Economic Commentary
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APICORP’s Review of MENA Energy Investment: Sustained Outlook despite Lingering Uncertainty

This commentary has been prepared by Ali Aissaoui, Senior Consultant at APICORP, to serve as a review of business environment for the Corporation’s 2011 Annual Report.

1. 2011 will likely be remembered as the year of unprecedented political upheavals, sovereign debt crises and economic stagnation, not to mention extreme natural events such as the tsunami that crippled the Fukushima Daiichi nuclear power complex. In the Middle East and North Africa (MENA),1 discontent over inequity, corruption and ill-governance has erupted suddenly, plunging many parts of the region into political turmoil. Equally unsettling have been the geopolitical tensions stemming from a further tightening of US and international sanctions over Iran’s nuclear program, which escalated in early 2012 to include the banning by the EU of vital petroleum trades. Adding to the uncertainty and anxiety, the eurozone debt troubles have re-emerged as a prominent source of risk for global economic and financial recovery.

2. Although these unfolding developments carry far-reaching implications for the region, they neither invalidate our framework analysis of energy investment nor the resulting outlook, as provided in September 2011.2 It is important, however, to review our findings against evolving macroeconomic indicators and energy and credit market trends. Indeed, to the extent that economic growth, energy prices and interest rates are key determinants of investment and financing, the review should help clarify the outlook. Accordingly, the commentary is in three parts: the first highlights the current state of the economy and markets; the second validates our main findings so far; the third provides a timely update of the deteriorating funding conditions.

The Economy and Markets

Global and MENA Economies

3. The global economic recovery witnessed in 2010 and early 2011 suffered a set-back thereafter, largely due to precipitous fiscal consolidations. To contain rising fiscal deficits, most governments around the world decided to cut down on spending, without waiting for private demand to respond to the fiscal stimulus measures they had resorted to. But this is only one dimension of the problem. According to the IMF’s World Economic Outlook, which was released in September 2011 under the theme “Slowing Growth, Rising Risks”,3 recovery has stalled as a result of two important fundamental macroeconomic imbalances. The first, which is endogenous, has to do with the poor response of households and firms to fiscal stimulus and monetary easing. The second, which is exogenous, has to do with current-account-deficit countries unable to take full advantage of higher foreign demand, while current-account-surplus countries failed to shift away from foreign to domestic demand. As a result, growth in 2011 is expected to be 6.2% for emerging market countries and 1.6% for advanced economies. This translates into a weaker world growth of 3.8%, as compared to 5.2% in 2010. Looking ahead, “with intensifying strains in the euro area weighing on the global outlook”, the IMF revised its growth forecast at the end of January 2012 to reflect dimmer prospects (Figure 1).4 Indeed, with Europe virtually in recession and several other parts of the world slowing down significantly, the IMF finally aligned its growth assessment with the prevailing economic consensus. As a result, it sharply cut world growth to 3.3% in 2012, compared to 4% in its September forecast.

4. In a context of stalling global recovery and continuing regional political uncertainties, the MENA region faces even greater challenges. To be sure, the region recovered fairly well from the downturn of 2008-2009 as most countries managed, thanks to higher export-based fiscal revenues, to build enough fiscal space to weather the global recession. As a result, growth accelerated in 2010 to 4.3% before dropping moderately to 3.1% in 2011. However, the unprecedented upheavals of 2011 left many countries vulnerable. Whether or not growth, which is expected to stagnate in 2012, can return to the pre-crisis trend of about 5.5% by 2016, as assumed in Figure 1, depends on the affected countries recovering from the turmoil and the unaffected ones maintaining social and political stability. This is a major challenge, which hinges on the capacity of governments to rapidly develop more inclusive economic development agendas to address the socio-economic problems that have been besetting them - chief of which is providing jobs opportunities for a rapidly expanding young population.

The Credit Markets

5. To encourage banks to expand credit and stimulate the economy, both the US Federal Reserve (Fed) and the European Central Bank (ECB) ended up resorting to unconventional monetary policy measures. Because the Fed’s low interest rate policy, which had already reached its zero bound, is likely to be extended through the end of 2014, extra accommodation will continue to be provided. So far, this has taken the form of two rounds of ‘Quantitative Easing’ and, in September 2011, an ‘Operation Twist’. All such measures consist of purchasing assets on the open market, in the form of long-maturity securities, with

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1 MENA is here defined to include the Arab world and Iran. Energy investment in Sudan is kept inconsequentially aggregated until South Sudan decides on its membership in the Arab League.


3 IME, World Economic Outlook, September 2011.

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the aim of lowering long-term interest rates. Similarly, but to a lesser extent and by different rules, the ECB decided in December 2011 on a three-year financing operations aimed at easing the funding pressures experienced by the European banks.

6. At the same time, six of the world’s most influential central banks (the Fed, the ECB, the Banks of England, Japan, Canada and the Swiss National Bank), announced coordinated actions to prevent panic about the eurozone debt crisis and a possible credit crunch whereby banks would stop lending to each other and pull back on loans to businesses. The Fed would cut the cost of borrowing US dollars to other central banks and they in turn will make it cheaper for their own banks to borrow these dollars by lowering interest rates on the so-called ‘dollar swaps’. This operation is particularly aimed at the European banks, which have been struggling to raise funds on the money market amid growing doubt about their solvency due to their exposure to the debt of troubled eurozone countries.

7. All such operations have resulted in a significant augmentation in banks’ reserves. However, rather than stepping up their lending operations banks actually have used the proceeds to shore up their balance sheets. This is particularly the case of banks exposed to the euro sovereign debt. They have been busy deleveraging by both selling assets and reducing the amount they lend, including to each other. As a result, the interbank market has virtually dried up. This is well reflected in the dollar spread between Libor and the overnight index swap (OIS) - a common measure of liquidity stress, which has indeed risen to a two-year high of 50 bps at the end of 2011 and early 2012, compared to its normal level of about 10 bps (Figure 2).

8. In this context, the real economy has continued to face tight credit markets and relatively high borrowing costs. This is particularly the case in MENA where capital inflows -the bulk in the form of dollar loans- have collapsed after banks reduced their country exposure limits or just pulled back from lending. As a result, after having remarkably recovered to $101bn in 2010, loans extended to infrastructure projects in the region have nearly halved to $57bn in 2011. Furthermore, the margins (over Libor) on these loans, while continuing to trend down from the 2009 peak of 285 bps, have averaged 210 bps in 2011 – still three times the pre-crisis level of 70 bps. As discussed in greater detail later, we should expect unfolding events in the Eurozone and MENA region to affect both the volume and cost of capital required by the more capital intensive energy sector.

Oil and Gas Markets

9. Despite a weakening of the global economy, tight supplies and the loss of Libyan oil exports during most of 2011 have driven up oil prices by nearly $30/bbl above the level achieved in 2010. Given the dislocation between the major oil price benchmarks, this is expressed in Figure 3 by the evolution of the value of the OPEC basket of crudes, which averaged $107.46/bbl in 2011, only slightly below $111.36 for Dated Brent. Looking forward, we expect tight supply to continue putting upward pressure on prices. Conversely, should demand contracts far below supply, we assume that OPEC will be able to offset the resulting downward pressure on prices, keeping the value of its basket of crudes above our adjusted breakeven fiscal price of $90/bbl.\(^5\)

Figure 3: 2011 Tightening of the Oil Market

10. In contrast to the oil market, natural gas markets have been characterized by relatively abundant supply. Current views on the prospects for global unconventional gas have developed a perception of large gas endowment that could lead to excess supply and lower prices. Already, fast growing production from shale gas reserves in the U.S. has resulted in the formation of a ‘bubble’, driving prices below $3/MBtu, a level equivalent to a mere 16% of WTI parity. Going forward, we expect global natural gas prices to keep deviating from oil parity and diverging between markets. Prices are likely to range between $4.5-5/MBtu in fully liberalized markets with abundant domestic supplies (assuming a short-lived US ‘bubble’) and $12-15/MBtu in markets still relying on imports under traditional long term contracts.

MENA energy investment outlook

Overview of Key trends

11. The above key macroeconomic indicators and market trends have not invalidated our September review of MENA energy investment, which is mainly project-based. Neither have the ongoing political turmoil in parts of the region and the resulting negative perceptions of the overall investment climate.\(^6\) In this context our review of MENA energy investment for the five-year

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\(^5\) Adjusted following expansion of fiscal spending to appease or prevent unrest in MENA-OPEC countries. The fiscal breakeven price was originally estimated at $77/bbl in “Fiscal Break-even Prices: What More Could They Tell Us About OPEC Policy Behavior?”, APICORP Research, March 2011.

\(^6\) This has been assessed and updated several times during 2011. The starting material is provided in ‘How the Changing Political Landscape in the Arab World Is Affecting Our Perception of the Energy Investment Climate?’, APICORP Research, April 2011.
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period 2012-16 continue to point to a sustained outlook. The resulting level of capital requirements of $525bn, even if still 15% to 20% lower than potential, is the highest since the onset of the downturn caused by the global financial crisis (Figure 4).

Figure 4: Rolling Five-Year Reviews Of MENA Energy Investment

Geographical Pattern

13. The country-by-country outlook is even more mixed. As for past reviews, the geographical pattern of investment broadly reflects the distribution of crude oil and natural gas reserves in the region. However, this time the country outlook has been greatly affected by the ongoing turmoil. Accordingly, Saudi Arabia (first in the ranking), the UAE (second) and Oman (eighth) have not only managed to bring back previously shelved projects but they have also been able to slate new ones for development (Figure 5). As a result, their anticipated investment is higher than the potential identified in the last review. To a much lesser extent lower league countries such as Morocco (16th) and Lebanon (17th) managed to do the same, while Mauritania (last in the ranking) has stayed put. In sharp contrast, all other countries are below their assumed potential. Obviously the falling off is more dramatic in the countries that have been affected by the turmoil so far, ie Egypt, Libya, Syria, Tunisia, Yemen and to a lesser extent Bahrain.

Figure 5: Country Pattern Across Previous And Current Reviews

14. A little more than two-thirds of the energy capital investment potential continues to be located in the same five countries, namely Saudi Arabia, UAE, Iran, Qatar and Algeria, none of which has faced the sort of upheaval witnessed in the countries aforementioned. As already noted, Saudi Arabia tops the ranking with $141bn. In this country investment has mostly been generated by Saudi Aramco and SABIC as domestic private investors have continued to struggle to attract capital. Taking over from Iran, the UAE has become a distant second with $76bn worth of investment. Tighter international sanctions, and the retreat of foreign companies, have ended up taking a toll on Iran’s energy investment, which now stands at $58bn. Similarly, but for completely different reasons, investment in Qatar has also been on a sharp downturn. With the moratorium on further development of the North Field still in place, energy capital requirements have plummeted to $41bn. The same low amount is found in Algeria where investment recovery seems to be slower than progress in repairing broken governance within Sonatrach.

15. Finally, it is worth highlighting the peculiar circumstances of Kuwait and Iraq, where energy investment has remained chronically below potential. In Kuwait the problem seems to be one of policy paralysis induced by indecisive politics. As a result, major components of the upstream program and key downstream projects such as the giant al-Zour refinery are still to be decided. In Iraq there seems to be no major disagreement about the vital need to achieve the full development of the oil and gas sectors. However, for the commitment to be credible, the federal government needs to pass a long-awaited package of hydrocarbon legislation and provide durable solutions to recurring security threats and logistic complications.

Sectoral Pattern

16. Of the $525bn capital requirements in MENA region for the period 2012-16, the oil value chain accounts for 42%, the gas value chain for 34% and the remaining 24% represent the oil and gas fuelled power generation sector (expenditures for nuclear power generation is implicit in the UAE’s case). As shown in Figure 6, the most salient link is the oil downstream where investment is mostly driven by Saudi Aramco’s program of large scale integrated refining/petrochemical facilities. In contrast, investment in the gas downstream link has declined as a result of Qatar’s moratorium and the consequent pause in its LNG and GTL expansion program.

Figure 6: Sectoral Pattern Across All Reviews

While Iran’s first nuclear power plant, the Bushehr 1 reactor, was officially inaugurated in August 2010 (to be only partially operational in late 2011), Abu Dhabi’s first such a plant is not expected before 2017.
17. The power/water sector has remained a key, steady driver of investment for MENA energy sector. Contrary to other segments of the industry where the review of investment is project-based, the assessment of investment in this sector is growth-based. However, despite sustained expansion, which is well reflected in Figure 6, power supply has fallen short of requirements. As highlighted in the Box below, to catch up with unmet potential demand, this sector needs massive capital whose funding will be most challenging.

**Box: MENA Investment in the Power Generation Sector**

B1 In the current socio-political context, power/water has emerged as a critical sector featuring prominently on top of MENA policy agendas. As a result of high population growth, record levels of urbanization, sustained economic growth and pressing needs for air conditioning and sea water desalination, many countries in the region have been struggling to meet demand. They now face an even steeper uphill struggle as phasing out price subsidies to rein in excess demand growth has become extremely tricky.

B2. Accordingly, power generation capacity is projected to continue growing at an unrelenting rate of 7.7% per year during the period 2012-16. The resulting five-year capacity increment of 106 GW, half of which is in the GCC area, translates into a $126bn investment (see table below).

<table>
<thead>
<tr>
<th>Country</th>
<th>2010 capacity generation (GW)</th>
<th>2010 electricity production (TWh)</th>
<th>Medium-term annual growth (%)</th>
<th>2012-2016 capacity addition (GW)</th>
<th>2012-2016 capital requirements (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCC</td>
<td>96.4</td>
<td>429.8</td>
<td>8.5</td>
<td>52.7</td>
<td>58.2</td>
</tr>
<tr>
<td>Malaysia 7</td>
<td>46.1</td>
<td>247.9</td>
<td>7.6</td>
<td>21.7</td>
<td>27.0</td>
</tr>
<tr>
<td>Egypt 8, Jordan 8, Lebanon 8</td>
<td>29.2</td>
<td>118.4</td>
<td>6.2</td>
<td>10.8</td>
<td>13.0</td>
</tr>
<tr>
<td>Other countries 8</td>
<td>3.1</td>
<td>13.5</td>
<td>7.2</td>
<td>1.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Total</td>
<td>229.8</td>
<td>1,019.9</td>
<td>7.7</td>
<td>106.4</td>
<td>135.8</td>
</tr>
</tbody>
</table>

1 GCC: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates (UAE).
2 May refer to Iraq, Jordan, Lebanon and Syria.
3 Other countries include Yemen and Sudan.
4 Data prior to 2012/13 are taken from APICORP Research.

B3. Raising such large amounts of capital will be most challenging. With domestic and foreign private investment somewhat retreating, governments in the region must pursue two tracks simultaneously and with determination. On the one hand, and as long as the allocation of public resources reflect their policy priorities, they should step in to fill some of the financing gap. On the other hand they have to step up their efforts to provide the assurances critical to regaining the lost momentum of private investment (IPPs/IWPPs).

**Major Challenges**

Cost Uncertainties and Feedstock Availability

18. As indicated by the evolution of our index (Figure 4), the cost of an ‘average energy project’, which has risen almost three times between 2003 and 2008, has resumed its upward trend after declining significantly in the middle of the global financial crisis. However, the relatively moderate 12% upward trend underpinning the current review should not mislead. The extent project costs are predictable depends on the outlook for the price of engineering, procurement and construction (EPC) and its components. These include the prices of factor inputs, contractors’ margins, project risk premiums and an element that mirrors general price inflation in the region. Despite efforts to quantify in a meaningful way each of these parameters, we have found it difficult to infer how up and how long the overall cost trend is likely to be when combining all components.

19. As far as the supply of feedstock (natural gas and ethane) is concerned, we have already discussed at sufficient length the issue. Suffice it to refer to our main findings. While aggregate MENA proved gas reserves are substantial and their dynamic life expectancies are fairly long, acceleration of depletion appears to have reached a critical rate for more than half the gas-endowed countries. If production continues not to be replaced in Algeria, Bahrain and to a lesser extent Iraq (the latter can still increase supply by cutting down flaring gas), this can lead to a supply crunch, obviously sooner for Bahrain than later. The UAE, Oman, Syria and Tunisia would face a similar prospect in the absence of additional imports via respectively the Dolphin Pipeline (Qatari gas to the UAE and Oman), the Arab Gas Pipeline (Egyptian gas to Jordan, Syria and Lebanon), and the transit pipelines to Europe (Algerian gas to Tunisia and Morocco en passant). Furthermore, the supply patterns of Saudi Arabia and Kuwait have reached a tipping point that should trigger further actions to secure supply.

**Deteriorating Funding Conditions**

20. Uncertainties surrounding project costs and feedstock supplies are compounded by a sudden deterioration of funding conditions, which is likely to complicate further the strategic decisions energy corporations in the region make with respect to investment and financing. To be sure, the upstream and midstream sectors should continue to rely on internal financing, either from state budget allocations or from corporate retained earnings. In contrast, transactions in the downstream sector are likely to continue to be structured with higher equity content. Indeed, in a context of widespread deleveraging, the downstream, which normally exhibits a ratio of 70% debt and 30% equity (70:30), has exhibited higher equity levels. In the oil based refining/petrochemical link the debt-equity ratio has been 65:35. The ratio in the gas based downstream link has been 60:40 to factor in higher risks of feedstock availability. In the power sector, the ratio has been reset to 70:30 to reflect much less leveraged IPPs and IWPPs. As a result, the weighted average capital structure for the oil and gas supply chains is found to be 43:57 (Figure 7).

**Figure 7: MENA Energy Investment and Financing**

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21. This structure of capital is comparable to the world’s average of nearly 40:60 for all groups of firms, as supported by empirical analysis of the World Bank’s Enterprise Surveys (WBES) dataset. 9

22. Internal or self-financing of the 57% funds required will be a function of how much growth capital MENA energy corporations generate from their own income, which depends for most of them on international oil prices and their dividend policies. The upstream and midstream links of the oil and gas supply chain are likely to continue to be financed through retained earnings by the national oil companies (NOCs) and their partners the international oil companies (IOCs). In addition, as long as the value of OPEC basket of crudes remains above our revised fiscal break-even price of about $90/bbl, NOCs can expect to complement funding from government budgets.

23. The remaining 43% of the funds required may be sourced from the equity capital market (external equity), the debt capital market (bonds or sukuk) and the banking industry (loans). Whenever possible, MENA energy corporations and their local and international partners would consider using the full range of such financing instruments. Unfortunately, their choice has so far been limited to almost only bank loans. As noted earlier, such loans have collapsed for all industry groups from $101bn in 2010 to $57bn in 2011, ending up representing a mere 1.3% of the world global loans of $4,307bn. In this regard, it is also worth noting that while external financing for the world’s ‘energy’ group represented 23% of the world’s all industry groups, that for MENA accounted for 40% due to the more fixed-asset-intensive nature of the region’s investment. The GCC area was responsible for 77% of all MENA external financing in 2011 resulting in a higher share of 47% (Table 1).

Table 1: Global and Regional External Financing in 2011

<table>
<thead>
<tr>
<th>All industry groups</th>
<th>Energy group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vol. ($bn)</td>
</tr>
<tr>
<td>World</td>
<td>4,306.6</td>
</tr>
<tr>
<td>MENA within World</td>
<td>56.8</td>
</tr>
<tr>
<td>GCC within MENA</td>
<td>43.9</td>
</tr>
</tbody>
</table>

APICORP Research, using IMF and Dealogic

24. The needed annual volume of debt of $45bn, which results from the capital requirements found in the current review and the likely capital structure highlighted in Figure 7, is of the same order as the record of $44bn achieved in MENA loan market in 2010. It is, however, double the level of $23bn finally secured in 2011 (Figure 8). Raising the required amounts of debt in the current context of collapsed loan market and persistently high cost of borrowing will be hardly achievable. The resulting shortfall could be even larger in 2012 and beyond if MENA Public Investment Funds fail themselves to raise capital. These Funds, which have stepped up their involvement in the local loan market in recent years, may indeed be denied support by governments now confronted with more competing social demands for public funds.

Conclusions

25. With stalled global recovery and ongoing regional political turmoil, MENA region continue to face the challenges of uncertain times. However, while lingering uncertainty hampers forecast, it does not significantly affect our assessment of energy investment for the five-year period 2012-16, which points to a sustained outlook. Driven by the oil downstream and the power sector the anticipated level of capital requirements of $525bn, even if still lower than potential investment, is the highest since the onset of the downturn caused by the global financial crisis. Nonetheless, investors and project sponsors are likely to endure many of the same problems. These include cost uncertainty, feedback availability and fund accessibility, with the latter becoming most serious. Given the structure of capital requirement highlighted in the review, internal financing should not be a problem as long as the value of OPEC basket of crudes remains above $90/bbl. In contrast, external financing, which comes predominantly in the form of loans, is expected to remain relatively scarce in face of deteriorating loan supply and high cost of borrowing. Confronted with more pressing social demands, governments in the region may not be able to make up for funding shortfalls. Going forward, the best option should be for policy-makers to strive to keep private investment from losing further momentum.

2011 Issues of APICORP’s Economic Commentary

- ‘Global and MENA Energy M&A : An Investment of Choice or of Last Resort?’, November-December 2011
- ‘READERS’ FORUM - Shifting Business Models and Changing Relationship Expectations of IOCs, NOCs and OFSCs’, August 2011.

9 Reported by Asli Demirguc-Kunt in a post titled “How Do Firms Finance Investment?” dated 6 April 2010, on blogs.worldbank.org