

Energy security in the Americas

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Seven of the ten largest oil and gas discoveries in the world were made in Latin America in 2008

Pipeline diplomacy: Trinidad and Tobago is a good 'energy neighbour' to the region

The energy sector – the driving force behind modern industrial and transport life – will be one of the three principal pre-occupations of the 34 democratically-elected leaders of the Americas when they meet in Port of Spain, Trinidad, for their Fifth Summit between 17-19th April this year.

Indeed, their Draft Declaration of Commitment makes “energy security” a top priority for the future on the part of the presidents and prime ministers of the Americas, alongside other concerns, or “pillars,” as they are called, such as “promoting human prosperity” and “environmental sustainability.” The leaders will be going out of their way to set themselves specific deadlines – some of them daunting – for achieving the goal of ensuring “security” in energy.

The most ambitious of all is probably their desire – by 2011, “at the latest” – to have “developed a strategy of co-operation among our nations, international organisations and the private sector that will increase energy efficiency, diversify energy sources, minimise environmental impacts, strengthen energy independence and secure access for safe, affordable energy supplies for all, especially the poorest.”

That, in itself, is an extremely tall order but the heads do not plan to stop there. A year later, by 2012, they are supposed to have “developed strategies for second-generation and more advanced bio-fuels that will not

compete directly with other agricultural crops for land, water or fertiliser,” as well as thrown their support behind “the development and use” of a variety of other renewable energy options – “onshore and offshore wind turbines, conventional and polymer photovoltaics, solar towers, geothermal, hydro-power and hydrogen fuel cells.”

To underpin all this, they expect, in that same year to have “strengthened regulatory requirements” in such a way as to make them “simpler, more coherent, transparent and effective.”

And just to make sure the hundreds of millions of people living in the 34 democratic countries of the Americas – and presumably even the residents of Cuba, the sole American state uninvited to the summit, because it is not democratic but which must surely have as much interest in “energy security” as anyone else – are in sync with the vision of what will ultimately amount to a revolutionary change in the way they receive and use, energy, the summit heads have pledged to “ensure that the people of the Americas have universal access to accurate, reliable and impartial information on energy, environmental and climate change issues by 2012.”

The presidents and prime ministers who will gather at the spanking new Hyatt Regency hotel on the Port of Spain waterfront for their meetings seem particularly keen on biofuel energy as an alternative to oil and gas in transport, as evident by the fact that it has been singled out for special mention in the Draft Declaration. 2015 has been identified as the year by which the nations of the hemisphere well have “developed a set of compatible specifications” in order to “facilitate the trading and increased use” of “both current and next generation bio-fuels, including sugar-based, cellulosic, algal and bacterial bio-fuels.”

Despite the strong emphasis on renewables as the main element in “energy security,” the Declaration recognises that fossil fuels will remain the primary energy sources for the Americas in the foreseeable future, though it stresses that efforts to “clean” them up and to use oil, gas and coal more “efficiently”, should be re-doubled. After all, seven of the ten largest oil and gas discoveries in the world were made in Latin America in 2008, emphasising the continuing importance of hydrocarbons to the region. Most of these were in Brazil, where a succession of sub-salt discoveries, such as Tupi, Iare and Jubarte, has boosted



Photograph courtesy of NGC

Brazil's reserves by tens of billions of barrels.

The US's Energy Information Administration (EIA) confidently predicts that "despite the rapid growth projected for bio-fuels and non-hydro electric renewable energy sources and the expectation that orders will be placed for new nuclear power plants for the first time in more than 25 years, oil, coal and natural gas are still projected to provide roughly the same share of total US primary energy supply – 86 per cent – by 2030 as they did in 2005."

The US National Petroleum Council declared in a 2007 report that the world was "not running out of conventional energy resources" and oil, natural gas and coal would remain "indispensable to meeting projected energy demand growth to 2030." The Council estimated that 339 million barrels of oil equivalent a day (boed, which includes natural gas) would be required in that year, compared with 222 million boed in 2004. 60 per cent of the demand for fossil fuel energy would come from developing countries, a category into which the majority of the nations attending the Fifth Summit fall.

That being the case, "energy security" for the hemisphere must acknowledge the role that traditional sources will play and several countries have been taking steps to ensure the "security" of their existing energy trade in one way or another.

Of course, "security" in energy does not mean the same thing to all Summit states. For example, in the case of host nation, Trinidad and Tobago, which is self-sufficient in both oil and gas, it refers to its ability to be able to sell refined petroleum products to a long-established Caribbean market. One-third of the 160,000 b/d output of its state-owned Petrotrin refinery is gradually being pushed out of that market and being replaced by supplies from Venezuela, under an arrangement called PetroCaribe. Venezuela now has preferential supply deals with 17 Caribbean and Central American states for supplying petroleum products and, in a few cases, crude, in response to their need for "energy security" on the supply side in the face of record high oil prices prior to the world economic meltdown.

It is therefore somewhat ironic that Venezuela has been striving for its own form of energy security by urgently seeking new markets for its crude over the last few years as a means of becoming less dependent on the US, which for decades has taken most of its oil. It has been predicted that China, for example, will be buying as much as one million barrels a day (b/d) of Venezuelan crude by 2011-2015.

At the same time, Venezuela's state oil company, PDVSA, has also done deals with other countries for buying into, or establishing, refineries to ensure its crude can be processed elsewhere than in the US or Venezuela itself. Venezuelan-funded refineries have been earmarked for Jamaica (where it has taken 49 per

cent in the upgrading of the existing Petrojam refinery), Ecuador, Panama and Brazil, among other locations.

The last-mentioned example also reflects Brazil's own desire for "energy security" in refined petroleum products in the future as it joins the ranks of the world's leading oil producers but preferring, as its government has stated, to refine most of that either in refineries at home or those in which it has a stake abroad. Japan's Marubeni has also indicated an interest in helping fund a refinery in Brazil.

As far as natural gas is concerned, Brazil is currently dependent on Bolivia for as much as 50 per cent of its supply which is used mainly for power generation. The price of gas was recently raised by Bolivia to levels reported to be around US\$8 per million British thermal units (mmbtu) which private sector spokesmen in Brazil urged Petrobras, Brazil's giant state-owned company, not to pay.

Clearly, a volatile price situation in gas trading can cause just as much energy "insecurity" as it has done in the case of oil. This would explain why Brazil is seeking to diversify its gas sources through the addition of liquefied natural gas (LNG) which comes by ship, not pipeline. Two terminals for receiving LNG have now opened in Brazil.

Argentina, which also receives gas from Bolivia, is now going the same way and trying to back into the LNG trade. It also faces the challenge of price, as well as recent disruptions in supply because of damage to the gas line caused partly by sabotage.

The "security" of Bolivian gas may also be affected by uncertainty over the future role of the multi-nationals in that country. These companies recently decided to pull back on investments in oil and gas until the government can ensure adequate operating conditions within the framework of Bolivia's new

The U-SOA Draft Declaration places energy security, efficiency and sustainability at the top of the hemispheric agenda

Mexico's aeolic (wind) energy potential is among the highest in the Western Hemisphere



The largest wind power installation in the world is actually located in the oil state of Texas

constitution and hydrocarbons law.

Venezuela, too, downgraded the role of international oil companies in the area in which they were most active – heavy oil recovery in the 55,000 sq km Orinoco belt – but is now apparently having second thoughts as far as that same type of oil is concerned. In order to ensure the “security” of its expanded effort to recover heavy oil, which requires more money and more specialised technology than conventional oil, Venezuela has quietly invited back the multi-nationals to look at four sub-blocks in the Carabobo heavy oil block. As many as 50 international companies were said to have turned up for the formal announcement of this new initiative.

In the case of the development of offshore gas, Venezuela has left this more or less to the multi-nationals, though with PDVSA playing a significant role. The exploitation of offshore gas is essential for supporting Venezuela’s ambitions to finally enter the LNG trade.

How soon foreign companies will make up their minds on the extent of their interest in the heavy-oil effort, remains to be seen. At a time of much lower oil prices, heavy oil recovery may not be economically feasible.

Indeed, the entire exploration momentum is likely to stall in the Americas in 2009 and beyond, even for conventional oil, because of the unfavourable economic situation, creating potential “energy security” problems in the medium to long term. Mexico appears to be one of the very few hemispheric states not to have cut back but actually increased its exploration budget in 2009.

Notwithstanding the reality of the leading role for oil, gas and coal in energy security for several decades hence, the Summit Declaration leaves no doubt that it regards renewables as the ‘fuel of the future,’ so to speak and sets 2050 as the year by which renewable and low-carbon energy sources will meet a minimum of 50 per cent of national primary energy demand.”

The Declaration promises that summit states will “introduce, as necessary, new financing and policy frameworks in order to facilitate this process.”

New US President, Barack Obama, who is expected to be the star of the summit, has already signalled the US’s firm intention to move decisively towards a greater role for renewable energy, at the same time as the effort to ‘clean up’ traditional fossil fuel energy proceeds.

His national budget earlier this year established what analysts described as ‘bold’ emissions-reduction targets of 14 per cent from 2005 levels by 2020 and 83 per cent by 2050. The European Union’s (EU) ‘cap and trade’ model of selling emissions permits will be adopted gradually by the US, delivering projected income of US\$150 billion over 10 years, starting in 2012, which will be used to finance renewable energy initiatives.

In fact, the US private sector has been well ahead of the Federal government in this regard and the largest

wind power installation in the world is actually located in the oil state of Texas. At the local level, 30 states now have renewable portfolio standards and 700 mayors of large US cities signed on to “cap and trade” schemes long before the new administration cottoned on to the idea.

Al Gore, former US Vice President under President Bill Clinton, has done much to sensitise Americans about the deleterious effects of CO₂ emissions, particularly with his documentary film, “*An Inconvenient Truth*.” Gore was awarded the Nobel Peace Prize in 2007, along with the UN’s Inter-Governmental Panel on Climate Change, for his efforts to increase greater governmental and citizen awareness of the issue of global warming.

In Puerto Rico, the US Commonwealth territory in the Caribbean, the government-owned power utility PREPA has contracted a private company to build and operate a US\$165 million, 50 MW, wind farm by 2012. The administration there says it is aiming for renewable sources, like wind, solar, biomass and ocean thermal energy conversion (OTEC) to provide at least 20 per cent of the Commonwealth’s energy needs by 2015.

Again, thanks to the private sector, the US is actually the world leader in a form of renewable energy for the transport sector – ethanol for motor vehicles. The Draft Declaration is referring to ethanol when it speaks of “sugar-based bio-fuels.” Interestingly, it does not specifically mention corn, which is the raw material for ethanol in the US, unlike Brazil, the world’s second largest ethanol producer, where sugar cane is utilised. The US had over 100 ethanol refineries producing over 6 billion gallons in 2008. The US and Brazil, with 4.9 billion gallons, currently account for 70 per cent of world ethanol production and nearly 90 per cent of fuel-grade ethanol.

Since the Caribbean island-nations have had sugar industries for generations, it is only natural that they should also jump on the ethanol bandwagon. Jamaica has been the leader in this regard, with 100 of its service stations being converted to provide a 10 per cent ethanol blend in conventional gasoline from 2008. The state-owned Petroleum Corporation of Jamaica (PCJ) has set up its own Centre of Excellence for Renewable Energy. Even conference host, Trinidad and Tobago, though self-sufficient in conventional energy, is now throwing in its lot with the renewable energy movement.

It will have two privately-funded ethanol plants by the end of 2009, has already experimented successfully with solar energy and the ministry of energy and energy industries (MEEI) recently appointed a Renewable Energy Committee to, as it says, “set the groundwork and guide the path forward to continuously increasing the energy mix between renewables and fossil fuels.”