

Jim Hume Memorial Student Essay Contest 2009 / 10

"What has to be done to ensure that Canada's economy benefits from the transition to a low carbon world?"

April 2010

Winning Essays:

- ▶ **Transforming the Grid: A Strategy for a Diversified Canadian Energy Policy.** *Stewart Prest, PhD Student, Department of Political Science, University of British Columbia.*
- ▶ **Running on Green: How to Ensure Canada's Success in the Low Carbon World.** *Olga Beznosova, PhD Candidate, Department of Political Science, University of British Columbia.*
- ▶ **Greener Pastures: Benefitting From a Low Carbon World.** *Connor Curson, University of Calgary, Political Science.*

ABOUT JIM HUME

James Borden (“Jim”) Hume was an ardent supporter of the Canada West Foundation. He served on the Foundation’s Board from 1995 until his death in 2009, and through the Kahanoff Foundation was involved in many of our major projects spanning natural capital, regional economic development, the nonprofit sector, and gambling.

He believed that a strong public policy voice from western Canada was of benefit to all Canadians, and that a prosperous West had both the opportunity and obligation for constructive, national leadership. Jim’s infectious optimism shaped his outlook on western Canada and his contributions to the Canada West Foundation.

The Canada West Foundation is now in its 4th year of running The Jim Hume Memorial Student Essay Contest, open to students attending a post-secondary institution in British Columbia, Alberta, Saskatchewan or Manitoba.

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Connor Curson,
University of Calgary,
Political Science.

First Place Essay (\$5,000)

TRANSFORMING THE GRID: A STRATEGY FOR A DIVERSIFIED CANADIAN ENERGY POLICY

by Stewart Prest

Traditionally, the pursuit of energy has also been the pursuit of growth and centralization. From Standard Oil to China's Three Gorges Dam, the story of energy has been one of ever larger production solutions combined with elaborate distribution systems. Such an approach was appropriate given the enormous economies of scale found in the 19th and 20th century energy sectors. However, it is in many ways unsuited to the requirements of a low carbon economy.

While there will always be a role for large, centralized power generation facilities, many modern, low carbon solutions require a different approach, one that depends on the principles of diversity and decentralization. Diversity in that no single source of power can hope to meet all of society's energy needs and decentralization in that many of the most promising sources of low carbon energy function best when relatively broadly distributed.¹

Indeed, we need to fundamentally rethink the traditional division between energy producers and consumers. The advance of micro-generation technologies such as roof-top solar, micro wind turbines and bio-energy now promise to turn every house, office tower and farm into a miniature power station capable of meeting a significant portion of the site's energy needs. Given the necessary government policies and



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¹ For one example of such an approach in action, see Chris Turner, *The Geography of Hope*, p. 32-33, 64-65.

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utilities infrastructure, consumers can even become producers, selling power to the grid for use elsewhere.

The question is how best to achieve such an outcome. Governments can play a tremendous role in shifting incentives by enabling Canadians to make environmentally responsible choices that are also fiscally responsible. I outline three such policies. None are revolutionary, but I believe that they have transformative potential when combined. Moreover, they are proven approaches, as each one has already been implemented successfully in Canada at a regional level, and all are scalable to a national level.

1. Utilities reform. In 2009, the Ontario Power Authority introduced a community-focused feed-in tariff program.² At its core, the program offers contracts to Ontario households, small businesses, Aboriginal groups, farmers and community organizations—as well as large scale commercial producers—for the production of renewable power at guaranteed prices. In addition to rate guarantees, the government provides a range of technical, bureaucratic, regulatory and financial support in order to encourage participation. It is a win-win-win scenario: the province gains additional power supply, producers are guaranteed a price that makes investment profitable, and the province reduces its carbon footprint.

Such a policy, applied on a sufficient scale, not only significantly increases the supply of low carbon energy, but also provides a spur to economic innovation by signalling to the private sector the existence of a stable market for small-scale renewable energy products, including solar panels, bio energy, and micro wind turbines. This increases competition for the supply of such products, driving down prices and attracting capital investment both for production and innovation. As a result of such investment and innovation, whether achieved purely through local resources or through collaboration with international leaders, Canadian-based firms serving the domestic market would be able to compete in global markets as well.

2. Tax reform. In 2008, the British Columbia legislature introduced a carbon tax. Though far from perfect, the tax has numerous strong features making it an excellent model for other jurisdictions to follow.

² Ontario Power Authority. "Feed-in Tariff Program." http://fit.powerauthority.on.ca/Page.asp?PageID=1115&BL_WebsiteID=19. Accessed 15 March 2010.

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First, it is comprehensive, as it targets virtually all types of carbon emissions. Second, it is gradual in its application, allowing households and businesses to plan future purchases over a number of years, thereby stabilizing expectations. Third, it is revenue neutral, thereby minimizing the macroeconomic disruption.³ A tax of this sort has the potential to change consumption habits, gradually transforming the economy in a way that encourages consumers and the private sector alike to embrace green technologies.

3. Green R&D. Another policy strategy involves funding research and development in a diverse range of green technologies through a combination of university grants, public-private partnerships and tax incentives. Regions that aggressively pursue innovative green technology businesses will be among the most successful in the coming decades. As networks of innovation coalesce around the successful regional hubs, early investments will pay off.⁴

If successful, such strategies will create positive externalities extending far beyond their immediate environmental impact. To cite just one example, a broadly distributed energy production regime promises to enhance our energy security, rendering the grid less vulnerable to catastrophic failure. As anyone who lived through the Northeast Blackout of 2003 knows, power is the life-blood of our society. With a diversified grid, areas with local production capacity would be able to continue to function even with a loss of capacity at a central production or transmission node.

In many ways, Canada is an energy superpower. It is the largest petroleum supplier to the US, and it produces nearly a quarter of the world's uranium supply. However, it is a vulnerable superpower. In particular, provinces, led by Alberta, have aggressively courted the oil and gas industry. While there likely will be a market for oil and gas for the foreseeable future, its potential for growth pales in comparison to green technology sectors. A concerted effort to create a diversified and decentralized energy grid in Canada would have a transformative effect on the country. It would reduce our carbon footprint, diversify our energy "portfolio" and spur the development of an internationally competitive domestic green technology sector. It is, I argue, the *sine qua non* of a comprehensive Canadian low carbon strategy.

3 British Columbia. "Backgrounder." http://www.bcbudget.gov.bc.ca/2008/backgrounders/backgrounder_carbon_tax.htm. Accessed 15 March 2010.

4 McKinsey and Company. "Mapping Innovation Clusters." http://whatmatters.mckinseydigital.com/flash/innovation_clusters/. Accessed 15 March 2010.

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Second Place Essay (\$3,000)

RUNNING ON GREEN: HOW TO ENSURE CANADA'S SUCCESS IN THE LOW CARBON WORLD

by *Olga Beznosova*

"Clean energy is this century's greenfield of opportunity... We can harness that potential to generate new wealth and new jobs in our communities while we lower greenhouse gas emissions within and beyond our borders." *BC Speech from the Throne, 9 February 2010*

"To truly transform our economy, protect our security and save our planet from the ravages of climate change we need to ultimately make clean, renewable energy the profitable kind of energy." *Barack Obama, Presidential Address to the Joint Session of Congress, 25 February 2009*

The idea that a clean and green economy is the next great opportunity has persuasively entered our collective psyche and manifested in climate change policies, media reports, public speeches, corporate environmental programs and private conversations. Although there is some opposition to environmental theories and policies, many are convinced that the fossil-fuel dependent world we know is about to change dramatically. In envisioning that the "green economy" is the "future," we ponder what it will look like and how we will prepare for it.



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I was struck by this idea while on a flight emitting tonnes of greenhouse gas. I looked around me to see what my fellow passengers were doing. A curious pattern emerged among the people sitting near me: a faculty member was developing a course syllabus on energy policies; a young man was reading an article on green energy technology in what looked like an industry magazine; and another person was carefully studying a government request for proposals on smart electric grid technologies. I suddenly realized that this IS the green economy. It is here, right now. It does not matter whether or not we want it— we have no choice. The only choice we have is to approach the green economy in a way which ensures that we are competitive in it.

To set Canada up for success in the low carbon economy we need a clear vision of where we want to be in 30-50 years. Canadian federal and provincial governments should work collaboratively on developing a clear and cohesive policy direction which ensures a “level playing field” both domestically and internationally, provides market players with certainty and creates conditions which support clean energy entrepreneurs (e.g., tax incentives similar to the US federal program) (Globe Foundation 2010). We should encourage investment in R&D related to clean energy production and transmission as well as new building and transportation technologies, which will create jobs and provide long-term economic benefits (Pembina Institute 2009). We need to ensure that Canadian clean energy products reach their markets, advocate for favourable trade policies and construct more electric transmission lines (Western Governors’ Association 2009). In addition, investment in human capital and education is essential to nurturing entrepreneurial and visionary talents who are prepared to seize the opportunities of tomorrow rather than hanging on to those of yesterday—leaders who can ensure that Canada gains competitive advantage in the green economy.

However, the achievement of these goals is challenged not only by entrenched ways of thinking (i.e., we stick to what is familiar and are afraid of change), but also by the tendency to protect established industries (Cuddy 2010, Sierra Club 2010). It is often argued that environmental problems can be dealt with by voluntary carbon reductions and certain mitigation measures such as carbon capture and sequestration which will make these industries “greener.” This may be true in the short-term, but many environmentalists see such “solutions” as band-aid policies in circumstances calling for a complete paradigm shift (Godoy 2009). Further, serving particularistic interests and introducing temporary fixes

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is dangerous because it could lead to the establishment of a patchwork, sporadic, and inefficient economic policy framework.

Clearly, the global challenge of climate change cannot be resolved within the boundaries or economic policies of one country. When we seek to replace fossil energy with renewable sources, new issues and opportunities emerge. Some geographic areas may be especially rich in renewable resources, while others may have higher demands due to fuel switching to achieve carbon emission reductions (Western Governors' Association 2009). Coordinated regional and international policy approaches will be essential to addressing this challenge. At the same, it is a challenge for international initiatives to coordinate regional entities that represent a diversity of interests and constituents and spur them to share in a concerted effort. Isolated regional and jurisdictional policies could also impede the success of clean energy projects across borders.

Ultimately, leadership and thoughtful participation in regional and international energy policy efforts is necessary to the development of economic policies that are conducive to success for Canadian green energy developers. The government should ensure that Canada's interests and positions are represented and that Canada's resources are recognized as viable sources of renewable energy in the regional and international markets. Policymakers, industrial actors, and environmentalists can achieve this goal by collaborating in the realization of a shared vision.

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Third Place Essay (\$2,000)

GREENER PASTURES: BENEFITTING FROM A LOW CARBON WORLD

by Connor Curson

Given global concern for carbon-induced climate change, economic growth and the jobs of tomorrow could be found in a green economy fueled by renewable energy. That said, the desire to rebound from the recent economic recession and the general apathy many nations expressed toward reducing carbon emissions at the recent Copenhagen Summit seem to indicate that it will be business as usual for Canada's dependence on producing and using non-renewable energy.

It may seem that under these conditions pursuing a low carbon economic agenda could make Canada *less* competitive in global markets. Yet while resource extraction, especially oil and gas extraction, is important to Canada's current and future economies, stifling new opportunities would be a mistake. A future global shift to a low carbon world will make leaders in green energy and technology global economic winners. Becoming such a leader will involve embracing the potential of a low carbon world sooner rather than later, far-sighted leadership and wise investments to make that potential a reality.

Green jobs and a low carbon world are often thought of in environmental terms—terms that many people will push aside in favour of economic considerations. But while a low carbon world could benefit the environment, this does not have to be the motivator to get Canadians



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to focus on the issue. Instead the focus should be on the new economic opportunities that a low carbon world presents.

The fact is that while oil and gas have brought great economic growth in the past two decades, much of this growth has been from the development of new projects and spinoff effects, not the actual sale of oil and gas itself.¹ The danger inherent in this was recently demonstrated when low oil prices and a recessionary investment climate resulted in a 33% drop in capital investment in the Canadian oil and gas sector from 2008 to 2009 and a subsequent drop in job growth.² Renewed development in Alberta and Saskatchewan, and potential development of Canada's North, could sustain the workforce for the short-term, but eventually job growth in non-renewable energy will shrink. High levels of capital investment and their spinoff jobs are unsustainable. Therefore it is important to diversify the economy, and a green economy built around renewable energy is one way to achieve this diversification.

Luckily western Canada is in a good position to diversify. This is largely due to the fact that the main short-term economic benefit of such large oil and gas deposits is wealth generation. But like all wealth generation, only wise investment will garner long-term benefits. Large investment in education, technology and infrastructure would be obvious areas in which to funnel this wealth. Most importantly, with the world becoming more competitive due to global markets, Canada needs to invest in education. We cannot continue to be "drawers of water and hewers of wood" in today's global markets; real wealth generation lies in a highly educated workforce. Leading the world as a producer of green technologies provides high-paying jobs in management, research,

1 Analysis by the Conference Board of Canada examining the impact of new development in natural gas and conventional oil on real GDP and employment found that a \$1-billion increase in investment would boost Alberta's real GDP by an estimated 0.6% in the first year, and raise average employment by almost 12,000. The bulk of that job creation occurs in the service sector because of the indirect and induced effects of new investment and production. In subsequent years, after capital investment is sunk, that same investment accounts for only about a 0.1% boost in Alberta's real GDP from the increased production of oil and gas. See Alberta Department of Energy, Project Committee Final Technical Report on Alberta's Natural Gas and Conventional Oil Investment Competitiveness to the Alberta Department of Energy. (February 16, 2010): 15. Available: <http://www.energy.alberta.ca/Org/pdfs/CRSierraTechReport.pdf>. Accessed: March 5, 2010.

2 Statistics Canada, Private and Public Investment in Canada Intentions 2010. (March 1, 2010): 9. Available: <http://www.statcan.gc.ca/pub/61-205-x/61-205-x2010000-eng.pdf>. Accessed: March 5, 2010.

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technology development, engineering and technical service provision. We need educated Canadians to fill those roles.

Canada must also take a broad approach to investment in technology. First, we should build on current strengths by investing in developing technologies that make current energy sources more efficient and productive. Secondly, investing in wind, solar and bio-fuels technology development early on in the transition to a low carbon world could position Canada as a global leader in these areas. Thirdly, Canada already has a strong history of nuclear energy development, and some of the world's largest uranium deposits. While nuclear energy is still a contentious low carbon solution, many nations are considering it as an energy alternative to traditional oil and gas. This again presents Canada with an opportunity to get ahead of the curve and become a global leader in this area, potentially providing many more high-end jobs.

Of course, education and investment are not the only steps needed for success; the transition to a low carbon world will also require strong and farsighted leadership. Governments cannot sit in a reactive cycle of short-term policy response and dependence on traditional economic drivers. As we have seen with auto manufacturing, shifting to nations with cheaper labour, the world market is a competitive place. If Canada wants to remain atop the economic ladder with a high standard of living for its citizens, we must secure leadership roles and the high paying jobs that come with those roles.

To start with, the federal government must carefully consider any environmental or energy policies. The fact is, building a strong future depends on the wealth our current system generates. Since the provinces have jurisdiction over non-renewable natural resources, the production of electrical energy and education, the federal government must work with the provinces, not constrain them. In this regard, the federal government needs to provide inducements that motivate economic diversification. We also need policies that welcome foreign investment for future projects, but limit foreign ownership and control that strips away high-end management and R&D jobs. Additionally, feed-in-tariff programs for green energy producers, such as Ontario's Green Energy Act, could help stimulate growth in these industries and create markets. Investment in education and research in these areas could lead to technologies and innovations that also stimulate growth.

Canada is in a unique position in that it possesses the raw commodities to generate great wealth over the next few decades, but it must look beyond this wealth to investment in our future. Canada must have the

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vision to see a low carbon world as an opportunity, not an obstacle. Environmental considerations aside, little harm could come from making existing energy production more efficient and productive, and beyond that there is potential for huge gains in developing new energy technologies. Canada should embrace the potential of a low carbon world and use our current wealth to stay ahead of the curve of global competition.

About the Canada West Foundation

The Canada West Foundation is the only think tank dedicated to being the objective, nonpartisan voice for issues of vital concern to western Canadians. Through our research and commentary, we contribute to better government decisions and a stronger Canadian economy.

The West is in. And the Canada West Foundation helped put it there. Over the past 40 years, our research and commentary has improved government policy and decisionmaking. The West has been a part of the national agenda and has been at the forefront of the most important debates that have shaped our country.

We give the people of British Columbia, Alberta, Saskatchewan and Manitoba a voice. A voice for their dreams, interests and frustrations. As westerners, we understand the people and the places of the West. We know our history and how it influences our future. Whether it is the economy, environment, education, healthcare, taxes, energy, social services, urban issues, provincial-federal relations or any other policy area of importance to the West, we have researched it, commented on it, stimulated debate about it and recommended practical options for improving the policy response.

The Canada West Foundation is known and respected for its independence. No one tells us what to say, even though we are engaged by all levels of government, all types of companies, associations and philanthropic foundations. As a registered Canadian charitable organization (#11882 8698 RR 0001), donations ensure our research is available and free, so everyone can benefit.

Our credentials are impressive. We have the policy and economic experts you need. Our Board of Directors represent the who's who of the four western provinces. Our list of projects is long. We're just like the West. Absolutely essential. Absolutely part of Canada's success.

More information can be found at www.cwf.ca.



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