the Canadian context, we have demonstrated the ability not only to consult but to participate with communities, including aboriginal communities, in the development of energy projects.

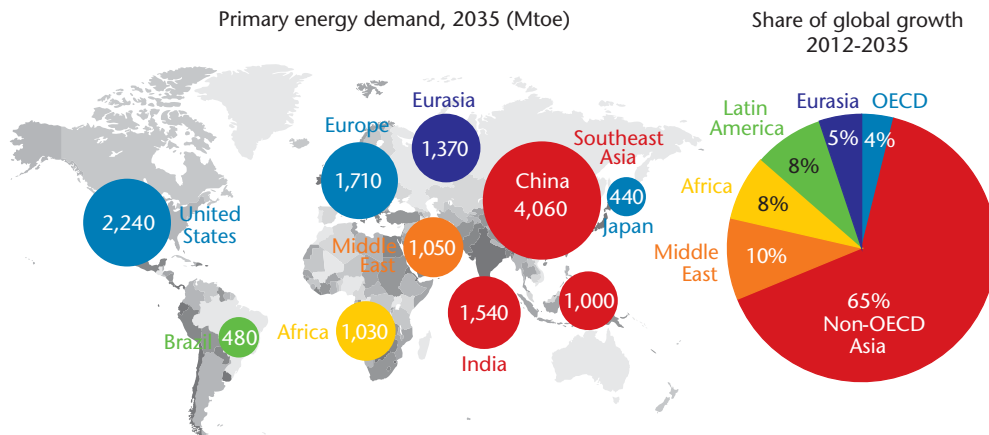
EPIC policy sessions included many conversations on what it would take to create the kind of collaborative economic and social partnerships that could lead to accelerated investments and realization of specific projects.

The one slide in the IEA study that captures the challenge is the projected growth in energy demand. Over the past 25 years, despite increased investments and efforts on renewables, their overall share has remained stable.

In power generation, the projections see China and India together building almost 40 per cent of the world's new capacity.

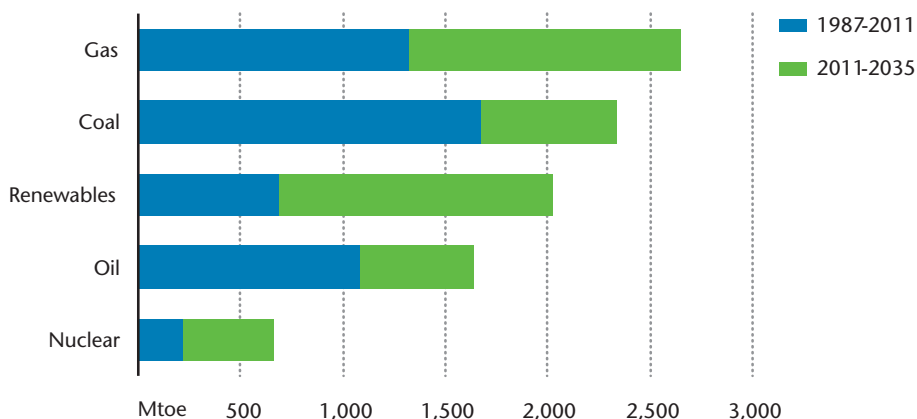
In short, our geopolitical situation

**FIGURE 1: The engine of energy demand growth moves to South Asia**



Source: IEA World Energy Outlook 2013

**FIGURE 2: Growth in total primary energy demand**



Source: IEA World Energy Outlook 2013

is being turned on its head with the USA projected to soon be the largest oil and gas producer on the globe, even going so far as to contemplate exporting energy to help European allies in the face of Russian aggression in the Ukraine. In the IEA's conclusion, we clearly see the impact of a fast changing world:

1. China, then India, drive the growing dominance of Asia in global energy demand and trade
2. Technology is opening up new oil resources, but the Middle East remains central to the longer-term outlook
3. Regional price gaps & concerns over competitiveness are here to stay, but there are ways to react—with efficiency first in line
4. The transition to a more efficient, low-carbon energy sector is more difficult in tough economic times, but no less urgent

#### What about Investments?

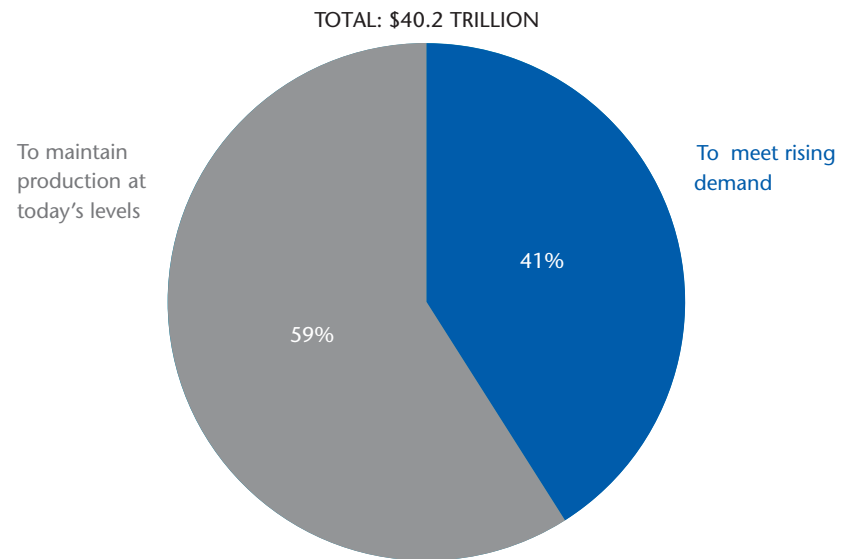
The WEIO (World Energy Outlook Conference) of 2014 again lists a reality outside our borders that we ignore at our own future economic and social peril:

1. Today's investments lock in patterns of consumption, fuel use and emissions long into the future
2. Capital costs to produce energy have doubled since 2000
3. Investment is surging to meet rising Asian demand, but shale in US and renewables in Europe also show dynamic growth
4. Investors are having difficulty navigating policy and market uncertainty
5. Geopolitical concerns are a reminder of risks to reliable supply
6. A disconnect exists between climate change goals and the necessary actions
7. High oil prices and persistent regional price variations for gas and power remain factors
8. Growing public pressure on energy and environmental issues

The investment flow required to meet future expected demand is eye popping:

The conference, after highlighting in-

FIGURE 3: Investment in energy supply, 2014-2035



Source: IEA World Energy Investment Outlook 2014

vestment estimates in the trillions for Europe, hundreds of billions for the LNG industry and over \$16 trillion for the electric power sector to 2035, characterized the challenges we face in merely getting things done:

1. The role of governments in energy markets is on the rise, while private investors are wary of political and regulatory risks
2. Energy investments are moving to areas with high up-front costs, complicating the task of securing finance
3. Without reform to power markets, the reliability of Europe's electricity supply is under threat
4. Investment in gas rises almost everywhere, but meeting future growth in oil demand depends heavily on the Middle East
6. Credible policy & pricing signals, plus new financing vehicles, are essential to re-direct capital flows towards a two degrees Celsius target

The last point is one where many climatologists and experts conclude that our ability to meet the two degrees Celsius target is defunct. We are into scenarios, regardless of whom you want to blame for climate change, of a 3-4.5 per cent increase in GHGs. Quite frankly we are beyond mitigation and need to

focus hard on adaptation.

The first, however, is illustrative of the ever more important role of governments at all levels in ensuring we have the policy and regulatory environments that encourage us to run faster and put the conditions in place that will meet the needs of an energy driven world.

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These points apply to Canada as well. We need to reform our electricity transportation systems, to invest in infrastructure to ensure safe and reliable delivery of energy of all kinds to Canadians but also to our export markets.

Political leadership is needed to get through the risk-opportunity scenarios going forward and to ensure we are well served by infrastructure rather than being constrained by inability to resolve issues. This means better interconnectivity on east-west electricity, tidewater ports for the export of our energy, and enhanced focus on green renewables with innovative and new financing mechanisms.

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Our mission in EPIC was to build an energy framework and strategy from the perspective of Canada's economic future. We aimed to engage organizations that cared about energy, about our environment and about employment and wealth generation in order that Canadians in all regions and from all backgrounds could afford the social programs, health care systems and educational excellence required in tomorrow's world.

We partially succeeded. Our first big success was simply achieving consen-

sus in a varied, highly competitive traditional and renewable energy sector that had as many varied views and opinions as any group of organizations can display.

The second was to engage in a discussion with both provincial and federal governments to secure a heightened awareness of the energy/economic and social issues generated by a fast changing reality. Both the provincial and territorial premiers at several meetings of the Council of the Federation, federal ministers and municipal leaders engaged in presentations and discussions around EPIC's five major areas of research and recommendations. The EPIC final report can be found on its web site ([www.canadasenergy.ca](http://www.canadasenergy.ca)).

Third, we made recommendations that were accepted and implemented by governments on regulatory reform. We were less successful with the market diversification recommendations, although the principle of opening to non-US markets has taken on added intensity as a result of European and

other conflicts. The US's energy independence has also served to reduce the intensity of American concern over security of supply issues. The political-environmental controversy over individual projects such as the Keystone XL Pipeline has also borne out the recommendations.

There is no shortage of expertise on the issues. The challenge on renewables, clean-tech, research and innovation will be to drive investment and meaningful change. We will need investors and new investment mechanisms. We will need to modernize, replace and build new infrastructure both for ourselves as a domestic market and for our export markets. That is Canada's clean energy challenge. **P**

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