



Energy Sector and Financial Markets: Opportunities for India

Abstract

India withdrew a safeguard duty imposed on imported solar cells and modules in July. The withdrawal was a response to the pressure from renewable energy generation companies, who face declining tariffs for their output—electricity, while their input costs have risen. The duties would have raised costs for solar power. The episode is not just one off. Depending on low cost imports has impacted the thermal power generation sector too. The difficulty to keep cost of power under control is a key challenge for India as is migrate from fossil fuel to renewable energy.

India's energy security too is dependent on low cost imports. Instead a more useful option to keep energy costs low in the long term would be to tap the domestic financial sector. China has already begun to implement it. Can India do it too? India as the fourth\ third largest global importer of crude, third of coal, and 14th largest of gas needs to develop an integrated financial market for energy. The same holds true for its electricity market too and which can create benefits for the South Asian region too. A market denominated in Indian rupee would cut forex risks, create innovative financial instruments to finance the business of energy. It is only a market leveraging India's energy economy that can bring down costs in the long run. It will then provide support to technological growth to make more efficient use of energy.

Introduction

The rising price of import of crude (oil) has blown a massive hole in India's ship of energy security. The RBI data of balance of payments for the first quarter of FY 19 shows the current account deficit is 2.4 per cent corresponding period of previous year 2.5 per cent.¹ It is expected to reach 3 per cent for the full year and most of it because of additional import of crude. In the first quarter itself, RBI data shows India has imported 52.2 per cent more crude year on year in the same quarter by value. The rise is a combination of rise in the price of oil due to falling rupee and higher imports due to a rise in GDP. The trend is likely to persist. An S&P Global Ratings report issued in September estimates "Brent crude oil price per barrel of US\$70 for the rest of 2018, US\$65 for 2019, and US\$60 for 2020, against the current spot price of almost US\$80 per barrel".

Simultaneously there is a rise in the cost of renewable power too. This has come about because of a gradual rise in the price of solar panels imported mostly from China, the key component of solar power and that of consequent rise in the price of power produced by the solar power generation companies. The rising price of land has also fed into the loop.

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¹ Developments in India's Balance of Payments during the First Quarter (April-June) of 2018-19, RBI Press release: Sep 07, 2018

² Sputtering RE needs decisive government help: BRIDGE TO INDIA news report, 5 November 2018

³ All you want to know about... Saubhagya Scheme; Hindu Business Line, Nithya Palani May 21, 2018

⁴ National Energy Policy, NITI Aayog, 2017

⁵ *ibid*

⁶ All India Installed Capacity (in MW) of Power Stations Monthly Progress Report, page 7 (As on 31.07.2018)

By FY 2018 (till August) India has installed 9.1 gigawatts (GW) of solar power against 5.5 GW in FY 17. These are impressive numbers that has taken the country's total installed capacity to 24.4 GW.² The achievements sit well with India's plan for energy security to decarbonise growth as per the commitments made at the COP 21 in Paris 2015.

Essentially then, both in fossil fuel and in renewable energy India faces rising costs when the demand for energy in the economy is shooting up. The rise is fuelled by India's exploding urbanisation. Yet this itself is not the only reason. The government plans to make available an adequate supply of electricity, for all of its citizens even in the remotest rural hamlets. The Saubhagya Scheme or the Pradhan Mantri Sahaj Bijli Har Ghar Yojana aims to reach electricity connection to the 3.21 crore households that still do not have the connection by December 2019. It entails a spending of Rs 16,320 crore, of which 60 per cent will be financed by the centre, 30 per cent through bank loans and the rest 10 per cent by the state governments. Of the total spend, Rs 14,025 crore will be on rural areas.³ In addition work has already begun to move the transport system to electricity. Despite contradictory signals, it is fairly clear that India will move to 100 per cent electric run two wheelers by 2030 while that for for wheelers will be more gradual. But the numbers are already beginning to look awesome.

As a result of these initiatives the National Energy Policy estimates that India's energy demand will increase by 2.7-3.2 times between years 2012 and 2040. (It would be broadly consistent with an electricity elasticity of GDP growth of one). Energy supply in the country is expected to go up by a multiple of around three times over 2012 to 1055-1184 kgoe per capita energy consumption. It is significant to note that the target is lower than what the European Union had consumed at comparable level of development at 3.2 toe per capita. The positive difference is made up by an emphasis on energy efficiency promoted by the Indian government.⁴

It is worth noting that the role of electricity in the overall energy policy of India is a key differentiator from the trajectory deployed by developed countries. While those countries had relied on electricity to power industry-which entailed use of coal and (of late) gas, a large percentage of the needs of the transport sector was based on oil. India instead plans on a different model. This involves both powering household and industrial needs for energy through committed and stable supply of electricity, (this will also include a shift away from imported LPG and kerosene) and also weaning away the mobile energy needs-the transportation sector with both private and commercial automobiles as well as public transport to also shift gradually towards electricity as a fuel. Share of electricity in total energy demand as per National Energy Policy is consequently expected to rise to 26.1 per cent (2030) from 17 per cent now through policy action.⁵

Fortunately, there is leeway in the availability of electricity generation capacity. Of the country's total installed power generation capacity of 345.49 GW as on July 31, 2018, the the current level of peak utilisation is 180.6 GW (FY19). Within the total installed capacity that of renewable energy is 70.65 GW.⁶ This leeway could be wiped out soon.

For India this presents an interesting challenge and a remarkable set of response. While the challenge is to meet the demand and that too at moderate prices, the scale of demand makes it possible to envisage building up a national market for energy.

Why energy security needs a strong domestic financial sector

For this desirable outcome there is a need to develop a market for trade in energy related financial instruments in India. A market for such products would help both fossil fuel and renewable energy. It has certainly not been envisaged so far. But as the latest flare up in crude prices in tandem with the reversal of solar prices indicate, India needs to examine this possibility carefully. In March 2018, China began to trading in oil futures on the

Shanghai International Energy Exchange. “Futures trading would wrest some control over pricing from the main international benchmarks, which are based on dollars”, a Bloomberg report notes.⁷

At present, the world prices of oil, gas and coal are determined by market mechanisms beyond Indian shores. They are also suppliers clubs. The most prominent of those is obviously the OPEC cartel for crude pricing, which came into being in 1960 with five members and then expanded gradually to include 15 members. There have been attempts to create a gas cartel too but that has largely failed.⁸ The Gas Exporting Countries Forum created in 2001 was kept under the watchful eye of leading consumers like the USA and has therefore never attained the traction of OPEC. Coal prices were never cartelised largely because there are too many producers (61 countries) with significant deposits across the globe

Not even OPEC except for brief periods has been able to set the prices, but for all the fuels it is the biggest producers who have largely determined the range between which spot prices have varied. In the renewable energy space, no such phenomena has occurred. The International Solar Alliance largely promoted by India has attempted to be a technology support platform than that of a price setter.

The strength of the suppliers has been determined by the asymmetrical nature of demand and supply for fuels through most of the 20th century and even now. The markets for these fuels riding on the automobiles and power plants were large but the source of supply continue to be restricted. This picture has begun to change.

As the world begins to seriously change from dependence on fossil fuels to that of renewable energy (though still low at 8.4 per cent of global electricity generation in 2016), the balance of power is tantalisingly tilting towards those with the largest demand. These economies are all in Asia-China, India and Japan.⁹ Even in renewables India figures among the top five economies that have recorded the largest increase in volume terms.

As the Chinese experiment demonstrates and sporadic noises from India shows, it is a buyers market now. To make it demonstrably so, it is necessary for India to begin a process of developing an integrated energy market

Why should an entity abroad wish to participate in such a market clearly surrendering some of its present bargaining position. The first reason why this could conceivably happen is that India is now as either the fastest growth or one of those in the set of fastest growing has a buyers advantage. It can deepen this advantage if the proposed market expands to include the South Asian neighbourhood too, estimated to reach over 10 per cent of world energy consumption by 2040. It is to India's advantage to push for developing an onshore market for energy in these circumstances.

A key constraint here is the position of INR. Yet this is also the reason why India should try to draw in energy trading onshore. This will only be possible with a gradual loosening of capital account convertibility of the Indian rupee. It is something with which India has had a chequered history. But in the world of energy there is not much option for India to remain at one position and hope to retain its advantage.

The world market for energy is denominated only in US dollars. The shift in the US dollars from a gold standard in the early 1970s was acceded to by the US treasury only when it was convinced that the world trade in oil, has shifted irrevocably to a US dollar standard. It is unlikely that this position will undergo any shift though pressures are building up. “A multi-currency trading system in energy must be developed to match currency and trade flows. While the U.S. is expected to become a net energy exporter in the near future, China and Japan are heavily dependent on energy imports”. (Kikuchi and Tanaka).¹⁰

In this environment what India needs to do is to allow for deeper acceptability of the INR as a linking currency for US dollar in the international energy market. There are issues here, primarily about the strength of the Indian banking system. Here again the convulsions in the Indian banking system like both the clean up of the NPAs as well as the moves for consolidation of the banking sector are moves

⁷ China is About to Shake Up the Oil Futures Market, Bloomberg, by Grant Clark and Sungwoo Park; March 26, 2018

⁸ Natural gas producers take step toward OPEC-like cartel, New York Times, April 9, 2007

⁹ Denmark leads, with 68 per cent of power coming from renewables. Among the larger EU economies, the renewables share in power is 30 per cent in Germany, 28 per cent in the UK, 25 per cent in Spain, and 23 per cent in Italy-BP Global.

¹⁰ Asia needs yen and yuan energy trading, Nikkei Asian Review, Tomoo Kikuchi and Yohei Tanaka, August 10, 2018

¹¹ Text of Speech of Minister of Petroleum and Natural Gas Shri Dharmendra Pradhan at the Plenary Session of 7th Asian Ministerial Energy Roundtable in Bangkok, PIB release, 2 November, 2017

in the right direction. So the advantage of a deep energy market would be the creation of a strong market for the INR too.

Fortunately for India, some of the elements to make such a market emerge, are already coming into place. These are the laying out of GST (goods and services tax) network, a national grid for electricity and that of increasing harmonisation of state laws on business under the rubric of Ease of Doing Business. The most important of them is the work on developing GIFT as an international financial centre.

Early this year, the NSE broke off an arrangement with the Singapore stock exchange for the non-deliverable forward market in rupee. Talks are on to make it an onshore one at GIFT.

Also the rudiments of a national level integrated energy market are already coming up in India, but as scattered pieces. These pieces include the already operational spot market for electricity and a proposed domestic gas market. These need to be deepened and expanded and of course rolled out fast.

Despite the clear advantage such a market could provide it is not yet sure that the energy ministries and departments are sensitised to the big picture. This has a lot to do with the separation of turf so endemic to decision making in India. But it is very imperative that a realisation of the same happens as only that would give urgency to the projects. A comparison of the financial sector and the energy sector show that the latter is way behind the curve. For instance, it was in October 2017, India had announced an intention to set up a gas market in India.¹¹ A year later, little has moved on the issue.

Once such a market comes into being corresponding levels of innovative financing mechanisms would rapidly emerge. Some of those could also be used to solve India's perennial problem of improving the financial health of discoms. To reduce this problem would need a rational view of the markets, or pricing signals for the sector that would emerge from the markets.

Only then can effective instruments for de-risking of generation projects through an amalgam of innovative instruments be made available. The consequent lower costs would in turn make the downstream discoms buy more power and therefore ensure the necessary end goal of providing larger access of electricity to all.

To sum up then, such a market will serve several purposes:

- it would harness India's position as one of the most significant economies with mega energy needs with the ability to secure the best possible deals, for all energy fuels;
- this would need the development of an integrated domestic market for energy; and
- such a market would force the global players of energy fuels to invest in the domestic market, raising its volume.
- Since such a market would be trading in Indian rupees it would thereby ensure that India would have the pricing power to move in tandem with movements in the price of energy products; and
- it would transfer pricing power from existing hubs like OPEC for crude and gas, as well as for coal to the proposed Indian energy market, ensuring that rising prices do not disturb the quest for energy security for India.

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