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Three Governments Offer a New Self-Portrait

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A little less than four years ago, Canada, Mexico, and the United States posed deliberately for their first-ever, official *self*-portrait showing where each stood in regard to energy—and what was being done (for their mutual benefit) to collaborate more closely. This important, jointly produced document was issued in three languages (and entitled in English, *North America—The Energy Picture*).¹ Now, members of the North American Energy Working Group (NAEWG) have released their updated version of that snapshot in the form of a 94-page, multicolored report.² It is a mix of good news, bad news, and lots of uncertainty.

Despite the fact that the three national governments seem to be much more at ease now with cross-border energy cooperation (which is working well in a variety of ways), the progress shown by a comparison of the two documents has been incremental rather than dramatic. Each of the countries will need to import increasing amounts of liquefied natural gas (LNG) in the future for the sake of national as well as continental interests. Problems of oil supply remain to be solved.

This should be no surprise, because the years since NAEWG was established in 2001 have been troubled ones. The terrorist attack on the United States on 9/11 jolted all three economies. The Enron scandal and tumultuous reactions in California set back a basically sensible trend toward regulatory reform. A combination of geopolitical developments, supply-and-demand imbalances, and climatic anomalies (among other causes) pushed energy prices higher—and, even worse, threatened that they would remain volatile, increasing investment risks. Mexico and Canada struggled with internal political problems. Yet, on the brighter side, the NAEWG partnership was strengthened by being subsumed into the broader, trilateral Security and Prosperity Partnership of North America (SPP).

The new publication again uses common units to portray *officially* the three countries' composite energy resources, infrastructure, and projections of future requirements. The "Introduction" proffers it "as a reference document for use by government, business, and the public," but it takes considerable digging through it (and its predecessor) to explore some important relationships. On the whole, "energy security" for the United States (and for the continent) faces higher hurdles than were apparent several years ago.

By the metrics offered in a comparison of the old and new "Energy Picture," this country (the overall net importer among the three partners) has seemed to *reduce* its reliance on its closest neighbors. In 2000, we derived 27 percent of our net energy imports from Canada and 9 percent from Mexico. By 2004 (the most recent year for which this new publication offers full statistics), the numbers had dipped slightly—to 24.2 and 8.4 percent respectively. This does not

¹ North American Energy Working Group, *North America—The Energy Picture*, June 2002. Hereafter, this document is cited as EP-I and its successor as EP-II.

² *North America—The Energy Picture II* is available in English at <http://www.pi.energy.gov/pdf/library/NorthAmericaEnergyPictureII.pdf> and in Spanish at http://www.energia.gob.mx/work/resources/LocalContact/2183/57/Perfil_Energetico_II.pdf. Page citations for EP-II are for the English version.

necessarily mean that the North American partners are now less engaged in mutually beneficial exchanges of energy, since net figures do not show total trade volume. In fact, intracontinental trade in natural gas and petroleum increased between 2000 and 2004,³ and although cross-border traffic in electricity dipped between 2000 and 2003, it has recovered.⁴ However, EP-II does not make this clear, and that points out a shortcoming in releasing aggregated data (especially in the form of percentages) without also providing at least minimal analytic guidance.

The bottom line is that each of the three countries has begun to feel a squeeze between domestic energy supply and energy demand in some fashion. Far from weakening the argument for close cooperation, however, this underscores its importance. Instead of operating as three totally distinct markets, it is more efficient for North America to encourage a series of regional markets that can freely overlap the international borders. This process is well advanced (as witnessed by the successful utilization of pipeline and powerline interties and new facilities being built or planned to serve more than one country simultaneously), although there is room for it to become still more robust.

Since the triumvirate's top national leaders⁵ established the Security and Prosperity Partnership barely one year ago, "stakeholders" from within the private sector and subnational governments in all three countries have been given a modest but institutionalized role in further fostering energy interdependence. This new arrangement of "players" will be especially important in several supply areas (such as liquefied natural gas, oil sands, frontier drilling, and nuclear power), as well as in watching our respective national energy diets—notably in regard to conventional oil products for the transportation sector. So the new document deserves a trip to the Internet by any and all interested parties to figure out for themselves what has been added or modified in the tricountry portrait.

North America—The Energy Picture II was released electronically in English on February 3. This happened without any advance warning or public announcement, although it took place at almost exactly the time SPP's earlier *Report to Leaders* had specified EP-II would be released. Significantly, this deadline was met even though Canada had just changed governments and despite Canada's new prime minister (Stephen Harper, of Alberta) barely having time to announce the new minister of natural resources (Gary Lunn, of British Columbia). Unfortunately, no publication date for EP-II in "hard copy" has yet been announced; based on past practice, this might not occur for months. For now, therefore, the publication will have to be accessed and studied via the Internet.

The document's stiff arrangement and lack of either a summary or conclusions makes it challenging to plumb for the implications of its data. One thing that seems obvious, however, is the special attention being paid in all three countries to natural gas—and more particularly, the importation of liquefied natural gas (LNG) by all three, which now occupies a separate nine-page section in the report. Overall, the space devoted to gas has been tripled since the first edition—reinforcing the attention displayed by the separate publication last year of a NAEWG document entitled *North American Natural Gas Vision* and by a "benchmark" trilateral meeting of government leaders and stakeholders on the topic already targeted for mid-2006.

The emphasis is well chosen. Although a retreat in those prices occurred early in 2006, due to unseasonably warm weather and economics-based cutbacks in natural gas usage by the industrial and electricity-generation sectors in reaction to high prices, the continent as a whole is currently in no position to match the supply immediately available within North America to its total gas demand.⁶ Members of the three national energy regulatory bodies (Canada's National Energy Board, Mexico's relatively new *Comisión Reguladora de Energía*, and the U.S. Federal Energy Regulatory Commission) discuss problems such as these at several trilateral meetings of senior staff they now hold among themselves each year, but LNG receiving facilities and requisite intra-continental delivery systems (including both Alaskan and Canadian pipelines from the Far North) are simply not destined to come on line quickly enough to avoid intermittent supply and price crunches over at least the next half-dozen years.

³ U.S. Energy Information Administration, *Monthly Energy Review*, January 2005, Tables 3.3e, 3.3f, and 4.3.

⁴ Based on Canadian Electricity Association, *Canadian Electricity and the Economy: The Integrated North American Electricity Market—Investment in Electricity Infrastructure and Supply, A North American Concern* (March 2006), p. 5.

⁵ At that time, Prime Minister Jean Chrétien, President Vicente Fox, and President George W. Bush.

⁶ See, Joseph M. Dukert, "Yellow Alert for North America on Natural Gas," *CSIS Occasional Contribution*, Number 1, April 2005.

Energy Picture II does not overtly call attention to such unpleasant prospects. Although its 2002 predecessor offered projections of both supply and demand to 2010 for various energy sources within each country, this edition abstains totally from forecasting. Instead, its lengthy (and heartening) recitation of North American LNG projects that have reached or are approaching construction stage begins by simply stating: “The long-term outlook for North America to continue to supply its own natural gas is uncertain.”⁷

The major advantages of the gas interdependence that the three governments have allowed to develop within North America over the past decade are: (1) the ability to deliver this environmentally friendly fuel under most circumstances to natural markets, regardless of intervening borders; and (2) the potential of adjusting flow patterns on a short- or long-term basis to fluctuations in demand. Since the 1990s, these possibilities have encouraged a substantial number of transborder exchange points (along with in-country links that complete the connections between ultimate supply and end-users, as mapped out in EP-II); but most of that construction was undertaken purely on the initiative of the private sector once governmental barriers had been lifted by international agreements and national implementation. Thus, it took place largely before the institutionalization of cooperation via NAEWG/SEP; and EP-II makes note of only a single *new* gas pipeline of this type—the one inaugurated in Rio Bravo-Reynosa in 2003, near the Burgos Basin fields. It is in this area that Mexico has hoped to revive its own flagging natural gas production by somehow reconciling constitutional restrictions on development of its hydrocarbon “patrimony,” nationalist monopoly controls, and the need for expensive modern technology that demands a return on risk investment. EP-II does not say this either, but the device of “multiservice contracts” (inviting private development of gas in certain areas, but without giving proportional compensation for success) has failed to excite experienced companies or produce dramatic results; and it remains to be seen whether promised slight modifications to such arrangements will do any better.

In fact, the official report of Mexico’s annual gas production has actually dropped by 200 billion cubic feet in the interim between EP-I and EP-II, although the former had forecast that it would nearly double by 2010 (from 1.7 trillion cubic feet (tcf) per year—which was EP-I’s obviously overoptimistic retrospective estimate for 2000—to 3.2 tcf). Meanwhile, annual U.S. output fell by an even larger amount (from 19.2 tcf to 18.3 tcf). Canadian production of natural gas remained steady at about 6.6 tcf, but part of that was absorbed by an increase in the country’s domestic demand, which rose from 3.3 to 3.4 tcf over the same period.⁸

Only a few years ago, nationalistic Mexican officials would have bridled at the suggestion of importing (rather than cautiously exporting) gas. But in the interim between EP-I and EP-II, the country’s use of electricity increased seven times as rapidly as that in the United States and five times as rapidly as in Canada,⁹ and the bulk of this expansion has come through the introduction of efficient, *gas-fired* combined-cycle turbines.¹⁰ The shortfall in domestic gas supply has had to be met by imports from the United States, even though a similar gap between U.S. supply and demand means that the ultimate source for Mexico is Canada (through displacement of orders in a smoothly functioning

⁷ EP-II, p. 37. Almost to illustrate this, p. 42 of EP-II cites (without comment) two widely divergent projections for the share of U.S. natural gas demand that might be satisfied by LNG in 2025. A National Petroleum Council Study in 2003 said it might be as high as 12 percent, while the U.S. Energy Information Administration’s (EIA) *Annual Energy Outlook 2005* jumped the upper figure to 21 percent. I was very skeptical of that EIA estimate and note that *Annual Energy Outlook 2006* (AEO-2006, which has not yet been published in hard copy but can be viewed electronically at <http://www.eia.doe.gov>) has lowered its reference-case projection to 15 percent. AEO-2006 notes, however (p. 89), that LNG imports are likely to be affected extraordinarily by variations in world oil prices, which influence both domestic supply and demand for hydrocarbon fuels, as well as the pressure on global gas supplies.

⁸ EP-II, pp. 14 and 81; EP-I, p. 10. Note that comparisons in this article use rounded statistics from the two reports that are directly comparable to one another, although each of the NAEWG documents sometimes varies in the years chosen for comparison. Also, there are some slight discrepancies between EP-I and EP-II in both supply and demand statistics for 2000, and in such cases, the ones cited or used here are taken from the more recent document since the earlier figures were probably estimates.

⁹ EP-II, p. 19.

¹⁰ These have often been funded privately by independent power producers, in cogeneration operations, or for self-use by ad hoc commercial and industrial partnerships—although in every case the only legal customer for any surplus electricity is the government power-distribution monopoly.

market). According to EP-II, the volume by 2013 “will amount to 41 percent of Mexico’s total natural gas demand.” This will include a hefty amount brought in by LNG tankers to the two new receiving facilities nearing completion and half a dozen other such projects described by EP-II as in “various states of advanced consideration,” but plans are for some of this gas to be shared with U.S. customers—just as will be the case with some LNG arriving in Canada in the future.¹¹

The present publication of somewhat more detail about energy *demand* by the three countries is an improvement from the earlier “Energy Picture”—which was criticized for devoting only a two-page section to this aspect of the energy equation and omitting any breakdown of sectoral use for the various types of energy. Here, the more recent report reveals mixed signals. Between 2000 and 2005, the consumption of natural gas reported by EP-II for Canada, Mexico, and the United States combined shows a falloff of 2.6 percent (721 bcf), but petroleum consumption rose during the same time frame by 734,000 barrels per day (3.2 percent).¹² Considering the economic downturn during that period and the following elevator ride upward in prices (both of which should have dampened all energy use), it seems that appeals for energy efficiency and energy conservation (including serious NAEWG programs to harmonize efficiency standards on equipment and promote the use of energy-sparing appliances) have had limited results in the three countries.

In light of this, the raw statistics in continental petroleum production (including natural gas liquids, or NGL) are especially grim—remaining essentially unchanged in the aggregate since 2000 at around 14.3 million barrels per day (mmbpd). With short-term prospects for Mexico’s offshore Cantarell oilfields increasingly in question, the projection in EP-I for Mexican output of 4.6 mmbpd by 2010 now seems less likely to be reached. Between 2000 and 2005, Mexican production did indeed rise—but only by 11.3 percent, while Canada’s surged by 18.5 percent (from 2.7 mmbpd to 3.2 mmbpd). As for the United States, the forecast by EP-I that oil production by 2010 would be “somewhat lower than 2000” (regardless of whether high or low economic growth was assumed) turned out to be disturbingly accurate. According to EP-II, the first five years of this decade saw U.S. daily output (including natural gas liquids as well as crude) drop from 8.1 to 7.3 million barrels,¹³ and the U.S. Energy Information Administration’s latest projections (which take into account the spur to domestic production from recently higher prices) still see output in 2010 reaching only 7.6 mmbpd.¹⁴

For this reason, it is hard to understand why the new official energy portrait barely mentions Canada’s oil sands—a complex but extremely important factor.¹⁵ The first SPP “Report to Leaders” last summer recognized their significance by establishing an oil sands subgroup within NAEWG, and an SPP-sponsored meeting in Houston in late January brought together government and private-sector representatives to analyze related issues.¹⁶ Alberta’s oil sands projects have quickly expanded and multiplied in recent years to supply 1.2 mmbpd—more than 35 percent of Canada’s total petroleum production. The experts from the three countries at the Houston meeting (technically, Mexico is only an observer in this subgroup) accepted consensus estimates that production might reach 4 to 5 mmbpd within a relatively few years, even if the price of West Texas Intermediate crude oil (WTI) dropped back below \$50 a barrel. But they also raised “chicken-and-egg” problems that will require the sort of planning and execution that can only be ensured by very close interchange of ideas and initiatives among the private sector and various levels of government—the sort that SPP itself was mandated at its outset to stimulate.

¹¹ EP-II, pp. 38–40.

¹² EP-II, pp. 81–83.

¹³ EP-II, Table 1C.

¹⁴ EIA, *Annual Energy Outlook—2006*, Table 11.

¹⁵ Although the map on p. 23 of EP-II identifies oil sands (quite properly) as “established reserves,” the pie chart on p. 11 continues to portray the United States as the leading North American country in “proved reserves of conventional crude oil,” with 21.4 billion barrels. The text, however, does note that “In addition, Canada has proven reserves of oil sands of approximately 175 billion barrels, over four times the total of North America’s conventional crude oil.” At today’s prices, even this often quoted number of 175 billion is probably a gratuitous underestimate.

¹⁶ My own participation in that meeting was the source of several subsequent observations in this article.

Current production from oil sands is still split 50/50 between mining and newer methods—conversion of the hydrocarbon-rich natural material, while still underground, into a variety of extractable and refinable products, depending on the techniques used by different companies and consortia. The Houston workshop suggested that traditional surface mining will continue in areas where the depth of “overburden” is not great enough to support in situ approaches, but the balance is expected to shift to 80/20, with the preponderant share coming from in situ production. That promises to steadily reduce requirements for water and exogenous energy (initially supplied in large measure by expensive natural gas).

Nevertheless, the upgrading and refining of the bituminous potpourri in oil sands will always be required, and the multiplicity of possible products (in terms of viscosity, sulfur content, and even the mix of long-vs.-short hydrocarbon chains) makes for headaches in marketing and delivery. Pipelines must either conform to a single type of loading (a risky commitment) or adjust to many types of loading (adding expense in both construction and operation). Refiners must either adapt existing facilities to accept offbeat feedstock or expand operations, possibly with new plants near the source. The attractive potential use of by-products in the petrochemical industry further complicates decisions. So, the possibility exists for very rapid expansion in Canada’s petroleum contributions to the interdependent North American energy market, but the crucial “next steps” are quite problematic.¹⁷

Free markets alone can undoubtedly work things out over time. But timing is a precious externality for North America in regard to adequacy, reliability, and affordability of supply—in short, to energy security. Command-and-control governmental solutions are out of the question unless the 2008 U.S. elections bring about a radical change in the attitudes of Congress. Yet some form of coordination seems essential, and it might have been appropriate for EP-II to allude to both the problems and the potential.

Pipelines originating in the oil sands region will continue to be discussed, but they will not be built unless their routes lead to guaranteed long-term outlets for whatever product they carry. This is why a priority might be a relatively short delivery system that stretches to a Pacific Ocean port—thus permitting service to the U.S. West Coast or to Asian buyers. Refinery investments in the billions will similarly await a greater degree of certainty for return, as measured against opportunity costs. At least two jam breakers were discussed at the SPP Experts Workshop in Houston, although both seem like long shots in the short run. One is the Altex Project, a “bullet line” pipe from Alberta to the massive refinery complexes along the Gulf of Mexico (thus inviting more active involvement by Mexico out of its own self-interest).¹⁸ The other is agreement on one or more standardized “marker blends” for oil sands products that could mimic WTI or Brent as basic market categories and thus invite competition among customers. In either case, however, it seems that there is a role for follow-up facilitative action by SPP. That explains this long digression within a summary of SPP’s latest publication, which failed to surface this central set of issues.

The section in EP-II on “Legal and Policy Frameworks” for each of the three countries documents the fact that almost nothing has changed over the past three and a half years in the “rules of the game” for basic hydrocarbon or electricity development in Mexico—which means that private investment is severely constrained and hampered by limited return on investment. Furthermore, the regulating authority, *Comisión Reguladora de Energía* (CRE), has been budget starved. As a result, new gas permits (for both domestic transportation and distribution) issued by CRE over approximately four years prior to mid-2005 produced a mediocre \$400 million in net fresh committed investments.¹⁹ The story is much the same in electricity generation; the annual rate of “private” offers to invest in power production since 2001 was lower than it had been during the seven preceding years (\$1.2 billion per year vs. \$1.4 billion).²⁰ Yet

¹⁷ Perhaps the most interesting and useful section of EP-II for continental energy analysts and planners will be pp. 51–57, which contain thumbnail status reports on the pending development of more than two dozen new links for the long-distance delivery of natural gas, electricity, and oil or oil products. Unfortunately, the section on Mexico is vague, although maps such as those on pp. 32, 34, and 50 offer a general picture of the present situation.

¹⁸ Another possibility (not discussed in the sessions I attended at Houston) would be to reach refineries on the Gulf Coast by rearranging flows in some existing pipelines and adding shorter connections. Enbridge is studying this possibility.

¹⁹ Calculated from EP-II, p. 62, and EP-I, p. 46.

²⁰ Calculated from EP-II, p. 63, and EP-I, p. 47.

LNG offers a somewhat brighter story; the three new receiving facilities set to start operating between the end of 2006 and 2009 represent alone a combined investment commitment of nearly \$2 billion.²¹

For lack of better news, the section on Mexican regulation in EP-II devotes a page to the “Ten-Point Action Plan” proposed by President Vicente Fox in September 2005 to address “the lack of in-depth reforms within the energy sector,”²² but this plan from a lame-duck president was almost surely dead out of the starting gate. In comparison, the subsection on Canada (which has a generally free energy market controlled largely by the provinces, and which openly invites private—and foreign—investment) has relatively little new to report. The U.S. section devotes prime space to “highlights” of the Energy Policy Act of 2005,²³ including its incentives to encourage a fresh start for commercial nuclear power, but without relating this to a new SPP-established subgroup identified in the appendix as the Nuclear Collaboration Experts Group.²⁴ Another odd omission is the failure to reference cross-border progress in improving reliability of North American electricity grids as a result of the new legislation’s authorization for the Federal Energy Regulatory Commission (FERC) to *enforce* (on U.S. entities) the standards agreed upon voluntarily within nongovernmental “reliability councils” that cross national boundaries. Canada has pledged cooperation through separate mechanisms that it will develop on its own, even though this necessitates negotiation between the national government and provincial authorities.

Withal, *North America—The Energy Picture II* embodies a marginal net improvement over its predecessor. But it calls particular attention to one recent recommendation from a trinational group of energy industry organizations—namely, that the private sector in all three countries be consulted prior to publication of documents such as this one. The suggestion came from the first North American Regional Forum of the World Energy Council (WEC), which met last November in conjunction with SPP, but did not issue its report²⁵ until about the same time EP-II appeared.

Despite its shortcomings, EP-II can serve many useful purposes. First, the fact that work on it continued during the Canadian election campaign of 2005–2006 (and that it was issued, at least electronically, before a new government was in place there) provides notice that the North American Energy Working Group and SPP “have legs” apart from specific administrations. This should be cited as a precedent later this year, when a new Mexican president is to be elected and when the congressional complexion could change in both Mexico and the United States. Second, it is a compendium of officially accepted statistics and statements, issued simultaneously by the three governments; thus, it establishes a helpful (albeit impressionistic) base from which “stakeholders” and observers can feel free to project. By June 2007, one of SPP’s self-imposed “benchmarks” of accomplishment is supposed to be the initiation of joint modeling efforts for the three countries, although members of NAEWG are privately skeptical that this target will be met. Finally, EP-II suggests a modest amount of progress in the development of the continental energy market—even during a period of less than robust growth and a number of traumatic events (the 9/11 terrorist attacks, the California crisis, Enron’s collapse, the Gulf hurricanes, energy price explosions, etc.).

The governments of Canada, Mexico, and the United States have distinct national energy policies, and things will stay that way for the foreseeable future; but the respective energy ministries have become more cognizant than ever that a *continental* outlook and measured cooperation are necessary and helpful in planning for the future. I am still personally optimistic that SPP (and especially its NAEWG component) will maintain enough momentum through the Mexican national elections on July 2 and the U.S. elections this fall so that there can be no serious slippage in continental energy interdependence, regardless of the vote outcome.

The upcoming trilateral summit meeting of the two presidents and the prime minister in Cancún on March 30–31 may or may not do much to justify this optimism, despite last-minute efforts to showcase progress that has already been

²¹ EP-II, p. 63.

²² EP-II, pp. 69–70.

²³ EP-II, pp. 70–74.

²⁴ EP-II, p. 91.

²⁵ World Energy Council, *Recommendations for the North American Security & Prosperity Partnership from the WEC North American Region*, p. 4.

made but little publicized. President Bush is preoccupied with Iraq and political problems; Prime Minister Harper is still feeling his way in his new position; and President Fox appears to have no bargaining chips left in his dealings with an opposition-dominated Congress. However, facts are facts: supply shortfalls in one jurisdiction are felt quickly by the others within an integrated market. Yet smooth exchanges of energy provide reliability and economic efficiency with potentially less stress on the environment. So, where does EP-II show that we stand?

It would be dangerous to let our favorable situation as friendly neighbors lead to a “fortress” mentality, because all three countries will continue to require some energy from beyond the NAFTA triad. For example, we are all part of the global oil market; and before many years we will be affected by the fluctuations of a new (and separate) intercontinental market in natural gas. But, as a practical matter, energy trade *within* North America need not bear the same policy connotation as imports and exports involving the rest of the world—or even the rest of the Western Hemisphere. EP-II, if read with considerable care, stimulates thought about the pluses, minuses, and net advantages of even closer cooperation in our continental energy situation.

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