Most of the thunder has been stolen from my presentation by Jaime Serra, when he used one word to describe the energy reform that recently went through the Mexican Congress: He said it was a joke. I have to say it is a bad joke. I also have to say that, as a result, the oil and natural gas sectors are now more barricaded than ever and that, furthermore, they are on a slide; the two speakers before me have an overly optimistic view of what is going on in Mexico. I think that over the next decade Mexico will increasingly become part of the problem and not part of the solution. I want to put forward four ideas:

- PEMEX has had a lackluster performance over the last decade. For the Petrobras model to be applied in Mexico, PEMEX would first need to be headed by a modern-times Hercules with wide and deep experience in cleaning the stables of King Augeas;
- The gas outlook suggests that imports will rise starting in a couple of years reaching 1.5 BCF by 2016;
- With a few exceptions, the “reforms” that went through Congress decrease the openness and competitiveness of the sector;
- The oil outlook suggests that oil production will continue to decrease: The only issue is how fast.

I. PEMEX’S LACKLUSTER PERFORMANCE

Over the last 8 years, PEMEX’s proven reserves have decreased by more than 40% even though investment in exploration has more than tripled: Thus, Mexico has been eating into its reserves. Replacement ratios have been growing, but they are still less than one-half. We are being promised that probably by 2011, we may get to 100 percent.
On the other hand, over the last 4 years, oil production has fallen by 300,000 barrels.
In contradistinction, the production of dry gas has grown since 2003. The difference with oil production is that “multiple service contracts” were introduced in 2001 for the development of the Burgos Basin, allowing private financing and private firm efficiencies to be brought to be bear in the development of that field — which is a continuation of fields in the US.¹

Given that no refinery has been built in Mexico for the last 30 years but consumption continues to grow, gasoline imports have been growing both in volume and as a proportion of total consumption.

¹ In 2004 the USGS estimated reserves of non associated gas to amount to 12.9 trillion cubic feet (TCFG), http://pubs.usgs.gov/fs/2004/3007/fs-2004-3007.pdf
II. NATURAL GAS OUTLOOK

The outlook for natural gas to 2016 calls for a growing demand and a lack of supply. The rise in demand is attributable to the growing need for electricity generation as a result of GDP growth and as natural gas replaces fuel oil to lessen the carbon footprint. All in all, there will be a couple billion of cubic feet a day (BCFd) of additional demand over the next eight years which will be met by one BCFd of additional production and another from net imports. In spite of the supposed emphasis placed on energy savings in the “reform,” PEMEX — the largest contributor to energy savings — will only save one 100 million cubic feet.

Associated gas production, in yellow in the graph, will continue to decline *pari passu* with oil production, particularly at the Cantarell field. On the contrary, production from Chicontepec, which is being developed with a myriad of small wells, is expected to grow. New exploration is expected to contribute more than 1.5 BCFd by the end of the period.
Since total production is not expected to grow sufficiently, net imports will have to. Part of those will be in the form of LNG through three receipt and regasification terminals: two that are already in operation in Ensenada and Altamira and one that is being built in Manzanillo. Part of these imports will be re-exported to the United States in the early years, but flows will reverse after 2011.
III. THE OIL SECTOR “REFORM”

Now let’s consider the reform package that was supposed to be so earth-shattering that passionate debate went on for a year and a half. When President Calderon submitted his legislative proposal to Congress, he listed several core objectives:

- increase self-rule;
- create a stronger administrative structure;
- reinforce transparency and accountability to combat corruption;
- strengthen sector regulations;
- make PEMEX more accountable for environmental damages.

Hardly momentous. That’s the joke. In fact, the lack of ambition foretold the result. The only moderately reformist proposals were to allow PEMEX to rely on private firms to construct and operate new refineries and to authorize private firms to transport liquid hydrocarbons by pipeline since they are currently permitted to do by trucks. Both were blocked. That’s the dreadful part of the joke.

The avowed purpose of the reform was to strengthen PEMEX hoping to create an oil company that would resemble Petrobras or Statoil, a Mexican dream. A previously released diagnostic had attributed the underperformance of PEMEX to its overregulation: too many taxes; too many financial restraints; lack of managerial autonomy; and an administrative structure that was more akin to a government department than to a company. Since the assessment had been carried out by the secretary of energy and by PEMEX’s management itself, not by independent analysts, it is hardly surprising that the two principal conclusions were: more money, less control. The politically appropriate expression was fewer taxes for PEMEX and less direct control but more regulation. Government officials rarely surrender power. The political consensus in Mexico — in both the executive and the legislative branches and in all three main parties — is that private firms cannot be trusted to refine oil, produce petrochemicals, or transport hydrocarbons. That would have radically changed the structure of the sector and would have eaten into the substantial rents that are appropriated in non-transparent manners under the cover of nationalism.

After eight months of heavy discussions, street demonstrations, and backroom trading, seven new laws were passed:

2. One for the Sustainable Exploitation of Energy creating the National Program for the Sustainable Exploitation of Energy and the National Commission for Energy Efficiency
3. The Energy Regulatory Commission (CRE) was given the mandate to regulate “first hand sales” as well as transportation, storage and distribution of fuel oil, natural gas or basic petrochemicals.
4. The National Hydrocarbon Commission was created to regulate and supervise the exploration and production of hydrocarbons.

5. The secretary of energy was given new attributions as regards energy policy; energy strategy; closer supervision; renewable energy.

6. The secondary (“reglamento”) Law of Article 27 of the Constitution was revised to extend the direct dominion of the Nation over all hydrocarbons in the Exclusive Economic Zone. Transborder Fields are defined and subjected to the same laws as normal field. A new article regulates gasoline stations tightening PEMEX’s monopoly.

7. The New PEMEX Law

On paper it could look like much was accomplished. In reality, there were only two minor reforms:

- One to strengthen the CRE so that it is legally mandated to directly regulate PEMEX’s sales of hydrocarbons to the private sector;
- Another to confirm, as it was established 15 years ago in NAFTA, that PEMEX can enter service contracts with performance-based incentives. Contractors are allowed to receive additional compensations in three cases: if they finish projects ahead of schedule; if they reduce costs by applying new technologies; or if they bring about larger benefits to PEMEX than originally anticipated. Whether that will be enough to draw oil companies into drilling into deep waters remains to be seen, but I tend to be pessimistic. I doubt that the majors will be interested in such a risky venture with limited access to the upside because of the explicit references against production-sharing agreements in the legislation and the impossibility for “contractors” to claim any rights on newly discovered reserves. On the other hand, it is possible to establish contracts to compensate any degree of risk; it remains to be seen if the oil companies and PEMEX go down that path.

PEMEX REFINING, whose annual losses on a cash flow basis are close to 2 billion dollars, is expected to build and run three refineries. If they are built on schedule and on budget it will be proof positive that my modern day Hercules has done his job. It could be considered remarkable that private firms which currently transport liquid hydrocarbons by truck are forbidden to do so by pipeline, unless one realizes that trucks are inherently more difficult to supervise than pipelines and mistakes, errors, tolerances, and compensations are larger in the former case. Finally, the same explanation accounts for the fact that a monopoly on the distribution gasoline in Mexico was created and handed over to PEMEX. Competition by private brands and private distributor would significantly decrease the previously mentioned rents. Those are the components of the dreadfulness of the joke.
IV. OIL OUTLOOK

I postponed a consideration of the oil outlook to ascertain whether the reform makes any difference to the amount of oil that will be produced in coming years. The fundamental story is that known fields are old and that production will thus go down by almost two million barrels between 2008 and 2021. If no new production comes on line, consumption will not be covered and Mexico will become a net importer of oil. That will change the North American outlook significantly.

In the second scenario, we assume that the private sector does not participate in deep waters exploration and PEMEX invests ten billion dollars a year. In that case the fall in Cantarell’s production will be partially compensated by Ku-Maloob-Zaap and Chicotepec, and exports will decrease by 1,300,000 barrels/day by 2016. Given the configuration of the refining system in Mexico, Mexico will actually have no choice but to start importing light oil in 2011 to keep on running its refineries.
OIL PRODUCTION WITHOUT PRIVATE SECTOR INVOLVEMENT

It should be noted though that even under the most optimistic scenario where the private sector could participate in exploration and production in deep waters and investment was 50 percent larger, production would have remained constant. Even in that case, exports would have decrease by 200,000 barrels by 2021. In all likelihood Mexico will stop being a supplier of oil to the United States during the next few years.
The issue that remains to be told is about “prospective” reserves. PEMEX estimates them to be 54 BBOE, 29.5B of which lie below 500m water. Mexico could thus be sitting on a pool of oil and natural gas. If it does decide to go after it, the outlook for oil and gas in North America would have to change. For that to happen though, significant changes have to occur: Hercules has to convert PEMEX into a Statoil or a Petrobras, and the Mexican polity has to reach sufficient maturity to put nationalistic fears to rest and dare to hope. It is going to take a generational change.
V. CONCLUSION

For 30 years, oil and PEMEX have been the third rail of Mexican politics. Once more a president tried to implement an ambitious reform in the hydrocarbon sector but was, unfortunately, unable to do so. President Calderon did obtain a political victory because, for the first time in many decades, the issue was openly discussed in Congress. He was also able to further marginalize radical opponents such as López Obrador, who had tried to steal the election from him in 2006. The result is a reform, albeit limited, that tries to strengthen PEMEX. I am very concerned that this increasing power will not be counterbalanced by sufficient regulation and that damage to the consumer and to productive efficiency will outweigh any supposed gains. How do we know that all the muscle the giant may be putting on will not strengthen its ability to be unresponsive to consumer and industrial needs?

Cantarell, the largest oil field in Mexico, was not discovered as a result of a judicious exploration program. It was stumbled upon. In 1968, a fisherman called Rudesindo Cantarell reported to PEMEX having found strange bubbling, dark gooey material on the surface of the sea as he was looking for some new
fishing grounds. It took PEMEX officials three years to pay attention to the report and more than 10 to start production. Thirty years later, eleven billion barrels have been extracted. It is difficult to figure out what Mexico did with a trillion dollars worth of product.

Mexico faces three options:

- Somehow PEMEX follows Petrobras, rises to the occasion, carries out exploration and production in deep waters, and increases in efficiency. That is our letter to Santa Claus. In that case, for the next 15, 20 years, exports of Mexican oil will decrease only marginally.

- Or, PEMEX does not transform itself, and the decrease in oil revenues triggers a new reform, which is also a little letter to Santa Claus, because Mexicans are very resilient to external forces, as a lot of people in this room know.

- The third alternative is things continue in a slide and Mexico starts importing oil.

Or, what we have always relied on, the one solution we have always had for our problems, the Virgin of Guadalupe has it in her heart to guide us to a new field.

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