Pipelines, Energy, Economy

DEREK BURNEY

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Shortly after 9/11, a senior US official approached the Canadian embassy in Washington to ask whom in Ottawa he should contact regarding shared strategic infrastructure, such as pipelines and electricity grids. Presumably Canada is today better equipped now than it seemed to have been then to cope with the threat, however minimal. In any event, the issue of pipeline security needs to be placed in the larger context of energy security and economic resilience.
Canada is the largest foreign supplier to the US of all forms of power – oil and gas, electricity and uranium – exporting more than CDN $125B annually across its southern border. In terms of pipeline products alone, Canada exported 2 million bbls/day of crude oil to the US in 2008, worth US $64 billion and another 500,000 bbls/day of refined products. Canada was by far the largest supplier of petroleum to the US, with those net imports representing about 11 percent of total US consumption.

By 2020, Canadian crude production is expected to rise by an additional 2 million bbls/day, most of which will be available for exports, as Canadian demand is not expected to grow significantly. This could bring US net imports from Canada to over 4 million bbls/day of crude oil, along with 500,000 bbls/day of refined products. Because of the integrated nature of the Canada-US economies, some of the crude oil or oil from bitumen is refined in the US and then re-exported to Canada for use by consumers.

Canada exported 9.9 Bcf/day of natural gas to the US during 2008, worth US $30 billion, and imported 1.6 Bcf/day, worth US $5 billion. As with petroleum, Canada was also the largest foreign supplier of natural gas to the US, with net imports representing some 13 percent of US consumption. By 2020, assuming the completion of the Alaska natural gas pipeline, total net flows of natural gas from Canada should be 10 Bcf/day – very similar to the 2008 number. Canada will remain, by far, the largest foreign supplier of natural gas to the US.

The Canada-US, or continental, electricity grid operates in a similarly integrated fashion to satisfy peak demands on either side of the border. The blackout that hit central Canada and much of the US Midwest corridor in 2003 highlighted the extent to which Canada and the US are integrated in terms of power generation, and should therefore be jointly committed to measures that will enhance the security of energy transmission facilities. It also, incidentally, pointed to the need to upgrade that grid – a challenge that still remains.

The extent of cross-border integration between the US and Canadian economies is not unique to the energy sector. It is the dominant characteristic of the North American economy, including in automobile manufacturing, as was more than evident when the US and Canadian governments acted together to rescue and restructure that industry. The agriculture, integrated rail and aviation sectors are other examples. There is in fact a high degree of mutual economic dependence that grows with each economic cycle.

This dependence is particularly relevant in the energy sector. The essential point is that the US needs the reliable supply of Canadian energy exports to secure its own future economic growth. Canada's oil reserves – 97 percent of which are in the oil sands – are second only to those of Saudi Arabia. Measures that disrupt this supply for any reason would, by their very nature, jeopardize those growth prospects.

Concerns about so-called ‘dirty oil’ should be kept in perspective, beginning with some basic facts. The notion that oil from the oil sands is two or three times ‘dirtier’ than regular crude is nonsense. The ‘dirty oil’ fallacy focusses only on oil sands production. A ‘well to wheels’ comparison with conventional oil is more accurate and shows only minor differences in CO2 emissions. In other words, there are various levels of crude oil, with varying levels of emissions, but oil extracted from the oil sands ultimately produces no more GHG emissions than some of the heavy crude from California.

As a matter of fact, according to data from the US Environment Protection Agency, emissions from thermal power plants in 27 US states individually exceeded the total emissions from the Canadian oil sands. (The total from these states was actually 70 times larger.) Besides, emissions from US cattle herds were three times those from oil sands.

Are there alternative sources of supply for the US energy demand? Mexico is on the southern border, but its energy supplies are declining. State ownership hobbles both efficiency and investment, and seriously constrains the ability of Mexico to retain its position as a major supplier. Other sources for US energy supply are the Middle East and Venezuela. Canada stands tall in that ranking.

State-owned national oil corporations directly control 75 percent of the world’s oil reserves, and that number is likely to continue to increase. Countries like the US (and Japan and Korea, among others), which are dependent on others for secure supplies of oil, will undoubtedly be putting greater emphasis on securing increasingly scarce supplies. This means that Canada’s role will likely become even more important than it is today.

As the US State Department acknowledged in its recent approval of the Alberta Clipper Pipeline: “The addition of crude oil pipeline capacity between Canada and the United States will advance a number of strategic interests of the United States; [increase] the diversity of supply at a time of considerable political tension in other major oil producing countries and regions; [shorten] the transportation pathway for crude oil supplies; and [increase] supplies from a non-Organization of Petroleum Exporting Countries producer. Canada is a stable and reliable ally and trading partner of the United States, with which we have Free Trade agreements that augment the security of this energy supply.”

Pipelines provide safe, low-cost transportation of a critical component of growth for the Canadian and American economies. They have an outstanding record of environmental and operational performance. And, if next-generation biofuels – such as algae-based or other biofuels made from non-food crops – become a part of the climate change solution, pipelines may well be the conduits for them also.

There is certainly increased attention being paid to security along the Canada-US border these days. Some of this increased attention is undoubtedly warranted, and some of it is plainly protectionism or bureaucratic rent-seeking dressed up in the name of security. But, even if cross-border pipeline flows of oil and gas tend to be free of much of the ‘border thickening’ measures that are steadily undermining the free flow of other goods and services, there are nonetheless significant challenges that must be met to maintain supply.

One is achieving both economic efficiency and infrastructure security in an environment where the two federal governments, the Canadian provinces, American states and frequently municipalities each have a piece of the jurisdiction. In Canada, provincial government ownership of oil and gas and water resources needed for power generation further complicates matters. Federal infrastructure policies engage provincial jurisdiction and interests as well. In Canada, it is never certain whether overlapping federal-provincial jurisdictions on any subject will yield coherence or conflict or just procrastination.

The regional dimension of energy policy is critically important. The vast majority of current and future oil and gas production comes from the Canadian West. There are important offshore resources coming on-stream in Newfoundland, and prospects from the Arctic as well. In attempting to devise a national – some might say, rational – Canadian approach to energy policy, including on issues relating to pipeline security, the federal government – especially a minority federal government – must tread carefully and sensitively.

A second challenge is the tension between reality and public perception. Many in the pipeline industry regard security risks as low, believing instead that pipeline disruptions are mainly caused by accidents (rather than by deliberate acts). It is also true that built-in redundancy means that damage to a pipeline does not result in major or enduring interruptions to supply, and that most damaged pipelines can be up and running within a few days.

The problem for industry and government is that public perception can easily give way to lurid imagination. Recent acts of pipeline sabotage in northeast British Columbia, and recent actions in the oil sands by environmental activists – even if sporadic and probably manageable – feed a view that the pipelines may be at risk, thereby requiring costly and burdensome regulation. Finding a rational balance is a constant work in progress.

The answer is not more regulation of the industry. In both countries, and in almost every economic sector, there are already many examples of inefficient and overlapping regulation. Often, government seems more concerned with process or optics than with the result. The fact that more than CDN $3 billion has been spent on regulatory compliance for the Mackenzie pipeline, and that not a single inch of pipe has yet been laid, underscores this point.
A third – and perhaps the most important – challenge is whether governments on both sides of the border are properly and coherently organized to deal with threats to pipeline security, or more generally with threats to the strategic infrastructure shared by Canada and the US. In both countries, 9/11 triggered a far-reaching reorganization of government departments and agencies charged with security, not the least of which was the creation of the Department of Homeland Security in the US and, in Canada, the Department of Public Safety (now Public Safety Canada). Both governments understood that protection of critical energy infrastructure would be a key component of the new security environment.

The Smart Border Declaration signed by the Canadian and American governments in late 2001 aimed to find a workable balance between security and the free flows of trade and people. Included in its 32-point Action Plan was an undertaking to “conduct bi-national assessments on trans-border infrastructure and identify additional protection measures…” that might be necessary. One assumes, therefore, that, today, Canada and the US are more interconnected in monitoring and protecting cross-border infrastructure. It is encouraging to know that strategic infrastructure is one of the eight priorities of the Canadian Security Intelligence Service. The state of bilateral readiness should reflect a shared priority.

Risk management is critical. It is also somewhat subjective by its very nature. Security and terrorism are but one part of an overall risk management system. Threats, probabilities and consequences must be understood and evaluated. Poorly conceived and poorly implemented risk management is not only costly, but actually increases risk.

There are increasing threats these days from cyberspace. The shared Canada-US power grid is probably a primary target – moreso than pipelines – but computer systems generally are now more vulnerable. Former US Congressman Lee Hamilton – co-chair of the National Security Preparedness Group in the US – has been quoted saying that “someday, somewhere, sometime we’re going to have a massive cyber attack.” This is a sobering comment from an astute individual. The best answer is a more robust defence for computer systems, as well as enhanced information sharing between countries and among targeted industries. Canada and the US should be in the vanguard of states planning appropriate defences against cyber attacks from within and without.

In a 2006 study for the Canadian Centre of Intelligence and Security Studies at Carleton University, John Hay observed that, despite the reorganization, "[m]ore than four years after … 9/11, it is still not altogether clear who in the (Canadian) federal government does what" in terms of responsibility for the protection of infrastructure. The International Pipeline Security Forum, now in its fifth year, provides a valuable opportunity to discuss critical infrastructure issues and best practices. That certainly helps. But, to a layman, it seems that the allocation of roles and responsibilities for energy infrastructure protection remains fairly opaque.

The annual Pipeline Security Forum provides a meeting place – a kind of binational town hall – to discuss a vast and complex bilateral relationship that touches – certainly for Canada – almost every aspect of public policy. These types of arrangements – informal, practical and unburdened by a formal structure – are the rule rather than the exception. They are flexible and capable of rapid response to changing situations. Most of them fly below the political radar screen in both countries; that is, they exist for the simple reason that officials in Canadian and American government departments and agencies need to work intimately together to fulfill their responsibilities. Regular dialogue of this kind is necessary, but is it sufficient?

Informal arrangements also have weaknesses. Often, they are based on personal relationships between responsible officials. Whom one calls depends on whom one knows. But when officials move on, there is not always adequate institutional memory to guide successors. In the absence of structure, therefore, there is a distinct risk that individual issues will be hermetically sealed in self-standing silos. The larger picture can get lost – a classic example of trees obscuring the forest.

In many areas, government agencies and departments have a firm grasp of the actions needed in the face of a serious problem. However, what is sometimes lacking – other than on defence – is a plan of action to restore the situation to normal once the problem has passed. The vital importance of assuring cross-border pipeline security, and energy security more broadly, against emerging threats suggests that there may be a need to bring more bilateral structure and organization to the task.

There is, of course, a formal dialogue between Canada and the US on 'clean energy' – a dialogue initiated during President Obama's visit to Ottawa in February of this year. Energy security, as well as climate change, should be a major driver for this dialogue. There again, what is needed is not only a coherent or parallel action plan, but also a healthy balance between what is needed to preserve the environment while, at the same time, ensuring a solid platform for economic recovery.

The Clean Energy Dialogue sends a message that, when it comes to concerns about energy security, Canada should be regarded as a vital part of the solution to the twin US objectives of reducing dependence on less reliable sources of oil, and increasing the supply of clean power. This is also why, in contemplating measures to reduce greenhouse gas emissions, it makes sense for Canada and the US to adopt a common approach – one that respects the mutual benefits of an integrated energy market. In September of this year, Prime Minister Harper and President Obama together confirmed the importance of such a collaborative approach. They also reaffirmed their commitment toward a comprehensive and effective global agreement that would put the world on a clean energy pathway.

Climate change is essentially all about oil-based transportation and heating fuel and coal-fired electricity. Most of the total emissions (80 to 90 percent) from oil of any kind comes ultimately from the tailpipe of the automobile or the truck – not the extraction process. That is why tighter tailpipe standards are the single most effective means of reducing emissions. Canada moved on this in April of this year. The US followed shortly thereafter – a common approach to a common challenge. This is the spirit that should guide a similarly common approach to Cap and Trade – one that respects both the roles of Congress and Parliament, and that takes due account of the jurisdictions of provinces and states, but is otherwise anchored in a mutual need for reliable, secure access to energy supplies that are vital to economic recovery.

Canadian Environment Minister Jim Prentice has stressed that economic reality is the primary consideration in Canada's strategy for climate change and the environment. Canadian and US businesses compete globally. It follows that both sides must be concerned about competitiveness and the impact of climate change measures on competitiveness. It makes no sense to proceed unilaterally without harmonizing principles, policy, regulations and standards between the two countries.

The supply and use of energy, and its distribution through an efficient and secure pipeline infrastructure, are critical to tackling the complexities of climate change. This will not be easy. Legislation has passed the House in Washington, but not the Senate. Key industry players are divided on the House Bill, and on proposals under consideration in the Senate. In the meantime, the Environmental Protection Agency has jumped into the debate – saying that, if Congress does not act on greenhouse gas emissions, it will. But the outcome will not be known for some months to come.

There must be leadership commitment from both the Canadian and US governments, and there must be a serious negotiation leading to shared targets and timetables with standards and mandates rooted in science – not myths. The result of the negotiation must also ensure a healthy balance between protecting the environment and respecting the joint Canada-US need for economic growth. Neither country can afford to tackle these issues with a spaghetti bowl of different approaches championed by different jurisdictions. Above all, there must be coherence, common sense and concrete action.

Canada and the US made progress bilaterally in the past on environmental and other issues in similar circumstances. They brought into force an accord on acid rain at a time when some in the US denied that there was an acid rain problem to deal with in the first place. The success in dealing with that mutual problem inspires a degree of confidence that the two countries can come to a similarly sensible agreement on climate change.

Prudence and common sense also suggest that there is a need to heighten vigilance and strengthen institutional, regulatory and infrastructure links that secure so much of what Canada and the US do together. No one should wait for an attack or breakdown to oblige the two countries to act smartly in their mutual interest. History offers lessons on what works and what does not. Complacency, or taking one another for granted, is not the answer.

History has also shown time after time that the US economy has an exceptional degree of resilience – an ability to recover and rebound. This 'can-do' spirit is alive and well. In Canada, as the far smaller partner, there is an inclination to worry. Whenever the US passes through tough economic times, there are murmurs in Canada that it has hitched its wagon to a falling star. The unprecedented economic boom from the mid-1990s to the middle of last year quieted the doomsters for a while, but they are now back. Although economic recovery this time will be painful and slower, with many challenges still ahead, there is good reason to believe that the innovation, ingenuity, dynamism and resilience of the world's largest economy will prevail. Energy, along with exciting new technologies and the pipelines and power grids shared by the two countries, will be major catalysts for future growth – provided they remain reliable and secure.

Derek H. Burney is Senior Strategic Advisor of Ogilvy Renault LLP and Senior Research Fellow of the Canadian Defence and Foreign Affairs Institute (CDFAI). This article is adapted from recent remarks made by Burney to the International Pipeline Security Forum in Ottawa, Canada.