

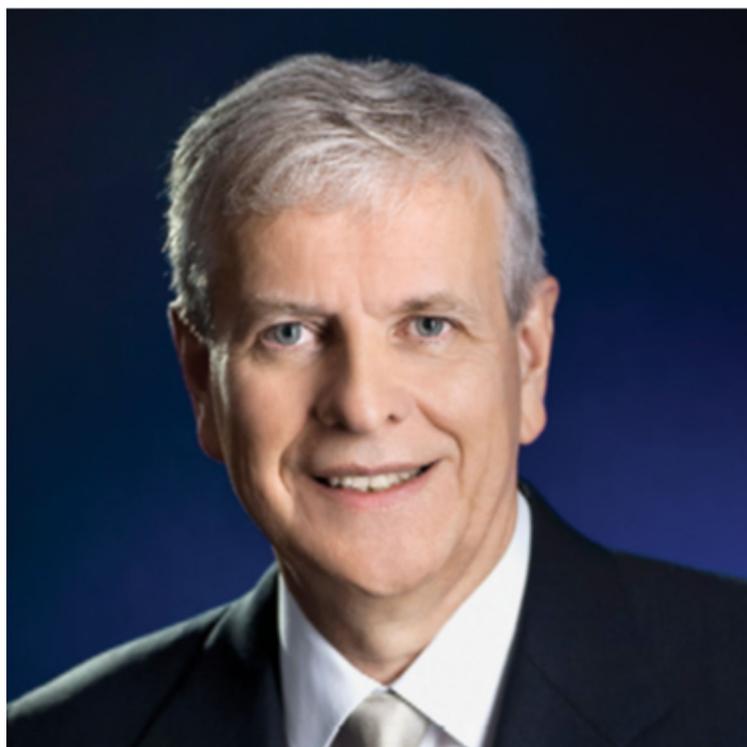
ANZMEX's Energy Matters © vol.2

**ENERGY MATTERS © vol. 2**

an opinion editorial written exclusively for ANZMEX

by

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Mr. Chris Sladen was BP's Mexico Country Manager until last year; he has been a member of ANZMEX from its foundation in 2010 and it was the mind behind the creation of our ANZMEX Energy Debate Series ©

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Energy matters - will oil production go up, or down?

A few days ago, a leading energy lawyer in Mexico sent me the latest crude oil production curve showing the expected daily production rate to 2024. The curve predicts that Mexico's crude production will be much higher in 2024, by almost 1 million barrels per day (1mm bopd). The lawyer's question to me was very simple. Will Mexico's crude oil production in 2024 be much higher than it is today? The two previous Mexican Presidents had said crude production would be higher by the end of their sexenio than at its beginning. It never happened. The new President has said the same thing. The answer matters a lot because oil

production is a pillar for economic success, both creating value, jobs and an economic multiplier effect. So what is the likely outcome in 2024?

Mexico's decline from peak crude oil production of 3.34mm bopd in late 2004 has haunted Mexico continually each year for almost 15 years now. Today's production is ~1.71mm bopd or ~50% lower. How can one of the world's major oil producers lose over half its production in so few years?

First, it is important to understand the key role of the Cantarell oilfield. This super-giant field, among the largest ever found globally, was developed to deliver 2.2mm bopd by late 2004. The excellent reservoir properties enabled Cantarell to yield very high flow rates. But the method of development was not about maximising the recovery of hydrocarbons over time. In other words, it was a short term approach to achieve a very high production rate. It was not focused on the 'long term health' of the Cantarell reservoir as it gradually becomes an aged mature field. And so the decline from peak production has been severe and prolonged. This approach has left behind significant volumes of oil, stranded and in isolated pockets underground in the reservoir. Coupled with insufficient investment and care during its later life, Cantarell now delivers less than 10% of its peak production rate. It has not been a good way to treat an old friend who has given so much to Mexico.

Secondly, replacing the rapidly declining production of Cantarell was always going to be an enormous challenge. A solution was sought in the Chicontepec oilfield. This extremely large oil accumulation onshore is however hampered by very low flow rates from a very complex reservoir. Many billions of US\$ was spent on Chicontepec with no increase in Mexico's total production. Whilst Chicontepec is an extremely large oil accumulation, it is not a super-giant oilfield with the reservoir properties of Cantarell. The technology code needed to unlock Chicontepec remains to be found.

Thirdly, the giant Ku Maloob Zaap offshore oil accumulations were also developed to replace Cantarell. However, with more challenges than Cantarell, such as deeper water depths, lower quality oils and relatively poor reservoirs, they have only partially offset the decline. Many billions of US\$ was spent on Ku Maloob Zaap with no increase in Mexico's total production. And, at the same time, many other fields in Mexico have gone into decline, compounding the problems of the overall oil production decline.

The sums of money needed to slow Mexico's oil decline, and then increase production is simply too much for one company to bear. My estimate would be US\$ ~100 billion on this alone through 2024. It follows that Mexico needs many large investments from many large companies, bringing technology and skills from all around the world, and able to move quickly, with financial strength & budgetary stability, unhindered by bureaucracy and over-regulation. Perhaps surprising to many is that the year of largest investment in Mexico's oil & gas industry was 1981. Yes, 1981.

Producing barrels requires investment. The reality is that to replace the declining oil production of Cantarell, requires either the discovery of another supergiant oilfield of broadly similar characteristics, or the discovery of more than a dozen giant fields of good quality. The latter is more likely, and would require a dedicated search for giant fields, and then rapid developments to create large production hubs.

Production has now fallen to a 40 year low. Drilling wells on small prospects for small volumes will not answer Mexico's desire for significantly increased oil production in 2024.

Drilling many wells where the flow rates are very low will not help much either. Working hard on large mature fields, and investing in maintenance, is always important but this targets the slowing of decline rates; it alone cannot significantly increase overall production. An urgent search for many giant fields, ideally discovering 3 or more each year (say, one every 3-4 months), and the investment to back that effort is probably the only way.

So, in answer to my lawyer friend, I simply replied that 'it is possible to meet the 2024 target, but it is currently very unlikely'. In oil, finding giant fields are what matter!

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