

OP-ED/DOCUMENTS

Recent Trends In Downstream Project Financing

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This article examines the recent trends in downstream project financing, focusing on refineries, petrochemicals, and LNG. It was written for MEES by Taylor-DeJongh's Senior Associate, Scott Flippen, and Senior Energy Advisor Dianne Rudo.

Introduction

Global demand for energy continues to drive investment in energy infrastructure. In 2006, project finance loans to the oil and gas and petrochemical sectors equaled \$46.6bn, up \$5.5bn over 2005.¹ Spreads are tight and commercial banks have been the dominant force in the market, as lower country risk perceptions and growing project scale have shifted the role of agency lenders (export credit agencies and multilaterals) from providing cover to providing volume. This has been especially true in the GCC, now the new epicenter of energy project finance, due to its abundant resources and growing economies.

The growth trend is set to continue. The International Energy Agency's *World Energy Outlook 2006* estimates that \$2,500bn needs to be invested in downstream oil and gas infrastructure through 2030 globally. Growth in the sector is also adding to the complexity of structuring energy financings. An overheated construction industry has fueled cost escalations, while the sheer volume of projects is beginning to create competition for funds.

Refineries

An estimated 30mn b/d of new refining capacity has been announced to come on-stream during 2006-15, a 35% increase over current capacity levels. This represents a total of 250 projects, including 72 new grassroots refineries and 178 capacity expansions. Last year the *Petroleum Economist's* annual refinery construction survey predicted that 8.9mn b/d of the new capacity, currently in either the construction or planning phases, have a high likelihood of coming to fruition.² This is the equivalent of 25-30 new refineries. In this strong market, many of these new refinery projects will have to address the risk of overcapacity when assessing their financing options.

Proximity to market is one strategy to offset the market risk that accompanies the potential future overcapacity. It is more economical to bring crude oil to a refinery than to transport refined product to market. Therefore a refinery built close to its target markets should be able to capture a larger portion of the transportation margin on its refined product and position itself further down the cost curve. At the same time, stringent environmental regulations in OECD Europe and the US, as well as eagerness on the part of many developing countries to boost their local economies, mean that a significant amount of planned future capacity is in the form of export refineries. These projects will need marketing partners with strong distribution channels and access to diversified markets to mitigate their market risk.

A common feature of current refinery projects is that they are large scale greenfield facilities; sizes up to 350,000-400,000 b/d of nameplate capacity are common. These facilities often need a variety of major complementary infrastructure such as crude oil pipelines for feedstock delivery, port facilities for overseas export, or several hundred megawatts of captive power generation. If construction of these supporting projects is undertaken by separate sponsors, uncertainty regarding costs and timing is increased. Consequently, many sponsors are choosing to wrap these projects into the main refinery project, intending to spin them off once construction is completed. These combined projects can easily cost \$5-6bn, increasing the need for multi-tranche debt facilities that combine commercial bank loans with agency (export credit agencies and multilateral banks) and Islamic financing where appropriate.

Petrochemicals

The petrochemical sector faces risks similar to the refining sector in terms of large new capacity additions and the growing scale of projects, albeit for slightly different reasons. The industry has expanded remarkably in

recent years. Industry consultants Parpinelli Technon expect global ethylene capacity to continue to grow, reaching approximately 170mn tons/year by 2015, up from 120mn t/y in 2005. Capacity in the Middle East is expected to expand by 300% over this time period. Two major factors characterize the sector's recent growth. First, the concentration of new projects in the Middle East due to abundant supplies of low-cost natural gas feedstock has resulted in shortages in material and labor, causing considerable escalation of construction costs. Second, project scopes are growing as sponsors strive for economies of scale by integrating commodity and specialty chemical facilities into a single project. The combination of escalating costs and scope creep continue to nudge the price of these projects higher, creating mega-projects such as the recently closed \$10bn PETRORabigh refining and petrochemical project or the equally large upcoming Kayan project, both in Saudi Arabia.

While these mega-projects face the same risks as more conventionally-sized projects, risk is amplified by project magnitude. The make-up of the sponsor group and the project's commercial structure are both critical to managing these risks. Similar to refinery projects, marketing strategy is crucial to project success. In fact, it is even more necessary with the increased emphasis on specialty chemicals. Specialty chemical markets can be relatively small when compared to commodity chemical markets and are more prone to volatility. Projects that have strong marketers integrated into the sponsor group, such as Sumitomo in the PETRORabigh project, are likely to enjoy much greater success than those that do not.

The size and concentration of deals in the Middle East also raise questions about credit limits for commercial banks. According to *Project Finance International's* league tables, Saudi Arabia was the recipient of \$15.3bn in project finance loans in 2006, trailing only the US and France, and ahead of the large UK market. Within the Europe, Middle East and Africa (EMEA) region, the petrochemical sector received \$15.0bn in project finance loans, almost double that for other oil and gas projects in the region, and the majority were placed in the Middle East.

Commercial banks have led this market. Uncovered spreads below 100 basis points are common, reducing the need for agency lending. This can be attributed in part to improved perceptions of the region's risk. A few years ago, conventional views regarding the region's risk level would not have supported the current pricing and volumes from commercial lenders. Changes in risk perception or pressure from further growth in volume may lead to a swing back to greater reliance on agency sources of financing.

Liquefied Natural Gas

Growth in demand for LNG has increased liquidity within the market and has led to evolving commercial structures, while pushing liquefaction projects into higher risk environments. Regasification projects have stalled, however, as a shortage of LNG supply has hampered the development of new projects.

Historically, the LNG trade has been characterized as a point-to-point (liquefaction plant-to-regas terminal) business, but this model has been changing. Growth in trade has increased market liquidity and commercial strategies have developed to take advantage of arbitrage opportunities across markets. A key to this strategy is destination flexibility.³ Lenders have increasingly granted strategic players this flexibility because they could demonstrate a portfolio of physical reserves and assets to back it. As more participants are drawn to the market by arbitrage opportunities, it will become important for the lending community to become comfortable with greater flexibility on the basis of not only physical flows, but trading portfolios as well.

Global LNG demand is pushing liquefaction ventures into emerging market environments with higher political risk. LNG development has moved beyond its traditional centers, expanding most notably in recent years to the Middle East and West Africa. Large projects in emerging markets will inevitably require the participation of agencies to mitigate the perceived political risks in these countries, as well as to add debt capacity. For example, the recently closed Tangguh LNG project in Indonesia benefited greatly from JBIC and the Asian Development Bank lending \$1.4bn and \$350mn, respectively. Several upcoming projects also appear positioned to receive strong agency support. The Inter-American Development Bank is reported to be lending up to \$800mn to Peru LNG, while the Yemen LNG project is expected to receive heavy support from export credit agencies.

In contrast, regasification projects in developed markets such as North America and Europe can attract sufficient volumes of commercial bank debt with relative ease. Projects such as Sabine Pass in the US demonstrated the

viability of the tolling structure upon which many independent projects are basing their commercial strategy. Under this arrangement, the terminal sells capacity through a long-term, fixed-rate contract to a creditworthy counterparty and receives financing on the basis of the counterparty's credit risk.

However, since the end of 2005 when Sabine Pass closed, there have been relatively few successful terminal financings due to a global shortage of LNG supply, creating a commensurate shortage of suitable counterparties. Many terminal developments are now languishing due to lack of supply and are awaiting the successful development of more liquefaction plants before they will be able to raise construction financing. Access to adequate transportation and storage will be some of the key determinants in which terminals succeed in attracting the next round of LNG suppliers, as this infrastructure is critical to maximizing the value of the LNG.

EPC Contracting Strategy

As the previous discussions indicate, an extraordinary expansion of energy projects is under way. In the Gulf region alone, projects worth approximately \$260bn⁴ are under construction or in the planning stages. The resulting competition for construction material and resources has placed upward pressure on construction costs and made the EPC contracting strategy a critical factor to consider in any energy financing.

EPC contractors are increasingly reluctant to provide full wraps on lump sum turnkey (LSTK) contracts because of surging costs. A shortage of qualified contractors is providing the ability to pass the construction risk to sponsors. Consequently, project sponsors are looking for alternative contracting strategies to the LSTK, such as fixed-price incentives where the final price is subject to a price ceiling, negotiated at the outset.

Conclusion

The oil and gas and petrochemical sectors have experienced a tremendous boom over the past few years. As this growth continues, project financing will remain critical to supporting the expansion. However, increasing pressure on limited resources is already beginning to impact funding options. As competition for funds and expertise increases, it becomes more important for sponsors to exploit every competitive advantage available to their projects, including all available sources of financing.

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1. *Project Finance International League Tables*.
 2. "Profits boom on strong demand." *The Petroleum Economist*. Vol 73, No 9. September 2006. pp 8-12.
 3. Destination flexibility refers to the option to direct LNG cargos to multiple regas terminals. Traditionally, LNG SPAs specified the destination terminal and limited destination flexibility.
 4. "Competitive factors in the rapid oil industry development in the GCC." *Project Finance Yearbook 2006/07*. 16th Edition, p 44.