

# CCPA-NOVA SCOTIA INFOCUS

## Energy Cost Politics and the Environment in Nova Scotia

Reflections on the Government's Backtrack on Mercury Emissions

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On July 22<sup>nd</sup>, 2010, the Government of Nova Scotia announced that it would delay the mercury reduction standards for the provincial power utility, Nova Scotia Power. The Premier stated that he made this decision because the projected rate increase, which the utility said was necessary to meet the standard, “would have a devastating impact” on Nova Scotians.<sup>1</sup>

An op-ed written by Nova Scotia Energy Minister Bill Estabrooks later argued that the decision struck a balance between “affordability and the environment”.<sup>2</sup> In the media the Minister stated: “I make no apologies...I’ll put people first and that’s what we did in this case in the short term.”<sup>3</sup>

The Minister’s statements show that a trade-off existed, in his mind, between “people” and the “environment”. Advocates of sustainable development have been striving to eliminate these types of trade-offs for decades.

In Nova Scotia the government’s environmental discourse of “sustainable prosperity” emphasizes that the province’s economic future is deeply coupled with the task of creating a cleaner environment.<sup>4</sup> The province’s *Environmental Goals and Sustainable Prosperity Act* seeks to “demonstrate international leadership by having one of the cleanest and most sustainable environments in the world by the year 2020.”<sup>5</sup>

The decision to relax an environmental target is confounding for a province that has endorsed this progressive environmental and economic vision, and from a new government that received accolades for its green energy initiatives. Nova Scotia is the first jurisdiction in Canada to place caps on Greenhouse Gas (GHG) emissions within its electricity sector and it has recently launched a strategy focused on making renewable energy a strategic sector for development.<sup>6</sup>



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However, it is also not surprising that Premier Dexter's government would balk at the prospect of higher energy prices for consumers. Before the election, the NDP advocated sales tax cuts to reduce energy prices.<sup>7</sup> The NDP also issued a press release during the last election campaign arguing against a rate increase to fund energy efficiency programs.<sup>8</sup>

The relaxation of the mercury standards shows that this government has a tendency to support low energy prices for consumers at the expense of environmental and health initiatives. When faced with an increase in electricity rates, the government's knee-jerk reaction was to push environmental standards off into the future. If this foreshadows the dominant tendency of this government, Nova Scotia's emerging green energy agenda is in jeopardy.

Is this conflict between energy consumers and the environment inevitable? If the issue at hand is real energy *affordability* and accessibility for Nova Scotians and not the dubious and opportunistic politics of energy *price* increases, we can implement policy solutions that ensure energy affordability while accelerating the transition to a cleaner, lower-carbon economy. Practicing a new form of energy cost politics is the key to avoiding undesirable tensions and trade-offs.

### Implications of Mercury Regulation Changes

The 2010 mercury regulation stipulates emission reductions from a cap of 168 kilograms per year (kg/yr) to 65 kg/yr. Nova Scotia agreed to this cap in 2006 in cooperation with other provinces as part of the *Canada Wide Standards* for mercury pollution from coal-fired power plants.<sup>9</sup> It appears that other provinces with compliance obligations will meet their goals.<sup>10</sup>

In July, the government decided to move the 65 kg/yr target from 2010 to 2014. It also announced a new cap of 35 kg/yr in 2020.<sup>11</sup> Under the new plan, Nova Scotia Power will be required

to make annual reductions from 2010 to 2014 and to make-up for the emissions over 65 kg/yr by overshooting the 65 kg/yr cap between 2014 and 2019.<sup>12</sup> Thus the cumulative amount of emissions up to 2019 should be the same as a 65 kg/yr cap starting in 2010. The new plan trades more mercury pollution in the short-term for deeper cuts in the latter part of the decade.<sup>13</sup> Environmental organizations in the province condemned the announcement and emphasized the costs of mercury emissions to human health.<sup>14</sup>

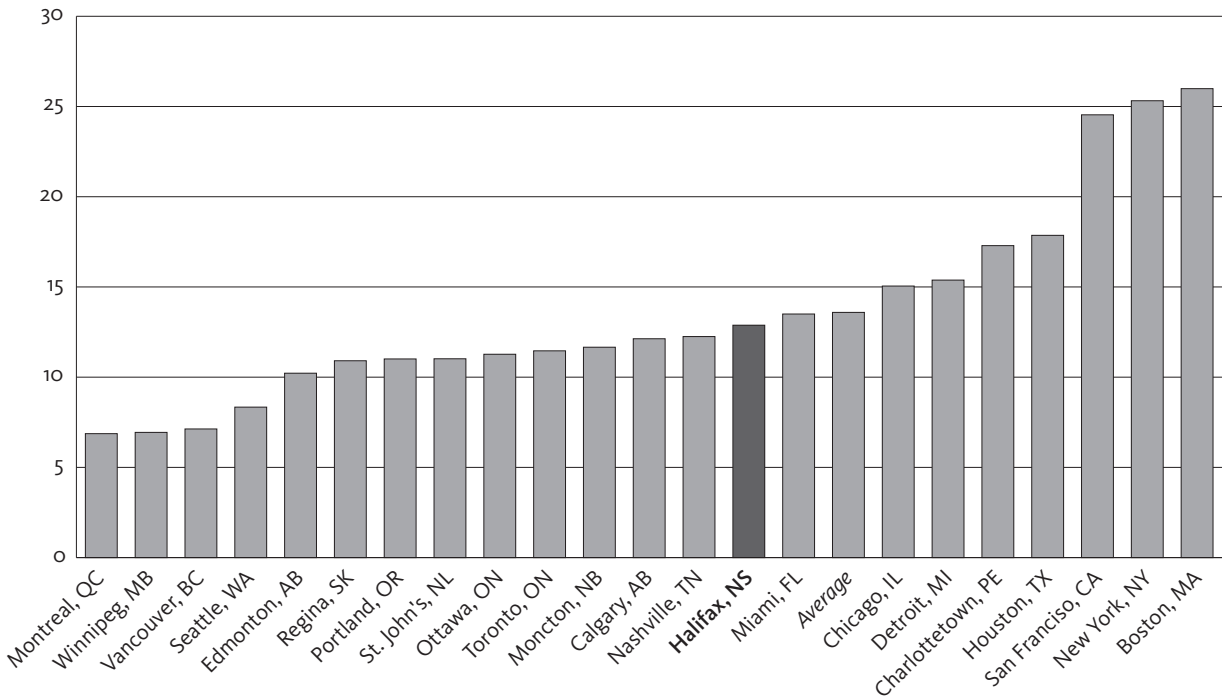
The government has provided little assurance that these new long-term mercury reduction goals are credible. Even though Nova Scotia made a commitment to the other provinces to reduce emissions in 2010, it changed its regulation at the last minute. What is to prevent the same thing from happening in the future?

In 2007, all parties in the legislature supported the passage of the *Environmental Goals and Sustainable Prosperity Act*, which entrenched a number of environmental targets in legislation, including targets for renewable energy and reductions in greenhouse gas emissions. The Act states that "mercury emissions will be reduced by seventy per cent by the year 2010 relative to pre-2001 levels", which is consistent with a 65 kg/yr target in 2010.<sup>15</sup> This Act was supposed to signal that political leaders were affirming their commitment to environmental goals by establishing them within legislation, as part of a broader "sustainable prosperity" agenda.

When the government chose to delay the emissions target in July, it did not consult the *Roundtable on Environment and Sustainable Prosperity* tasked with helping the government meet its environmental goals.<sup>16</sup> Instead, the Energy Minister held a quick meeting with some business representatives and other stakeholders before announcing the decision.<sup>17</sup>

The broader problem is that the government undermines all of the goals contained within the Act when it backtracks on one of them via a rather loose consultation process. What is to

FIGURE 1 North American Electricity Prices (residential prices, Can cents/kwh)



SOURCE Hydro Quebec. 2009 Comparison of Electricity Prices in Major North American Cities, Rates in Effect April 1. Pg. 20.

prevent the government from backtracking on greenhouse gas reduction goals and renewable energy goals in the future?

The lesson here is that future targets (even when contained in legislation with associated regulations) don't amount to much unless activities take place in the interim that help meet these goals in a manner that is politically acceptable. Obviously, this government did not find meeting the 2010 mercury goal to be politically realistic. Nova Scotia's particular brand of energy cost politics is the prime stumbling block.

### Energy Cost Politics

Politicians have always had to tread carefully when it comes to electricity rate increases in the province. Political blogger Parker Donham says that "Power rates have been the third rail of

Nova Scotia politics ever since they caused the defeat of Gerald Regan's government in 1978".<sup>18</sup>

Figure 1 shows that Nova Scotians face relatively higher electric rates than most other Canadian jurisdictions (except Charlottetown, PEI). However, Nova Scotia rates are below the average of the North American cities sampled.<sup>19</sup>

Claiming that the mercury regulations would impose significant new costs, Nova Scotia Power proposed to increase rates by 12% for residential customers and 18% for industrial customers in 2011. After the government changed the mercury regulations NSP changed its rate increase application to 6.5% and 11.3% respectively.<sup>20</sup> This will be the sixth rate increase in Nova Scotia since 2002.<sup>21</sup>

Rate increases can have serious social and economic impacts. Anti-poverty organizations have highlighted how low income Nova Scotians

have foregone food and been forced into homelessness to pay electricity bills.<sup>22</sup> Electricity rates are also an issue for energy-intensive industries in the province. Consider that just two pulp and paper plants consume about 20% of Nova Scotia's electricity sales.<sup>23</sup>

Whenever Nova Scotia Power (the province's privatized, vertically integrated utility) announces a new rate increase extensive media coverage and angry letters to the editor are sure to follow. In recent years, Nova Scotians have repeated this ritual on an almost annual basis. It feels like something has gone awry. The pattern of rate increase after rate increase is increasing social unrest.

The electric utility system is encountering a market and policy environment that it wasn't set up to handle. The original goal of large, centralized utility systems was to *increase* the quantity of energy consumed and to *decrease* price by reaping economies of scale. Utility managers even promoted electricity consumption in residential households to increase demand during off-peak periods. Then nuclear technology created the false promise of delivering the ultimate in economies of scale and lower prices, making electricity "too cheap to meter".<sup>24</sup>

The power system's large fixed costs made utilities natural monopolies. Policy makers established regulatory boards to check their monopoly power and ensure prices were no higher than actual costs (plus profit). In this centralized energy paradigm, citizens are passive consumers that the regulators are supposed to protect from unjustified price increases.

Nova Scotia did not experiment in the same manner as other jurisdictions with "deregulation" during the 1990s.<sup>25</sup> For better or worse, the dominant electricity paradigm in Nova Scotia has remained relatively stable over the last number of decades.

If coal prices escalate and society decides to tackle environmental problems the increases in rates are unlikely to halt. The province's electric-

ity plan anticipates that coal prices will trend upward and it highlights renewable energy as a way to provide "stable" electricity rates in the future.<sup>26</sup> This is a rational approach. Nevertheless, long-term rationality does not necessarily win out over short-term expediency. The political problem is that deliberate policy action must increase rates in the short-term to make investments in renewable energy, energy efficiency and to restructure the transmission and distribution systems. The more radical energy transitions required to cut greenhouse gas emissions by enough to avoid dangerous climate change will require even larger investments.<sup>27</sup>

Also, if it is the case that rates are likely to increase in almost all future scenarios, and if households, as well as businesses, are actually having trouble dealing with energy costs as it is, isn't it time for a new discussion about energy affordability in the future?

#### Real Affordability: Energy Cost Security vs. Energy Prices

The historic remnants of a utility system whose purpose was to deliver energy to passive consumers leaves us fixated on energy prices. But of course, energy prices are only one component of consumer energy costs. Our energy bills are determined by both price and how much energy we use; including the energy we waste. Energy bills themselves only become unmanageable when they are too high relative to the income of a household or business.

The concept of "energy burden" provides a full accounting of energy affordability or energy costs. The energy burden measures the percentage of a household's income spent on energy services. Even if prices increase, the energy burden equation shows that it is possible to maintain affordability by changing the other terms. Energy efficiency measures can reduce the quantity of energy consumed. A variety of policy measures such as decreasing income inequality,

increasing social assistance and promoting economic development (this includes green energy strategies) can also increase income.

Individuals in energy poverty face energy burdens that are too high. Spending more than 6% of household income on electricity has been highlighted as an unsustainable energy burden based on targeting no more than 30% of income spent on shelter costs and no more than 20% of these costs spent on electricity.<sup>28</sup> The UK government's energy poverty plan defines 10% of income as an unacceptable energy burden.<sup>29</sup>

Policies that focus on maintaining acceptable energy burdens by focusing on prices tend to create undesirable trade-offs between energy costs and the environment (e.g. relaxing air emission standards).

It is very difficult for politicians to propose policies that would result in higher energy prices without offering anything in return to deliver social security for households with respect to their energy costs. But our current obsession with energy prices can be traded in for energy affordability policies focused on reducing the quantity of energy consumed and providing income generating opportunities. These policies can actually help reinforce environmental transitions by encouraging energy efficiency, renewable energy production and wider eco-industrial transitions.

The challenge with the latter approach is that it requires a new way of thinking and a political culture focused less on energy price and more on energy costs or actual energy affordability. Political leaders and the public would have to strike a new *social bargain* that would work towards providing universal access to green energy cost savings opportunities. This requires us to take a second look at existing green energy policies with regard to energy affordability and social security, and not just environmental goals in isolation.

### Energy Burden

Energy burden measures how much of a household's income is spent on energy services:

$$\text{Energy Burden} = \frac{\text{Price} \times \text{Quantity Consumed}}{\text{Income}}$$

### Energy Efficiency

The soon to be created *Efficiency Nova Scotia* agency is expected to operate an energy efficiency program on par with the most advanced and ambitious programs in North America.<sup>30</sup> At least that is the current plan.

Energy efficiency is a cost-effective energy resource because saving kilowatt hours is cheaper than having to produce them by building power plants and burning fuels.<sup>31</sup> Paying for energy efficiency programs through power rates reduces the future costs of the entire electricity system. This means less money going out of Nova Scotians' pockets to provide revenues for Nova Scotia Power.<sup>32</sup>

Utility board regulators and policy makers in Nova Scotia now accept energy efficiency as a cost-effective way to manage the electricity system and to reduce greenhouse gas emissions and other forms of pollution.

The other benefit of energy efficiency is that it actually reduces the quantity of energy consumed by those households and businesses that participate in programs aimed at increasing the efficiency of heating systems, lighting, appliances, equipment and industrial operations. This makes energy efficiency a powerful and direct method of reducing energy burdens, but these opportunities are not altogether publicly accessible unless they are able to service a wide spectrum of sectors and communities.

Since these programs give households a direct method of controlling their energy burdens, providing equitable access to them is a social



objective that can exist alongside the ecological objective of reducing pollution and the economic objective of lowering electricity system costs. These objectives can reinforce one another and increase political support for energy efficiency programs. Ensuring that everyone has the ability to participate in efficiency programs is a necessary component of a social bargain that seeks to ensure energy affordability in a future with higher electricity rates.

But these different objectives pull program administrators in different directions since energy savings can't be found as easily or as cost-effectively in all sectors and communities. The issue of equitable access is especially important for low-income households. These households cannot afford to share the costs of energy upgrades with the administering agency. If the sole objective of energy efficiency policies is to find the cheapest way to encourage energy savings in the short term, programs targeting low income households will not be a priority.

During a consultative process, experts and stakeholders proposed "equity targets" to ensure that the province's efficiency agency properly designs and funds programs for groups that could otherwise be excluded.<sup>33</sup> The low income target would require *Efficiency Nova Scotia* to spend a minimum amount (e.g. 15%) of its overall budget on low-income households.<sup>34</sup> A recommendation to make "special provisions for those on low income", including minimum spending targets were outlined in a final report to government.<sup>35</sup>

However, it is unclear if this recommendation will ever be implemented, since the government failed to include these equity objectives within the subsequent *Efficiency Nova Scotia Corporation Act*. That leaves their implementation up to the Utility Board, which has previously ruled that it cannot consider special programs for low-income consumers.<sup>36</sup>

If the government fails to amend the *Public Utilities Act* or the *Efficiency Nova Scotia Corporation Act* low-income Nova Scotians could

have little opportunity to reduce their energy burdens through energy efficiency. This is most unfortunate since low-income organizations were important supporters of the extra charge on electric rates to fund efficiency programs. What they expected in return was a guarantee of equitable service provision.<sup>37</sup> The political bargain that stakeholders struck to help the environment and give energy consumers the security they needed to support investments in efficiency has been broken (or at least delayed).

Energy efficiency is not only a means to reduce GHG emissions and reduce costs within the entire electricity system. We can also consider it as a new social program for a low-carbon future, since it is an effective way to reduce energy burdens without relying on lower prices. Unfortunately, the habit of thought that focuses on energy prices instead of real energy affordability leads policy makers to ignore and neglect the importance of providing universal access to energy efficiency services.

## Renewable Energy

The province's renewable electricity plan describes how renewable energy stabilizes the costs of the electricity system. Renewable energy also reduces GHG emissions and creates jobs associated with manufacturing, installation and maintenance.

Renewable energy can also play a role in redefining energy cost politics within the province. It has the potential to turn the energy cost equation on its head since many consumers could transform into revenue-earning renewable energy producers. While it is difficult for a large number of citizens to hold a significant ownership stake in coal-fired power plants, citizens can participate in community wind co-operatives or put solar panels on their property. Citizens can reduce their energy cost burdens by becoming mini power utilities. Households will increase their incomes by participating in renewable energy generation projects and/or directly offset

their bills as their meters run backwards. In the process, citizens' political and economic interests will shift from those of passive consumers to those of energy generators.

Like energy efficiency we can think of renewable energy generation as not only a way to reduce greenhouse gas emissions and provide electric system benefits, but also as a means of providing energy cost security for households. To do this we must consider how we can broaden and equalize participation in renewable energy generation opportunities.

The province's announcement of a community feed-in tariff (FIT) shows potential to include many more Nova Scotians in renewable energy opportunities.<sup>38</sup> Feed-in tariffs establish fixed prices for renewable energy generators based upon their cost of generation, plus a reasonable rate of return. FITs promote community-based renewable energy projects because the administration of generation contracts is simplified and the price certainty facilitates access to capital.<sup>39</sup>

North American FIT expert Paul Gipe explains that "Feed-in tariffs work because they are more equitable than other policies. They enable everyone — including homeowners, farmers, co-operatives, and businesses large and small — to profit from renewable energy."<sup>40</sup>

The design details of the FIT program will determine the inclusiveness of renewable energy generation opportunities. The ability for generators to connect to the distribution and transmission grid will be important since, in some cases, the utility will need to expand the grid to bring new generators online.

Another way to broaden participation in renewable energy opportunities is to promote a diversity of technologies since different sectors and communities will have different renewable energy generation options. For example, wind and bio-gas opportunities will exist for many rural communities, but they are unlikely to exist for urban businesses and residents.

The potential inclusion of solar electric technologies in a FIT demonstrates the difference between lowering energy prices and contributing to energy cost security by developing renewable energy. Solar electric technologies have high costs per kilowatt hour of electricity<sup>41</sup>, yet they are also technologies with near universal applicability. Including solar in a FIT would raise the electric rates<sup>42</sup>, but it would also open up renewable energy generation opportunities to a host of new users.

### An Energy Cost Social Safety Net

A social safety net to ensure against unsustainable energy burdens is required for a number of reasons. First, it will catch those who might fall between the cracks because of low-income and/or due to time lags in energy efficiency and renewable energy development. Second, it provides a political guarantee to all citizens that higher electricity rates will not result in energy poverty.

The key to avoiding environment and energy cost trade-offs is to provide social security against energy poverty without relying on the blunt instrument of low energy prices. The *Universal Service Program* proposed by Roger Colton before Nova Scotia's Utility and Review Board is an elegant solution consistent with this approach.<sup>43</sup>

Maintaining appropriate energy burdens is the program's prime objective. The key component of the program is a credit on bills to bring low-income households back under an energy burden threshold.<sup>44</sup> For example, if a household spends 15% of its annual income on electricity an on-bill credit will reduce its energy costs to 6% of its income.<sup>45</sup>

A benefit of this approach is that the credit will adjust itself in accordance with energy efficiency measures to reduce the quantity of energy wasted and/or policies to increase the incomes of the energy poor. One way to reduce the costs of the social safety net program is to

target households with high energy burdens for efficiency improvements.

The program also provides a powerful conservation incentive by fixing the amount of the credit for a certain period.<sup>46</sup> If a household reduces energy consumption, they will keep receiving the fixed credit as a one-time bonus and if they increase energy consumption, they will not immediately receive a credit increase.

Like all of the other initiatives mentioned, ratepayers will pay for this program and thus it might increase electric rates.<sup>47</sup> However, it would also quite effectively provide universal security against energy poverty.

### Industry Productivity and Competitiveness

Energy affordability policies aim to reduce the social insecurity of households concerned about access to an essential service. For the energy poor, energy affordability can become a health and safety issue; choosing between heating or eating, medication or lights.<sup>48</sup>

For the industrial sector, energy cost issues more directly relate to productivity and competitiveness objectives. Business energy cost issues are also very political. Business pressure appears to have greatly influenced the government's decision to relax mercury emissions standards.<sup>49</sup>

Keeping prices low for business is unlikely to improve Nova Scotia's productivity and economic performance. "Policies that convey static, short-term cost advantages but that unconsciously undermine innovation and dynamism represent the most common and most profound error in government industrial policy", says renowned business competition expert Michael Porter.<sup>50</sup>

Governments that give into business lobbying for short-term cost relief entrench a conservatism that hampers innovation. The Nova Scotia government's quick backtrack has signalled to the business sector that environmental initiatives that could result in rate increases are easily stopped with some lobbying and public rela-

tions. This government's energy policy Achilles heel is their willingness to capitulate in the face of rate increases. They have now fully exposed their vulnerability. Instead of following a strategy of transformation and innovation, the business sector might opt for political strategies that will redistribute benefits to themselves at the expense of environmental improvements.

The state of affairs should underline the urgent need to enhance the Nova Scotia business sector's capacity to transform and adapt to an economy with higher energy prices.

The business sector has the potential to produce some of the most dramatic energy savings and transformations of energy systems. This potential exists because successful businesses restructure themselves and engage in innovative activities. They find new markets, produce new products and reform internal processes. However, to harness this innovative capability, and to push it in a greener and less energy intensive direction, businesses need to anticipate a world with higher energy costs and search for new opportunities within green technological systems.

Governments can encourage environmentally-friendly innovation by promoting the expectation of a lower carbon, cleaner economy in the future. This means standing firm with respect to environmental commitments in the face of higher energy prices. In addition, the government can encourage both large and small businesses to re-strategize by facilitating access to new networks and new types of knowledge.

*Efficiency Nova Scotia* will encourage incremental changes along existing production processes and it will take advantage of opportunities for large energy savings when businesses change product lines and make capital investments. But a different policy is required to encourage the development of more fundamental, systemic changes of business energy systems. Government economic development initiatives could offer to share the costs of consultants with particular eco-industrial expertise within particu-



lar firms, sectors or combinations of firms and sectors. This would initiate planning processes to explore new market opportunities; new linkages with other industries to promote industrial symbiosis of energy and waste flows; new research and development priorities; and new forms of business organization. Government could then offer support for the implementation of these strategic plans by developing capital-financing arrangements, prioritizing local-green industries in procurement practices, and by supporting new product and process experiments.<sup>51</sup>

The government must send a message to industries that they have to re-tool processes and products as part of developing different strategies to prepare for the future. If this fails to be an immediate priority, the same industries that lobbied for lower environmental standards are likely to fall back on repeating their requests in the future.

### A New Energy Cost Politics

The current government is implementing many energy efficiency and renewable energy policies. If they consider the social aspects of these policies, they could help alleviate energy costs via many of the non-price methods discussed in this paper. Specific initiatives on energy poverty and more aggressive policies on industrial eco-restructuring have yet to be implemented. But, even the initiatives and plans already announced are in jeopardy if Nova Scotia's energy cost politics remains laden with the traditional tendency to fixate on energy prices instead of real energy affordability.

The idea that citizens have a "right" to low energy prices is deeply ingrained within the present political culture. This stems from the mass consumption paradigm that took hold in the 20<sup>th</sup> century.<sup>52</sup> At that time, the power industry, government, and energy consumers struck a particular (implicit) social bargain. The power industry would exploit economies of scale and

deliver universal access to electricity, and the government would protect consumers against the monopoly power of utilities by keeping energy prices low.

The old social bargain involving low energy prices and centralized energy systems is broken. Governments concerned about energy price increases can only postpone them until after the next election. Those governments that initiate some limited reprieve from higher prices for consumers likely do so at the expense of environmental progress.

While governments, industry and citizens have, by and large, endorsed a green energy agenda, we are still stuck within an old form of energy cost politics. The Nova Scotia government's reaction to the potential rate increases due to mercury regulations shows that human health and the environment can be the causality of this mismatch.

The government might have thought that it would be better to spend its limited political capital on investments in the transmission system, renewables and energy efficiency. Yet they said little about preventing such trade-offs from occurring again. The government made no moves to change the nature of the energy cost politics game in the midst of its capitulation.

An escape from these political conundrums associated with the traditional energy paradigm is possible. The advent of decentralized renewable energy and energy efficiency, in addition to information and communication technologies has the potential to revolutionize the energy sector.<sup>53</sup> In this alternative future, energy cost security will not be provided via lower prices, but by providing universal access to energy efficiency services and renewable energy generation opportunities. This future requires a new social bargain whereby government, citizens and industry agree to respond to rising energy prices by developing new methods of ensuring energy affordability. This process needs to start now.

Beyond implementing the initiatives discussed in this paper, the government could also consider undertaking changes in rate design, developing initiatives for non-electric forms of energy, and encouraging the use of home/business energy management systems.<sup>54</sup>

Nevertheless, whether Nova Scotia endorses a new social bargain on energy costs rests more on the political culture of the province than on the availability of science and technology, policy or program options. New thinking in a variety of quarters is required. Political leaders have to be willing to signal a different direction for the future. The media need to sponsor a discussion on real energy affordability instead of simply reporting that the utility is threatening another rate hike. Citizens have to start demanding energy efficiency services and be prepared to take

a much more active role as home energy managers, conservers and generators. Businesses need to retool their products and processes for a green future. Environmentalists need to propose new methods of providing social security with respect to energy costs to accelerate (political) momentum towards a greener future.

The government's decision to relax mercury emissions is an example of a trade-off we do not want to see repeated in the future. The government's mercury decision is a warning signal that reveals the fragility of the province's environmental agenda. For Nova Scotia to meet its environmental goals and realize its vision of sustainable prosperity, we need to strike a new social bargain on energy costs and practice a new form of energy cost politics.

# Notes

<sup>1</sup> Premier's Office, "Province Steps in to Limit Power Rate Increases," *News Release*, July 22, 2010.

<sup>2</sup> Bill Estabrooks, "Balancing Affordability and the Environment, op-ed," July 27, 2010, available at <http://www.gov.ns.ca/news/details.asp?id=20100727003>

<sup>3</sup> CBC News, "Emissions goal eased to trim N.S. rate hike," July 22, 2010, available at <http://www.cbc.ca/canada/nova-scotia/story/2010/07/22/ns-emissions-target-eased.html>

<sup>4</sup> See especially Nova Scotia Premier's Advisory Council on Innovation, *Interim Report of Council*, [2005]; *Opportunities for Sustainable Prosperity: An Updated Economic Growth Strategy for Nova Scotia*, [2006].

<sup>5</sup> Bill 146, *Environmental Goals and Sustainable Prosperity Act*, Bill 146, 1<sup>st</sup> sess., 60th Leg., Nova Scotia, (assented to 13 April 2007).

<sup>6</sup> The David Suzuki Foundation chose Nova Scotia's decision to cap power emissions as one of the top five actions on climate change in the past year. David Suzuki Foundation, "Best and worst moves on climate change," *News Release*, August 5, 2010, available at <http://www.davidsuzuki.org/media/news/2010/08/best-and-worst-moves-on-climate-change/>

Upon release of the Province's renewable energy plan, the Pembina Institute stated, "Nova Scotia is setting a leadership example for other coal dependent provinces". Tim Weis, "Pembina Reacts to Nova Scotia Renewable Energy Plan," *News Release*, April 23, 2010, available at <http://communities.pembina.org/media-release/2005>

See also Tyler Hamilton, "Nova Scotia joins Canada's clean energy club," *Toronto Star*, Aug 23, 2010.

<sup>7</sup> One of the NDP's 7 Key Commitments in the 2009 election was to "take the HST off home energy to make life more affordable".

<sup>8</sup> Originally published by ChronicleHerald.ca, "NDP: NSP shouldn't charge consumers for conservation plans," June 4, 2009.

<sup>9</sup> Canadian Council of Ministers of the Environment (CCME), "Canada-Wide Standards for Mercury Emissions from Coal-Fired Electric Power Generation Plants," [2006], available at [http://www.ccme.ca/assets/pdf/hg\\_epg\\_cws\\_w\\_annex.pdf](http://www.ccme.ca/assets/pdf/hg_epg_cws_w_annex.pdf).

<sup>10</sup> Ronan Orsquoibeirne, "Mercury target not met; Report: Province makes scant progress in cutting emissions" *Chronicle Herald*, August 2, 2010.

- 11 This target is consistent with a reduction level that the CCME 2006 agreed to explore “for 2018 and beyond” and that Nova Scotia Power’s 2009 Integrated Resource Plan base case projected to come into force in 2018.
- 12 The government has yet to announce the details of the year-over-year reductions at time of writing.
- 13 Premier’s Office, “Province Steps in to Limit Power Rate Increases,” *News Release*, July 22, 2010.
- 14 Sierra Club of Canada et al., “Nova Scotians will pay the price for giving NS Power a pass on Mercury Regulations” *News Release*, July 26, 2010, available at <http://www.sierraclub.ca/en/node/2763>
- 15 *Environmental Goals and Sustainable Prosperity Act*, Sec 4(2)(f).
- 16 Personal correspondence with Roundtable member Mark Butler.
- 17 Keith Doucette, “NDP asked to soften blow; Proposed power hike puts pressure on government to alleviate costs,” *Chronicle Herald*, July 14, 2010. CBC News, “NSP proposed hike ‘unacceptable’: Groups meet with energy minister,” July 14, 2010, available at <http://www.cbc.ca/canada/nova-scotia/story/2010/07/14/ns-power-rate-hike-concerns.html>
- 18 Parker Donham, “The biosolidity of Ellen Page” Aug 17, 2010, available at <http://contrarian.ca/>
- 19 Cities are taken as proxies for provincial rates.
- 20 Also an 8.6% increase for commercial customers
- 21 Residential increases have been 3.1% in 2002; 6.2% in 2005; 8.6% in 2006; 4.7% in 2007; and 9.4% in 2009.
- 22 See Direct Evidence before Nova Scotia Utility and Review Board in the matter of P-886(3) Constitutional and Human Rights Issues, [2007].
- 23 Summit Blue Consulting, *Nova Scotia Power Inc.: DSM Report*, September 2006, p. 12.
- 24 See Thomas Hughes, *Networks of Power: Electrification in Western Society, 1880-1930* (Baltimore: Johns Hopkins University Press, 1983). David E. Nye, *Consuming Power: A Social History of American Energies* (Cambridge, Mass.: MIT Press, 1998).
- 25 Some of these deregulation experiments brought forward even larger rate increases and volatility as policy makers found the creation of a free market in electricity more difficult than originally thought. See G. Bruce Doern and Monica Gattinger, *Power Switch: Energy Regulatory Governance in the Twenty-First Century* (Toronto: University of Toronto Press, 2003).
- 26 Nova Scotia Department of Energy, *Renewable Electricity Plan: A path to good jobs, stable prices, and a cleaner environment*, [2010].
- 27 Science-based GHG reduction targets are 25% below 1990 levels by 2020 and 80% below 1990 levels by 2050. See Matthew Bramley, *The Case for Deep Reductions: Canada’s Role in Preventing Dangerous Climate Change* David Suzuki Foundation and the Pembina Institute, [2005].
- 28 Roger Colton, *Direct Testimony and Exhibits before the Nova Scotia Utility and Review Board on Behalf of Dalhousie Legal Aid Service in the Matter of: An Application by Nova Scotia Power Inc. for Approval of Certain Revisions, to its Rates, Charges and Regulations*, 2004.
- 29 The definition depends on what forms of energy are included. It can include electricity as well as other energy sources used in households. The definition often excludes transportation costs. This paper primarily discusses electric energy costs.
- 30 Conserve Nova Scotia, “Efficiency Nova Scotia Corporation to be Created,” *News Release*, Oct 23, 2009. Nova Scotia Power has been implementing Demand Side Management (energy efficiency) programs since 2008. The budget and energy savings continue to ramp-up towards the aggressive energy savings goals contained within Nova Scotia Power’s Integrated Resource Plan.
- 31 See Brendan Haley with Stephanie Sodero, *Pathways to Sustainable Energy Prosperity in Nova Scotia* Ecology Action Centre [2007], chapter 2, available at <http://www.ecologyaction.ca/files/images/file/Energy/EACenergy.pdf>
- 32 Energy efficiency reduces the revenue requirements of the utility. But this does not necessarily mean lower

rates. Very aggressive energy efficiency could actually increase rates. The price per kilowatt hour might increase since the fixed costs of the electricity system will be spread over fewer kilowatt hours.

33 Targets could also be created for the small business sector and to ensure that commercial, industrial and residential sectors receive a fair distribution of efficiency program benefits.

34 This could incorporate the electricity budget or the combined electric and non-electric fuels budget for the efficiency agency.

35 David Wheeler, *Stakeholder Consultation Process for an Administrative Model for DSM Delivery in Nova Scotia: Final Report* [2008], available at <http://www.conservens.ca/resources/publications/DSM-Report-Final.pdf>

36 The highest court in Nova Scotia has ruled that section 67(1) of the *Public Utilities Act* prohibits distinctions between members of the same rate class. This prevents the UARB from considering programs for low income residential electricity consumers. *Dalhousie Legal Aid Service v. Nova Scotia Power Inc.*, 74, (Nova Scotia Court of Appeal 2006)

37 See submissions of the Affordable Energy Coalition before the Utility and Review Board with respect to Demand Side Management.

38 Nova Scotia Department of Energy, *Renewable Electricity Plan: A path to good jobs, stable prices, and a cleaner environment*, [2010].

39 See Miguel Mendonça, David Jacobs and Benjamin Sovacool, *Powering the Green Economy: The Feed-in Tariff Handbook* (London: Earthscan, 2009).

40 Paul Gipe, *Feed In Tariff Primer 250 words*, available at <http://wind-works.org/FeedLaws/PrimersonFeed-inTariffsandAdvancedRenewableTariffs.html>

41 Solar rooftop FIT prices for Ontario are between 53.9 and 80.2 cents/kwh, depending on project size. Ontario Power Authority, "Feed-in Tariff Prices for Renewable Energy Projects in Ontario" Base Date, Aug 13, 2010.

42 Though solar has high cost per kilowatt hour of production, if the volume of solar generation is low there would be a negligible impact on rates.

43 Roger Colton, *Direct Testimony and Exhibits before the Nova Scotia Utility and Review Board on Behalf of Dalhousie Legal Aid Service in the Matter of: An Application by Nova Scotia Power Inc. for Approval of Certain Revisions, to its Rates, Charges and Regulations*, 2004.

44 The plan also includes energy efficiency, arrearage credits and crisis intervention. The credit is restricted to households below the Low-Income Cut-Off to avoid subsidizing the luxury consumption of energy.

45 To illustrate, the credit would have the effect of modifying the energy burden equation by adding a new (negative) term to the numerator:

$$\text{Energy Burden} = \frac{(P \times Q) - SN}{I}$$

Where P is price, Q is quantity consumed, I is income and SN is the amount of the safety net or the on-bill credit. Notice that the program does not change the price of energy. Instead, it increases or decreases the on-bill credit in accordance with the energy burden target.

46 In this way, the inevitable administrative delays actually provide the conservation incentive. If the credit payments are re-adjusted on an annual basis it also fixes annual budget costs and simplifies administration.

47 In some cases, these programs have paid for themselves by reducing utility credit and collection costs.

48 See Larry Hughes and Dave Ron, *Energy security in the residential sector (Part 2 - Nova Scotia), Rapid responses to heating emergencies* (Halifax: Canadian Centre for Policy Alternatives-NS, 2009); <http://www.policyalternatives.ca/publications/reports/energy-security-residential-sector-part-2-nova-scotia>

49 Keith Doucette, "NDP asked to soften blow; Proposed power hike puts pressure on government to alleviate costs," *Chronicle Herald*, July 14, 2010. CBC



News, “NSP proposed hike ‘unacceptable’: Groups meet with energy minister” July 14, 2010, available at <http://www.cbc.ca/canada/nova-scotia/story/2010/07/14/ns-power-rate-hike-concerns.html>

50 Michael E. Porter, *On Competition* (Boston, MA : Harvard Business School Publishing, 2008). Pg. 202

51 For industrial policy discussions along these lines see Manfred Binder, Martin Jänicke and Ulrich Petschow, eds., *Green Industrial Restructuring: International Case Studies and Theoretical Interpretations* (Berlin: Springer, 2001).; Neil Bradford, “Prospects for Associative Governance: Lessons from Ontario, Canada,” *Politics and Society* 26, no. 4 (1998), 539-573.; Nigel Roome, “Policies and Conditions for Environmental Innovation and Management in Industry,” in *Towards Environmental Innovation Systems*, eds. Matthias Weber and Jens Hemmelskamp (Berlin ; New York : Springer, 2005), 237-249.; John Bessant and

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52 David E. Nye , *Consuming Power : A Social History of American Energies* (Cambridge, Mass. : MIT Press, 1998.).

53 See Peter Fox-Penner, *Smart Power: Climate Change, the Smart Grid, and the Future of Electric Utilities* (Washington/Covelo/London: Island Press, 2010).

54 See for example Larry Hughes, *The Inverted Block Rate: An Alternative to Flat Rate Billing* [2004]; David Leeds, *The Smart Grid in 2010: Market Segments, Applications and Industrial Players*, Greentech Media Inc. [2009]; Optimal Energy Inc and Dunskey Energy Consulting, *Triennial Plan of the Efficiency Maine Trust 2011-2013* [2010]

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