A Double-Edged Sword for India’s Energy Sector?
Like several countries before it, on 25th March India’s 1.3 billion population went into a 21-day lockdown,1 enforced by its government in order to slow the spread of the novel coronavirus. The country’s first confirmed case of Covid-19 was on 30th January, with the total number crossing 500 at the beginning of the lockdown.2 Given the trajectory of infection rates in other countries, and India’s density of urban population and constrained access to public health infrastructure, experts have stated that the enforcement of effective social distancing measures in India is critical to containing the spread of the pandemic (PIB, 2020). The lockdown follows a series of other measures3 adopted by the central and some state governments over the last few weeks. It can be assumed that as in every other affected country, these measures are aimed at ‘flattening the curve’ (i.e. slowing down the rate of infection in the population) in order to try and ensure that the number of reported infections at the peak of the epidemic, when it arrives, will not overwhelmingly exceed the country’s limited public healthcare system capacity, which could potentially have a catastrophic impact on its poorest citizens.

While it is still too early to say whether India will manage to buck the global trend by having enforced social distancing early on, the outcome of this unprecedented period holds implications for India’s energy sector, and by extension for international energy markets. The lockdown has resulted in the grounding of flights, near-cessation of all public transport, restrictions on the transport of all but essential goods, and directives to public and private sector employees to work from home – the impacts of which will be clearer over the coming months.

This Comment argues that the net impact on the energy sector is likely to be shaped by three factors: government support measures to mitigate the economic fallout of the pandemic;4 the level of international oil prices – which could constrain or expand fiscal space; and, the global economic impact of the pandemic.

Background – the ‘pre-coronavirus’ economy

India’s economy faced a challenging set of circumstances towards the end of last year. Growth had slowed down to a six-year low of 4.5 per cent in the quarter of July-September 2019, picking up only marginally to 4.7 per cent in the quarter ending in December 2019. Advance estimates now put growth for the year 2019 at 5 per cent, down from 6.1 per cent in 2018 (MoSPI, 2020a).

The underlying reasons for this economic slowdown from previous years – and whether they are structural or cyclical – have been widely debated. For instance, some have attributed the slowdown in part to two successive policy shocks in 2016 and 2017 – the demonetization of 86 per cent of India’s currency, followed by the implementation of its Goods and Services Tax (GST) reform – which may have had an adverse impact on real economic output (Chodorow-Reich, 2018).5 They argue that both shocks hit India’s cash-dependent micro, small and medium sized enterprises (MSMEs) and the informal sector – seen by many as the backbone of the Indian economy – particularly hard, with ripple effects on employment and consumption that became visible in 2019.

Others, such as Subramanian and Felman (2019), argue that the slowdown is due to both structural and cyclical factors: the global financial crisis of 2008 precipitated a fall in India’s export growth, whereas large infrastructure projects that were credit (debt) financed during the mid-2000s began running into

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1 A term currently being used to indicate the imposition of strict restrictions on the movement of people, while exempting essential goods and services.

2 At the time of writing, the number of active cases in India was approaching 4,000.

3 Including the screening and quarantine of incoming air passengers, grounding of flights, and ‘contact tracing’ of confirmed Covid-19 cases. For details see Ministry of Health and Family Welfare. https://www.mohfw.gov.in/index.html

4 This is distinct from necessary expenditure on the public health system, which will be a priority, and is likely to be augmented by external support. At the time of writing, US$1 Bn of financial support had been sanctioned by the World Bank, towards combating the epidemic.

5 Also see Srinivasan (2017). It has been suggested that the implementation of these policies rather than their underpinning principles per se, led to adverse impacts.
financial problems by the late 2010s. Economic growth continued despite these problems (as well as the two aforementioned policy shocks), supported first by income gains from the drop in international oil prices in mid-2014, then by government spending and a non-bank financial company (NBFC)-led credit boom. Credit from the latter was injected mainly into the real estate sector in an unsustainable manner, creating a bubble; Subramanian and Felman (2019) argue that this pushed the economy past a tipping point, impacting consumption and causing the economy to finally slow down in 2019.

Attempts were made to address the slowdown, including the recapitalization of public sector banks and NBFCs, the passing of a bankruptcy code, corporate tax cuts and efforts to support infrastructure investment, all of which had limited effect. There has also been much debate in the academic literature on the methodological accuracy of estimation of GDP growth rates, following a revision in 2015 to the baseline year that is used to compute the National Accounts Statistics. India’s recent Union Budget (announced in February 2020) listed seven indicators of ‘green shoots’ in the economy for 2020, including improved global sentiment, rising net portfolio investments, a rebound in industrial activity, an increase in forex reserves and growth in GST collections (Gol, 2020a).

It is against this context of an economic slowdown however, that India now has to contend with the economic impact of the pandemic. At the time of writing, the country’s 2021 GDP growth forecast had predictably been revised downwards by many ratings agencies. Indeed, the real economic impact may be far deeper than expected, as statistics may not fully reflect the likely massive impact of the pandemic-induced slowdown on India’s informal sector, which by some accounts is said to employ somewhere between 85 and 93 per cent of the workforce (Mohanty, 2019). The next section sets out some observations on the balance of policy trade-offs that could determine the potential implications of the crisis caused by the pandemic for India’s energy sector, based on past experience.

Fiscal security – keystone of energy policy

To understand the potential impacts on its energy sector, it is useful to look at a key element of energy policy, which relates to the issue of ‘energy security’. It can be argued that for a net energy importing nation, ‘energy security’ is synonymous with fiscal security, rather than solely with the security of physical supplies. India meets a substantial proportion of its domestic energy demand through imports (primarily oil, plus LNG, and coal). Energy imports have typically formed a major proportion of the total import bill; this can be seen in the ‘oil’ versus ‘non oil’ trade balance and oil as a significant percentage of total imports, in Figure 1 below.

At the same time, the government subsidizes specific petroleum products (i.e. LPG and kerosene) and products for which hydrocarbons are used as an intermediate input (e.g. electricity produced from coal and natural gas; fertilizers produced from natural gas) to certain categories of consumers.

Over the last 10 years, there has been a process of gradual rationalization of petroleum product subsidies – petrol (gasoline) price subsidies were removed in June 2010, and diesel prices were gradually deregulated by October 2014. Policymakers took advantage of the fall in international oil prices in 2014 to gradually liberalize the retail prices of selected petroleum products, while at the same time raising revenues from higher excise duties imposed on these products, implying that the full effect

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7 At the time of writing, the range of 2021 GDP forecasts include 3.5 per cent (S&P), 3.6 per cent (India Ratings and Research) 2 per cent (Fitch Solutions), 5.2 per cent (Moody’s ratings– up from a forecast of 2.5 per cent for calendar year 2020) and 2.1 per cent (Economist Intelligence Unit). It should be noted that forecasts are likely to be frequently revised in periods of uncertainty.

8 The trade balance reflects exports less imports.
of falling oil prices was not immediately passed on to consumers, but instead that the windfall was used to create fiscal headroom.\footnote{9}

Figure 1: Oil & Non-Oil Trade Balance (LHS); Oil as % of Total Imports\footnote{10} (RHS)

Source: RBI Bulletins (various); GoI (2020a)

Jain (2018) describes how the application of three simultaneous levers of policy reform – retail price reforms, tax increases on petroleum products, and reduction/reform of subsidies – concurrent with the drop in the crude oil price, led to a reduction in India’s oil subsidy bill from $24.6 bn in 2013 to $1.16 billion in 2017 (see Figure 2). The channels of subsidy distribution were restructured, by instituting direct benefit transfers to eligible consumers’ bank accounts, and caps (e.g. limiting the number of subsidized LPG cylinders to each household based on need or income group). Retail prices of most petroleum products (notably petrol and diesel) have been adjusted daily by India’s oil marketing companies since June 2017.

Figure 2: Total Subsidy Bill, 2004-18

Source: RBI Bulletins (various); GoI (2020a); Note: Data reflects Union subsidy bill

\footnote{9} Tax revenues from petrol and diesel increased from 0.44 per cent of GDP in 2013/14 to 1.44 per cent of GDP in 2016/17. This reportedly helped finance a reduction in the fiscal deficit, from 4.5 per cent to 3.5 per cent in the same time period (IISD, 2017; Kundu, 2017).

\footnote{10} Based on value.
Given the substantial impact of energy on the trade balance, India’s energy policy, it can be argued, has been closely tied to managing the impacts on the balance of trade (and specifically, the energy import bill). The economic indicators that reflect this impact are the current account balance (or current account deficit, in India’s case) and fiscal deficit. A worsening of the current account balance – say through higher international oil prices – could feed into the fiscal deficit through a higher subsidy bill, that would in turn need to be financed by government expenditure.

The opposite effect may apply when oil prices fall – improving the current account balance, lowering the total subsidy bill, and reducing the fiscal deficit. It has been estimated for instance, that every $10/barrel decline in international crude oil prices turns into a saving of roughly $15 billion in India’s net oil import bill (benefitting the current account balance); one rough estimate puts the fiscal headroom that could be created by this at $1.9 billion, gained through subsidy savings (Bloomberg, 2020). This creates some fiscal space to carry out other stimulus and reforms, or to raise more revenues (e.g. from increasing excise duties on petroleum products).

Global economic activity, and specifically the competitiveness of Indian energy companies – such as export refineries – in the international energy market, also influences fiscal security, as export revenues contribute positively to the trade balance.

Figure 3: Current Account Deficit (CAD, % of GDP), GDP Growth (%) & Indian Crude Import Price (US$/barrel)

This policy mechanism arguably holds not just for oil but also to some extent for imported LNG and imported coal, which also feed into the twin (current account and fiscal) deficits. A key distinction is however, that the liberalisation of retail petroleum product prices exposes oil consumers directly to oil price volatility, whereas for gas and coal this is less the case: Indian gas prices for long-term contracted LNG imports have a lag to international oil and gas prices, while domestic gas is sold at prices that are

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11 An example is evident in the fertilizers (urea) sector which is state owned and operated. The retail price of urea (along with other fertilizer products) is subsidized (at nearly 50 per cent) to the farmer to ensure affordability. The total fertilizer subsidy (which is India’s second largest subsidy, after food) is mainly driven by the differential between the prices of its main competing inputs - domestic gas, imported LNG, and imported urea - with government policy usually favouring the cheapest of these inputs, which in turn drives the consumption (including imports) of that input (Sen, 2017).

12 This relationship is now weaker with the deregulation of transport fuel pricing, especially diesel.

13 Ceteris paribus.
adjusted at six-monthly intervals by the government. Similarly, imported coal forms a small proportion of India’s energy import requirement (and overall import bill), given the country’s large coal reserves.

Implications for the energy sector

The countrywide lockdown initiated by the epidemic will seriously disrupt economic activity in the short- to medium-term, as is already evident in downward revisions for multiple third-party growth forecasts for India. An UNCTAD report released in March predicted that despite stimulus packages translating into a US$1 to US$2 trillion injection of demand into the major G20 economies, the world economy will go into recession this year, with developing countries severely impacted, but with the likely exception of China and the possible exception of India, which will nevertheless experience economic slowdowns. This outlook could evolve further, depending on the length and severity of the pandemic.

This disruption will impact India’s energy consumption in different ways: a sharp drop in the demand for aviation turbine fuel, declines in gasoline and diesel demand, potential increases in the demand for LPG and piped gas for cooking, and an unclear outcome for electricity demand. There will also be knock-on effects, for instance on upstream company finances, on energy marketing and distribution companies, on the energy trade balance, and on energy users.

How quickly economic activity begins to recover in the medium-term, especially in relation to the Indian energy sector, will depend on the balance between three factors:

- government fiscal and monetary support to manage the shock to the economy in the short-term;
- the level of international oil prices; and,
- the impact of the pandemic on global economic activity.

The first two factors are interlinked, as discussed earlier. India recently announced a package of measures mainly aimed at supporting unorganized sector workers, especially daily wage workers, and the urban and rural poor. The package includes cash transfers, food grain rations and LPG supplies using the Public Distribution System, to cover a three-month period from 1st April. Other measures, such as loan repayment waivers have also been introduced for a three-month period, with the federal government also committing to continue paying into Employee Provident Funds (a retirement scheme for Indian workers) on behalf of employees and employers for three months. No stimulus has been announced for industry and commerce, although there has been some speculation around ‘sector-specific’ stimuluses (NIE, 2020).

The relief package amounts to just under 1 per cent of GDP, or roughly $22 billion – a proportionately smaller amount compared with measures announced in other countries affected by the pandemic, such as the US (10 per cent of GDP) or the UK (15 per cent), but further relief measures and/or stimulus could follow in the coming months. Should oil prices continue to fall or even remain at sub-$50/barrel levels, this could create some fiscal space for measures, such as higher government expenditure, or raising additional tax revenue, to support the economic recovery. There are already indications of this - for instance, an amendment to the Finance Bill passed on 24 March, permitted the government to raise the limit up to which it can increase special excise duty on petrol and diesel (ET, 2020a).

The second factor is the level of international oil prices. The current low-price environment was triggered by a combination of a demand shock and a supply shock. One can assume that demand will continue to fall as a consequence of the pandemic. Low oil prices typically provide a stimulus to demand (as was the case in 2014 for India – see Figure 4). However, the medium-term impact of sustained low oil prices is as yet unclear. One possibility is that the supply-side shock (from the cessation of production and distribution of all but essential goods and services) may well be followed by a second round of demand-

15 At the time of writing.
side shocks, due to unemployment and falling demand from the first round (supply-side) shock – negating any stimulus from low oil prices. Another possibility is that low oil prices could support a well-timed stimulus package aimed at specific industrial sectors.

**Figure 4: Year/year growth in India oil consumption (thousand b/d) vs India crude oil price (US$/barrel)**

Source: PPAC (2020)

The composition of India’s petroleum product demand may undergo a short-term shift: higher LPG demand and lower diesel (Light Diesel Oil and High-Speed Diesel) demand. LPG growth has mainly come from a policy drive to replace kerosene in household energy use (see Figure 5 below). India imported 14.5 Million tonnes (Mt) of LPG in 2019, up 19 per cent from the previous year as demand (at 27 Mt, a nearly 8 per cent increase on the previous year) outpaced production growth (Mohanty, 2020). India’s federal government has pledged one free LPG cylinder per month for the next three months to over 80 million poor households as part of its relief measures.

An anticipated increase in household LPG demand recently created concerns around the availability of LPG supplies – even prompting India’s oil minister to seek assurances from Saudi Arabia over the adequacy of LPG imports (Saadi, 2020). However, although the concerns around a potential supply shortage may have risen from the fact that Indian refiners have sharply cut back their runs due to a drop in the demand for the major petroleum products, the perceived problem may be more to do with infrastructure and logistics; specifically, the difficulties around scaling up supplies in a lockdown, due to local staff shortages and transport bottlenecks.

Low oil prices are also likely to impact India’s domestic oil and gas production, through adverse effects on upstream oil companies’ profitability. Some of India’s main upstream oil producing companies\textsuperscript{16}, indicated that they would not resort to cuts in planned capital expenditure and project expansion plans (Abdi, 2020a) – but these plans could be delayed in a falling oil price environment.

\textsuperscript{16} India produced 869 thousand b/d and consumed 5.16 million b/d of crude oil in 2018 (BP, 2019).
The third factor shaping the implications for the Indian energy sector pertains to the global economic impact of the pandemic, and the fallout for the competitiveness of Indian energy companies in global energy markets. Refiners are a key part of this, as India’s refining capacity has expanded significantly over the past two decades (see Figure 6), and petroleum product exports also contribute positively to the trade balance, potentially easing the twin deficits.

**Figure 5: Consumption of Petroleum Products (million tonnes)**

Source: PPAC (2020a); *April 2019-February 2020

While refiners’ margins initially benefitted from the decline in the oil price, declining product demand worldwide, due to lockdowns initiated by the pandemic, has begun to have adverse impacts as product tanks rapidly fill up with the current oversupply, and freight rates spike. As a result of this, two Indian refiners, MRPL and IOCL, recently had to shut down a portion of their refining capacity, declaring force...
to their vendors and suppliers in order to cease having to make further payments (Verma, 2020). In contrast, the current global oil price environment presents an opportunity for India to fill up its Strategic Petroleum Reserve (SPR), which contains roughly 39 million barrels of storage space, of which half is reportedly empty (S&P, 2020). This is seemingly underway, despite some logistical barriers – some capacity in the SPR was originally reserved through MoUs signed with ADNOC and Saudi Aramco, but the Indian government has indicated that it is open to other options (e.g. purchasing oil from other sources, or asking Indian state-owned oil marketing companies to provide supplies) (ET, 2020b).

The global economic impact is not limited to oil; prolonged low global gas prices could benefit Indian energy importers and gas consumers, as gas at a price significantly below $5 per MMBtu could become economically viable in consuming sectors such as power generation (Sen, 2017). The structure of India’s gas consumption has changed over the last four years, with LNG imports steadily rising, and accounting for around 50 per cent of consumption (up from around 30 per cent in 2012). In fact, India imported a record amount of LNG in February 2020 – but due to the restrictions on movement and trade imposed to tackle the spread of the coronavirus, demand fell in March (Hellenic Shipping News, 2020). India in recent years has also had a series of successful renegotiations to lower the price for long-term contracted LNG with several suppliers, including RasGas Qatar, Gazprom and ExxonMobil. The proportion of LNG procured on the spot market has also risen, signaling the country’s residual buying power in an oversupplied market. Recently, Petronet LNG was among a few Indian companies that have reportedly served a force majeure notice to their suppliers (in Petronet’s case, Qatargas), seeking a delay on deliveries due to the economic effects of the lockdown (Reuters, 2020).

Figure 7: India – Illustrative Price Elasticity of Demand for LNG

Source: Sen (2017)

The pandemic could temporarily disrupt global supply chains for renewable energy – India, which has a target of achieving 175 Gigawatts of renewable generation capacity (mainly solar) by 2022, imports nearly 80 per cent of its solar cells requirement from China. Renewable energy projects are also capital intensive, and hence reliant on the availability of liquidity in the system, which could be constrained in the short-term as a result of the pandemic – renewable energy developers are therefore likely to seek project extensions through invoking force majeure (FE, 2020a). Recent data from India’s state owned Power System Operation Corporation Limited (POSOCO) showed that electricity consumption fell by 26 per cent in the ten days following 18 March, attributing it to the slowdown in economic activity as confirmed coronavirus cases began to increase and measures on social distancing began to be introduced (Abdi, 2020b). In the long-term, falling electricity demand could reorient India’s long-term
strategy on renewables from building out new capacity, to utilizing existing capacity in an efficient and flexible manner. In the short-term, it could impact cash flows in the electricity distribution sector, exacerbating financial problems in the power sector.\textsuperscript{17}

**Conclusion**

The coronavirus pandemic is just beginning to take hold in India, which instituted measures on social distancing and a 21-day lockdown at a relatively early stage in comparison with many other countries. Third party forecasts for economic growth in 2021 have been revised downward, although these may not fully reflect the economic impact on India’s massive informal sector. Although time will tell whether the measures taken thus far will succeed in “flattening the curve” and enabling the beginnings of a recovery in economic activity, the implications for India’s energy sector, could go either way, partly contingent on the three key factors laid out in this Comment:

- government support measures to mitigate the economic fallout of the pandemic and the fiscal headroom available to implement them;
- the level of international oil prices – which could constrain or contribute to fiscal space; and,
- the global economic impact of the pandemic, and its effect on the competitiveness of India’s energy sector.

The unprecedented nature of this crisis may also present opportunities for reforms towards other important goals such as environmentally sustainable and socially equitable growth, as the government may seek to expand the fiscal space available to it to support domestic economic activity through the coming months. The pandemic could be a double-edged sword for the Indian energy sector; and given India’s massive consumer base and expected contribution to global energy demand, the outcome will matter for international energy markets.

\textsuperscript{17} Bank lending to the power sector has contributed to a large proportion of nonperforming assets in the banking sector, although this had reportedly declined at the end of 2019 (FE, 2020b). Also see TOI (2020).
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