Occasional Publication 114

IIC

Sectoral Policy Group: Security

Ukraine–Russia Conflict

India's Energy Security

by

Shebonti Ray Dadwal

Group Convenor: C. Uday Bhaskar

INDIA INTERNATIONAL CENTRE IIC where ideas grow

40, Max Mueller Marg, New Delhi–110 003

Tel. : 24609499

Sectoral Policy Group: Security

Occasional Publication 114

IIC

Ukraine–Russia Conflict

India's Energy Security

by

Shebonti Ray Dadwal

Group Convenor: C. Uday Bhaskar

The Occasional Publication series is published for the India International Centre by Kanwal Wali.

Designed and produced by Naveen Printers, F-11 B, Okhla Industrial Area, Phase-I, New Delhi - 110020 Ph.: 011-40523313, Website: www.naveenprinters.com

Ukraine–Russia Conflict: India's Energy Security

Shebonti Ray Dadwal

Any major upheaval or crisis in any part of the world, particularly one that involves an energy-producing country, has an immediate impact on the energy markets. But, barring the first 'oil shock' in 1973, which caused an initial spike in prices, the markets have settled down, particularly once it is established that the energy supplies will not be affected. However, since February 2022, following the onset of the Russian–Ukraine conflict, energy security has returned to the forefront of national security concerns. Oil and other energy prices are climbing to record levels, hovering around US$100 a barrel. In a recent report, the International Monetary Fund (IMF) stated that the Ukraine war will severely set back global economic recovery from the COVID–19 pandemic, increase inflation, cause grave risks to the financial system, and even potentially fragment the world economy into geopolitical blocs (Gourinchas, 2022: 10–11).

What makes the current conflict different from earlier crises? After all, the canvas of the conflict is essentially restricted to the European theatre and should, therefore, have limited fallout. Even when Russia attacked and annexed Crimea in 2014, the energy markets did not witness the kind of reaction and response the current Russia–Ukraine conflict is experiencing.

Several reasons can be attributed to this. Goldman Sachs has stated that the world could now face one of the 'largest energy supply shocks ever',[1] while some other financial institutions and energy analysts have suggested that oil prices could go up to US$200 a barrel (Dempsey et al. 2022). While this figure may be exaggerated, there is no doubt that Russia is the largest producer of overall fossil fuels (oil, natural gas and coal) and a key exporter of energy resources. It is also a

major producer and exporter of food grains, wheat and sunflower oil, as well as metals like palladium, titanium, nickel, aluminium and copper.[2] More importantly, the European Union (EU) was overwhelmingly dependent on Russian energy, particularly gas.

Over the last few years, oil and gas production had dropped steadily as energy demand fell due to the COVID–19 pandemic. The Organization of the Petroleum Exporting Countries (OPEC)–US oil price war, which saw Saudi Arabia flood the market with oil to prevent US shale from taking away market share, also saw prices drop to unprecedented levels, which in turn caused investments in production to decrease. Although demand did increase towards the end of 2021, the lack of timely production saw supplies become tighter as it is technically difficult to ramp up production in a short period. The OPEC+ agreement to cut production by 10 million barrels a day (mbd) in April 2020 also contributed to the supply shortfall.

Therefore, when incrementally stringent sanctions were imposed on Russia by some 30 countries, and Moscow retaliated by cutting some oil and gas exports to sanctioning countries, mainly in Europe, it created a major upheaval in global energy supply chains. The EU, the US and some of its allies also froze the overseas assets of several Russian banks to stop Moscow from using the US$630 billion in reserves it has in foreign currencies and blocked access to the international financial messaging system, Society for Worldwide Interbank Financial Telecommunication (SWIFT), to major Russian banks, which made it difficult for buyers of Russian oil to pay Moscow for its energy and other exports. Ironically, the Russian energy sector per se was not sanctioned, although some countries, including the US, the UK, Australia and Canada, have banned the import of Russian energy resources. Moreover, several European countries expressed their intention to wean themselves off Russian energy imports altogether from the end of 2022.

Despite the sanctions, Russia continued to earn substantial revenues from fossil fuel exports. According to some reports, Moscow's earnings from oil sales increased to a 38 per cent rise per year from 2021 till August 2022,[3] and around US$15 billion

in September 2022 alone. Subsequently, the G7 countries agreed to a US plan to impose a price cap on Russian oil sales—possibly between US$63–64 per barrel—to limit Russia's revenues but keep the market sufficiently supplied. The plan, which envisaged two price caps—for crude and refined products—targeted the key logistics services they controlled from 5 December 2022 and 5 February 2023, respectively. Insurers and shipping companies would be prevented from moving Russian seaborne crude and petroleum products unless they are purchased at or below an unspecified price threshold. Since 90 per cent of the world's ships are covered by the International Group of Protection and Indemnity (P&I) Clubs, many of them based in London with European entities or reinsurance partners, and hence fall under EU regulations, it will be challenging for Russia to acquire the number of vessels required to export its oil if Western insurers refuse to cover its cargo.

However, the success of the price cap strategy is not a certainty. First, Russia may find alternative shipping and insurance services to transport its crude, or worse still, if it carries out its threat to halt all deliveries to countries supporting the price cap, it will increase the volatility and uncertainty in the oil market. Second, oil is a global commodity, and selectively targeting oil produced in one country will be difficult to monitor. Third, with OPEC+ announcing their decision to cut production by 2 mbd from November 2022, the oil prices may escalate, which in turn might make many Asian countries, apart from China and India, opt for discounted Russian supplies.

Can Russian Energy be Replaced?

Given Russia's position as a major oil and gas producer, can the G7's attempt to replace Russian energy resources succeed?

Before the conflict, Russia was the third largest producer of oil accounting for 14 per cent of the global oil supply. More importantly, it is the second largest producer of gas but the largest supplier, accounting for around 40 per cent of

Europe's gas supply,[4] and also for around 18 per cent of the global coal trade.[5] Hence, as the OPEC Secretary General Mohammed Barkindo said that the potential loss of more than 7 mbd of Russian oil and other liquids exports, resulting from current and future sanctions or other voluntary actions, would be impossible to replace.

Along with oil prices, natural gas and liquid gas prices have also escalated, as several EU countries lowered their imports of Russian gas. Moscow too began decreasing piped gas exports to Europe from June 2022 and from late August 2022 shut down Nord Stream 1, which supplied about 35 per cent of all the gas Europe imported from Russia, citing sanctions-affected equipment problems. Although the US and some other countries have been trying to fill the gap left by Russian gas, and the EU has reported that their gas storages are almost full, the International Energy Agency (IEA) has warned that the EU is still at major risk of supply shortages. Although alternative gas suppliers besides the USA have been contracted, including Azerbaijan, Armenia, Egypt, Algeria, Mozambique and other African producers, the supplies will be in the form of LNG. With around 40 per cent of Europe's gas coming from Russia through its pipeline network, creating the infrastructure for LNG will take time to completely replace Russian supplies. Moreover, American gas exports, which are at their highest currently, are expected to fall over the next two years as demand within the country increases over falling supply, which all points to a possible further hike in gas prices. The situation could be further exacerbated if demand from Asian countries increases. Even if some Middle Eastern, Australian and African producers are willing to sell LNG to Europe, it will be more costly. In particular, Middle Eastern producers are the main suppliers for Asia, and many have long-term contracts with these countries. Recently, QatarEnergy CEO Saad Sherida al-Kaabi said although Qatar is working to expand its gas production and trading operations, it will not divert LNG contracts with Asian buyers to Europe this winter (Mills, 2022). Even if some LNG contracts are diverted to Europe, it will lead to a shortage in the market, pushing up prices further. Little wonder therefore that Fatih Birol, the International Energy Agency (IEA) chief executive, stated that the world is in the middle of 'the first truly global energy crisis.'[6]

Finally, will Russia and OPEC sit by idly and lose market share to America? As has been seen in the past, America will be able to manage everything except a price war. If the big exporters slash their prices (as Russia recently did by offering heavily discounted crude to India) there is very little America can do to deter buyers from accepting low prices. Also, with rising prices, demand is bound to fall, leading to a concurrent drop in prices.

Impact on Global Energy Markets

While it is still too early to accurately predict any future scenario of the energy market, the conflict raises the possibility of restructuring the energy markets.

Following the sanctions imposed on Russia, President Putin announced that henceforth, Russia would prioritise supplies towards the South and East, as opposed to Europe, hitherto its main market.

This has sent the European governments into a panic over future supplies and prices. As a result, the EU, which had till late last year refused US LNG on the grounds that shale-based fuels were 'dirty', has now committed to receiving 50 billion cubic metres (bcm) of US LNG till 2030. In fact, the EU and the current US administration, which were championing the move towards clean energy, are now revising their policies towards fossil fuels, partly due to the inadequate pace of renewable energy (RE) build-up.

No doubt, the EU has taken several steps to alleviate dependence on Russian energy and tackle higher energy prices, albeit not in the immediate future. It has already surpassed 91 per cent of the gas in storage, with the share of Russian pipeline gas dropping from 41 per cent in 2021 to 9 per cent by September 2022, with LNG now comprising around 32 per cent of the EU's total net gas imports; moreover, 12 per cent of the EU's electricity is generated from solar and 13 per cent from wind energy. The longer term plan is to generate 69 per cent of its electricity from RE by 2030.[7]

However, according to Shell's Sky scenario, although renewables will dominate electricity soon after 2030, in 2100, the industry will continue to use some fossil fuels for processes that require intense heat. Meanwhile, the transport sector will continue to use hydrocarbon fuels to power some ships and planes.

Nonetheless, the war and the actions of some governments have brought home the message that although eventually, the transition to clean energy was essential, even if challenging, in the short and medium terms fossil fuels would continue to be the dominant source of energy for most nations.

Wider Ramifications on Energy Security

While the immediate fallout of the conflict has impacted prices, there are far wider and broader ramifications emanating from the conflict and the subsequent sanctions placed on Russia.

First, geopolitical issues are increasingly overshadowing economic factors in the energy market. As the Belgian Prime Minister said at a recent EU meeting on price caps, 'In a lot of pure economic domains, geopolitics also play an important role.'[8]

Second, there are signs that a new political world order will emerge as countries loosely align with blocs—be it US-led or Russia. As nations take positions on international politics based solely on their perceived national interests, it is leading to concerns of a fragmentation of the global economy into distinct blocs—both political and economic.

Third, more and more governments, particularly in the West, are now taking charge of their energy policies as against the earlier 'hands-off' policy where they allowed market forces to decide on issues related to energy, ranging from energy infrastructure to subsidies, mandates and standards. This raises the question of whether the coming energy order will be defined by increasing government intervention in the energy sector across the board.

Fourth, the future of the gas market is looking uncertain. Before the conflict, gas was seen as the transitional fuel that would replace coal; now there is concern that current high gas prices will not only destroy the growth of global gas demand but will also impact the expected replacement of coal with gas. Moreover, the nature of the gas market itself is changing. LNG cargoes, as against pipeline flows, are now dominating, which has led to changes in gas contracting patterns. Due to the huge increase in spot LNG prices, there has been a significant decline in destination flexibility, which before the Ukraine crisis accounted for almost 80 per cent of the average contracted volumes. More and more buyers are now signing up for long-term deals with annual supplies signed under new long-term contracts in 2022 at their highest since 2018. Also, the direction of LNG trade has now changed, with suppliers that were traditionally focussed on the Pacific Basin moving to secure supplies in the Atlantic. Contract durations too have been increasing, with long-term contracts of over 10 years accounting for the majority of newly signed LNG contract volumes.

Fifth, over the last few decades before the Russian operation in Ukraine, the movement to lower carbon emissions had grown, leading to an upsurge in RE production across the world. Following the conflict and the imposition of sanctions driven in large part by the EU's urgency to become less dependent on Russia for their energy, climate change concerns are gradually taking a back seat as Europe turns to coal as it scrambles to find alternate sources of oil and particularly gas to replace Russian resources.

Sixth, although in the short and even medium term, most countries, particularly those in developing Asia, may look towards coal as the cheapest and most abundant fuel source, in the long term, more and more countries will rely on RE resources to increase their energy security. High fossil fuel prices, in the long term, are likely to hasten the transition away from fossil fuels. Already, 2022 was set to be a record year for the European solar photovoltaic (PV) market, with the share of renewables in the electricity mix expected to grow from 37 per cent in 2021 to 69 per cent in 2030. The EU has also pledged more than €21billion in the coming years for

hydrogen, with electrolyser manufacturers in Europe committing to increase their capacity to manufacture tenfold by 2025.[9]

Finally, the conflict can expose the growing geo-economic fractures in an economic system that has existed over the last seven decades. At the G20 meeting in April 2022, there was talk of trading and conducting business only with countries that respect international law. As US Treasury Secretary Janet Yellen said, '(We) cannot allow countries to use their market positions in key raw materials, technology, or products to have the power to disrupt our economies or exercise unwarranted political leverage.'[10] Already, cleavages are developing in global trade with specific trading blocs being formed. One evidence of this is the US-convened Minerals Security Partnership (MSP), which was set up in June 2022 and comprises 11 members. The goal is to ensure that critical minerals are produced, processed and recycled in a manner that supports the ability of countries to realise the full economic development benefit of their geological endowments,[11] and to reduce dependence on China, which dominates the critical minerals and processing sector, even using it at times as a geopolitical tool.

India's Energy Security

The conflict in Ukraine has clearly brought out the vulnerabilities in India's energy security framework. Currently, India's energy mix is skewed towards the use of coal for power generation, oil for transport and industry, and biomass for residential heating and cooking. To meet its Paris commitments, India needs to cut its emissions by 35 per cent, which has seen the announcement of a gas-based policy to replace coal as well. Hence, for India, which imports 84 per cent of its crude oil and 55 per cent of its natural gas, the rise in the international price of oil, gas and coal is driving up inflation and increasing manufacturing production prices. The government has already embarked on substantially increasing the share of clean energy in its overall energy mix and has set itself the goal of deriving 50 per cent of its energy from RE by 2030. However, given the pace of its energy demand, and a low base, India will continue to need huge amounts of fossil fuels to ensure its citizens' energy requirements are met.

Hence, discounted energy imports from Russia remain important in this context. In fact, Russia overtook Iraq as India's largest supplier of crude in September 2022, accounting for 22 per cent of its overall oil imports (Choudhary, 2022). Thus far, thanks to the policy of non-imposition of sanctions on Russia's energy sector to shield dependent European economies has allowed India's energy trade with Russia to continue; nonetheless, India has been subjected to massive pressure from the US to terminate such trade from time to time. A key challenge remains the threat of secondary sanctions and the weaponisation of financial instruments once (and if) the EU weans itself away from its dependence on Russian energy, as witnessed in the case of Iran and Venezuela in the recent past.

What can India Do?

India has long believed that the only viable way to ensure its energy security and shield consumers from global oil price fluctuations and international pressure is to cut its reliance on imported fossil fuels by boosting India's clean energy capacities. India has set a target of 500 GW of clean energy by 2030. However, while progress on increasing the share of RE has been impressive, to meet its clean energy targets, India will have to increase the installation of solar energy by at least three times the rate in the past. This means that the annual RE capacity addition would need to increase from the current 10 GW to 30–40 GW/annum to meet this target of installed capacity by 2030.[12]

It will also need to invest massively in storage and grid infrastructure. Hence, at least for the short and medium term, India will remain dependent on imported hydrocarbons.

Petroleum remains one of the most affordable sources of energy and it will maintain its place at the core of India's energy security policy, particularly for the transport sector, along with other fossil fuels like coal. An estimate from NITI Aayog shows that even in the 'maximum energy security' calculations, the country's oil import dependence would decrease from 79 per cent in 2032 to 72 per cent only by 2047.

One of the biggest challenges, however, is the lack of skilled technology and finances to achieve the target of renewables. Moreover, India lacks many of the raw materials required for storage and clean energy hardware as well as equipment for RE, such as solar panels and modules.

Although India can do little to stop disruptions to global oil markets or even against unilateral US sanctions on major oil exporters, there are several ways of safeguarding its energy security.

1. Enhancing its existing strategic petroleum reserves (SPR), which can act as India's defence against any energy security emergency, albeit short term. The Indian Strategic Petroleum Reserves Limited (ISPRL), which is responsible for building strategic crude oil reserves, currently holds stocks for only nine-and-a-half days of India's total oil needs at Visakhapatnam, Mangalore and Padur in the event of an emergency. The government is now planning to increase its SPR and is also considering allowing private sector participation in building new stocks.

2. India should go ahead in implementing its plan of setting up a strategic gas reserve on the lines of its SPR. The government is planning to utilise existing LNG tunnels and exhausted oil wells as well as build new underground infrastructure similar to the large salt caverns for SPR.

3. India must continue to diversify its import sources, including from relatively new suppliers, such as the US, Canada, Africa and Latin America. This will help reduce the country's dependence on traditional suppliers like OPEC, which supplies up to two-thirds of India's oil needs. Already, from 2006 onwards, an increasingly large share of India's oil imports are coming from Africa, ranging from 14–23 per cent of India's total oil imports in any given year; between 12–20 per cent comes from Latin America to allow a reliable and diverse basket of suppliers in case of supply disruptions.

4. As domestic production in oil and gas has been decreasing, the government should accelerate reforms in its upstream energy sector to attract more investments as well as state-of-the-art technology for deep-sea exploration and production. It should also increase the output of ethanol and biofuels, including from waste, to decrease the impact on food security, as well as increase the components of biofuel and ethanol blends.

5. Given that a few years ago it was declared that India would strive to become a gas-based economy, the enhanced role of gas in the economy, mainly as a cleaner alternative to coal, has not been successful due to anomalies in the tariff regimes as well as the recent spike in international LNG prices. At present, India has six operational import terminals. An increase in LNG re-gasification capacity is required if India has to increase the use of gas in the economy to replace coal-based power as well as feedstock in fertiliser production. However, the domestic gas pipeline network will have to be enhanced if the domestic gas market is to grow.

6. With coal likely to remain the mainstay of the Indian power sector for at least the medium term, India should invest in clean coal technology to reduce its carbon footprint.

7. Apart from increasing investments in overseas fossil fuel assets to help offset the impact of the slow production rate from aging fields at home, the government should also assist companies in looking for overseas mineral assets. It has already set up a joint venture company, Khanij Bidesh India Ltd. (KABIL), comprising three Central Public Sector Enterprises (CPSEs), which is tasked with ensuring mineral security through facilitating supply chains, mine asset acquisitions, and government-to-government collaborations. The Australia–India Economic Cooperation and Trade Agreement (AI–ECTA) is an example of this partnership.

8. Nuclear power is another area that needs to be fast-tracked as an alternative to coal-based power.

9. But most importantly, India must also pick up the pace to diversify its energy mix from fossil fuels, such as RE, hydel and nuclear for the power sector and bio-fuels and hydrogen for transport. The government has announced that India will strive to become a global hub for electric vehicles (EVs) and green hydrogen production. The good news is that the big names in the private sector have committed to increasing investment in this area.

Some steps are already being taken to reduce the use of transport fuels as policies to encourage the use of EVs are being introduced and electrification of railways is likely to see an annual reduction of diesel consumption to only 0.2 billion litres from the current 2 billion litres. By 2030, if all goes to plan, the Indian Railways will run entirely on electricity powered by RE.

No doubt, there are challenges—as in the hydrocarbon sector, the RE sector also depends on imports and the extent of the impact of global price shocks across the economy on domestic fiscal resources. If fiscal resources are hit hard, fewer funds would be available to support an increase in clean energy. Currently, India is largely dependent on imported solar panels and wind turbines, as well as raw materials used for manufacturing clean energy hardware and electric vehicles such as rare earth magnets and lithium and cobalt. Moreover, developers and investors need to be confident in stable and robust policies that do not change consistently.

Although India has signed the AI–ECTA to support growth and investment in Australia's critical minerals and resources sectors, it was not included in the US-led MSP, ostensibly due to its lack of requisite skills in the processing and value-added segment.

Most importantly, India needs to step up investment in its research and development (R&D), including in the private sector, which remains far less than other countries. There is an urgent need for technology intervention, innovation and partnerships to suit the Indian environment and reduce tech import, all of which require building capacity, both in terms of finances as well as human

resources. India also needs to look at energy management techniques to reduce energy intensity levels to lower consumption.

There is also a need to build awareness among the public on greenhouse gas (GHG) emissions and clean energy models. Policy intervention is required to promote new technologies, both in terms of financial support and realistic pricing mechanisms. And finally, the government needs to share such technology with private players instead of individual companies acquiring the same separately.

In conclusion, energy security remains a vital aspect of India's overall security, as has been seen repeatedly in times of international crises. While energy independence remains a distant and perhaps unattainable dream, the overt and ever-increasing dependence on foreign fuel and technology imports must be reduced at the earliest.

The energy crisis of unprecedented proportions that has emerged in the wake of the Russia–Ukraine conflict has served as a rather rude awakening for all countries (particularly those dependent on imported fuels) that they cannot depend on other countries for their energy requirements. Without adequate and, more importantly, affordable supplies of energy, economies will be adversely impacted, with a ripple effect on all sectors. While India has managed to weather the current storm better than most other countries, the lesson of Europe, which despite years of trying to wean itself away from dependence on Russia, should serve as an urgent wake-up call.

Notes

1 https://www.goldmansachs.com/insights/pages/gs-research/squaring-russias-missing-barrels/report.pdf

2 https://www.oecd.org/ukraine-hub/policy-responses/the-supply-of-critical-raw-materials-endangered-by-russia-s-war-on-ukraine-e01ac7be/

3 https://www.reuters.com/business/energy/exclusive-russia-forecasts-export-gas-price-will-more-than-double-2022-2022-08-17/

4 https://www.iea.org/articles/energy-fact-sheet-why-does-russian-oil-and-gas-matter

5 https://www.statista.com/statistics/1066718/russian-coal-export-volume-by-destination/

6 *The Economic Times*, 25 October 2022. https://economictimes.indiatimes.com/industry/energy/oil-gas/world-is-in-its-first-truly-global-energy-crisis-ieas-birol/articleshow/95071984.cms.

7 https://ec.europa.eu/info/news/seventh-state-energy-union-report-highlights-challenges-2022-oct-18_en

8 *The Economic Times*, 21 October 2022. https://energy.economictimes.indiatimes.com/news/oil-and-gas/eu-heads-to-focus-on-china-iran-after-agreeing-to-disagree-on-gas-cap/95009313?utm_source=Mailer&utm_medium=newsletter&utm_campaign=etenergy_news_2022-10-22&dt=2022-10-22.

9 https://ec.europa.eu/info/news/seventh-state-energy-union-report-highlights-challenges-2022-oct-18_en

10 https://home.treasury.gov/news/press-releases/jy0714

11 https://www.state.gov/minerals-security-partnership/

12 https://gwec.net/accelerating-onshore-wind-capacity-additions-in-india-to-achieve-the-2030-target/#:~:text=India%20has%20set%20a%20target,capacity%20mix%20(CEA%20-2020)

References

Gourinchas, Pierre-Olivier. 2022. 'Shifting Geopolitical Tectonic Plates', *Finance & Development*, IMF, 59 (2): 10–11.

Dempsey, Harry, et al. 2022. 'Top Oil Traders Warn Prices could Breach $200 a Barrel', *Financial Times*, 23 March, https://www.ft.com/content/1643ba16-4e80-40cb-a983-7f57003945bc.

Mills, Andrew. 2022. 'QatarEnergy Expanding in LNG, won't Divert Supplies to Europe', *Reuters*, 18 October, https://www.reuters.com/business/energy/qatarenergy-aims-become-top-lng-trader-says-ceo-2022-10-18/.

Choudhary, Sanjeev. 2022. 'Russia becomes the No. 1 oil supplier for India in October', *The Economic Times*, 2 November, https://economictimes.indiatimes.com/news/india/russia-becomes-the-no-1-oil-supplier-for-india-in october/articleshow/95240329.cms?utm_source=ETnotifications&utm_medium=autopush&utm_campaign=India&utm_content=10AM.

About the Author

Shebonti Ray Dadwal is an independent analyst and consultant in energy, resources and climate change with a wide range of experience in media, government and academia. She has authored two books—*The Geopolitics of Gas: Common Problems, Disparate Strategies* (New Delhi: Pentagon Press, 2017) and *Rethinking Energy Security in India* (KW Publishers Pvt. Ltd., 2002). She has also co-edited *The Asian Strategic Review 2107: Energy Security in Times of Uncertainty* (New Delhi: Pentagon Press, 2018) and *Non-Traditional Security Challenges in Asia: Approaches and Responses* (New Delhi: Routledge, 2015).

She has served as deputy secretary at the National Security Council Secretariat (NSCS) and was senior editor with *The Financial Express*. In her last appointment as a senior fellow with the Manohar Parrikar Institute for Defence Studies and Analyses (MP–IDSA), Dadwal headed the Non-Traditional Security Centre. She was awarded a Chevening Fellowship by the Foreign and Commonwealth Office of the UK in 2009 on completion of a course in the Economics of Energy at the Institute for Energy Research and Policy, University of Birmingham, UK.

The India International Centre was founded with a vision for India, and its place in the world: to initiate dialogue in a new climate of amity, understanding and the sharing of human values. It is a non-government institute, designed, in the words of its founder president, Dr. C.D. Deshmukh, to be a place where various currents of intellectual, political and economic thought could meet freely. In its objectives, the Centre declares its purpose as being that of society to 'promote understanding and amity between the different communities of the world by undertaking or supporting the study of their past and present cultures, by disseminating or exchanging knowledge thereof, and by providing such other facilities as would lead to their universal appreciation.'

₹ 50
for members

Designed and produced by Naveen Printers, F-11 B, Okhla, Phase-I, New Delhi-20