Killing the goose that lays the golden egg

RuD Weijermars and Crispian McCredie, Alboran Energy Strategy Consultants, predict that a massive growth of coal usage is impending due to crude oil pricing itself out of energy markets

T he high oil prices of the third Mil- lennium have benefited the treasuries of oil-producing nations. However, oil dependent governments strapped for cash must be cautioned not to over tax their field assets. They may kill the goose that lays the golden egg. If prices for oil and gas become distorted by tax take, it will make coal the more afford- able energy source.

Coal already has a huge market share of 30% of global energy supply, which comes with a heavy environmental carbon dioxide (CO²) burden. From 2001 to 2011, global consumption of coal rose 56%, as oil consumption slowed. Coal has been the world’s fastest growing energy source. It fuels 41% of world-wide power supply.

Here lies the dilemma for governments seeking to reduce their reliance on coal. Coal does little to meet their environmen- tal goals, but adhering to carbon reduction programmes is costly. For example, the Euro- pean Commission (EC) likes to see itself leading the world in curbing CO² emissions. However, its 2020 objectives potentially lie in ruins and the EU Emissions Trading Scheme (EUETS) has all but collapsed as prices have plummeted. China is no longer alone in its appetite for coal-fired power stations. It is now rejoined by Europe and even the shale-rich US.

The fiscal burden on the E&P companies is shown in Figure 1. Total production expenditure (capex) for reserves replacement have moved E&P into more remote areas of the globe in search of the elusive ‘elephant’ field (>500mn barrels). With the search comes the need to increase internal cost control and assess externalities, such as the uncertainty of the long-term fiscal regime in these new loca- tions. Taxation of hydrocarbon production varies considerably from country to country. The fiscal burden for oil producers can be as low as 4% for offshore production in the US, yet twice as high in Algeria. Indeed, there are as many variants on licence costs, royalties, production sharing agreements and corporation tax as there are hydrocarbon countries.

With the fiscal burden being so differ- ent across the globe, companies must work hard to contain a rise in overall tax burden by skillful portfolio management. There is a distinct trend where the highest tax rates are applied in non-Organisation for Economic Co-operation and Development (OECD) nations. Most non-OECD nations opt for so-called production sharing agreements where the state demands an unpaid equity stake in the field asset, and produc- tion revenues are further levied back to the state via corporation tax. Many emerging oil-rich nations have been successful in their struggle for progres- sion of profit shares from their geological endowments. Energy compa- nies’ assessments of fiscal risk in terms of changes in taxation during a project’s life- time cannot be helped by the fact that of the 16 countries where receipts from hydrocarbon revenues as a share of total government revenues are over 60%, eight nations, or 50%, were ranked in the bottom quartile of Transparency International’s survey of per- ceived levels of public sector corruption. At the other end of the spectrum are OECD countries, which generally apply a concess- ional system comprised of royalty and income tax payments, sometimes accompa- nied by an upfront auction bonus payment.

Rising costs

Although global taxation’s take on oil and gas production has risen in step with oil prices, the present fiscal burden is not what has caused the escal- ation in field development costs. It is the rising complexity of oil fields and demands on technol- ogy, which has pushed up capex over the past decade, as companies seek to maintain their reserve replacement ratios. The rising cost of capex for reserves replacement by major western oil compa- nies is shown in Figure 1. Total production has declined by 6% over the period, so the rise in cost translates directly to an increase of cost per barrel by over 30% for the past decade. A steep increase in reserve replace- ment cost is also seen for Russian oil com- panies (Figure 2), albeit less steep when factoring in production growth, with a dou- bling of capex spent per new barrel added.

The rising capex costs imply that sustained growth of global oil and gas production is only possible if prices remain high enough to justify investment in the costly new fields.

Companies must increasingly invest in R&D to open up new frontiers. More retained earnings are needed to pay for new field development projects. In spite of the rising capex, production output of all the oil com- panies portrayed has not grown significantly. This signals a global struggle to produce af- fordable oil and gas given higher capex and rising government tax rates.

With little choice. Their share prices are underperforming relative to principal market indices in all the major bourses. As E&P companies struggle to find affordable new projects, the global economy will have to cope with sustained $100/b-plus prices.

Looking ahead

Europe is no longer a major oil and gas producer, as it now imports 50% of its gas and 70% of its oil. Importing 10% of glob- al oil and gas production (30mn b/d and 300bn cm³ respectively), Europe trans- fers annually over $500bn to oil and gas exporters. If energy supply remains tight due to political upheavals such as insur- gency or sanctions, then prices will rise further. For example, Russia accounts for 30% of European gas importation. Simul- taneously, governments may be tempted to extract greater fiscal rewards when their economies start to falter.

While shale gas and oil may save North America, European shale production lies well into the next decade. Politically, for the next 10 years, gas is still seen as the replace- ment fuel of choice for base-load power generation, with wind and solar generation meeting off-peak demand. Failure to adhere to a policy of fiscal restraint in oil-produc- ing nations poses a significant threat to Eu- rope’s fragile economy.

Should the EU decide to reduce its de- pendence on Russian gas, coal is once again likely to be the immediate beneficiary. There is little doubt that the accelerating shift to coal consumption is an unintended consequence of oil-rich nations, especially in the non-OECD world, increasing the size of the tax take on oil field development. To avoid killing the goose that lays the golden egg and suffocating the OECD world with CO² from the over use of coal, two events need to take place. Governments must curb their enthusiasm for oil taxation. Oil com- panies must look to better management of their field development costs to ensure that the goose does indeed lay the golden egg from which all parties can benefit.