Shaping India's energy landscape

India charts a credible pathway of how growth and decarbonisation can advance together, shaping the future energy landscape

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Today, India stands at the intersection of two critical national priorities: sustaining a fast economic trajectory and undertaking a large and complex energy transition programme. This is not just a choice between growth and decarbonisation. It is a strategic task to integrate traditional and new energy systems. We have the opportunity to demonstrate a pragmatic, scalable and responsible transition model that reconciles our legitimate 'right to grow' as a developing economy with climate action.

The year 2025 was a record-breaking year for India's clean energy and emissions. As stated by the minister for new & renewable energy, India's non-fossil fuel installed capacity has increased to 267 gigawatts – a 23 per cent increase over 2024, which means 49 GW of additional capacity during the last year. Solar power led the expansion, with installed capacity increasing to 136 GW in 2025 from 98 GW in 2024, growing by 39 per cent. Wind energy capacity rose by 13 per cent to 55 GW. Solar and wind energies drove India's renewable energy expansion during the year.

India has now entered its critical phase in energy transition, where it is pushing to align expanding economy with cleaner fuels for energy needs. Early signals are encouraging. India is poised to become the world's second-largest solar market this year, with solar capacity additions reaching over 50 gigawatts, overtaking the US, according to forecasts from Bloomberg NEF. In that process, it will also become the world's fastest-growing major market for solar installations – India's solar additions may grow at 6 per cent, compared to a decline of 14 per cent in the US and China. Make no mistake, China will still add 321 gigawatts of solar capacity in 2026. If India maintains its current pace, it is on track to achieve its 2030 target of 500 GW of non-fossil fuel capacity.

The momentum is in favour of renewables-fired liquid fuels. Last week, Germany's Uniper Global Commodities and AM Green Ammonia signed a long-term binding offtake agreement for 500,000 tonnes per year of renewable ammonia, with the first shipment expected in 2028 – a step forward in Prime Minister Narendra Modi's green hydrogen mission to become a global hub for production and exports of green hydrogen and green ammonia.

It does not stop there. Research from Council on Energy, Environment & Water (CEEW), found that circularity in seven sectors alone offers an ₹11.5 lakh crore ($132 billion) annual market by 2047. This has the potential to create 8.4 million full-time equivalent jobs and attract ₹10.8 lakh crore in investments.

However, the challenge remains formidable. India, now the world's third-largest emitter in absolute terms, needs an economic growth of over 8 per cent annually to achieve the goal of Viksit Bharat by 2047, while also progressing towards a Net Zero target by 2070. It's not about slowing growth, but about changing its carbon intensity.

A careful balancing of ambition and realism is needed at such an inflexion point. Energy demand in India is on the rise, driven by sustained GDP growth and new avenues of electricity consumption like data centres and AI. UN Climate Body's Paris Agreement, which aims to cap a rise in global temperature levels at 1.5-2 degrees centigrade over pre-industrial levels, constrains the available carbon space for developing economies, even as their developmental needs remain pressing. India's pathway must be of 'responsible transition' – pushing renewables and low-carbon technologies, while deploying cleaner fossil fuels and transitional solutions to ensure affordability and energy security.

India plans to add 80 GW of critical, less polluting coal-fired generators in the next seven years, based on domestically available coal. Refining capacity is being enhanced to meet the rising demand of transport fuels and petrochemicals, which is growing at 3-4 per cent; demand for chemicals is aligned to ~7 per cent economic growth. Carbon capture, utilisation and storage will also play a major role in sequestering carbon emitted from power generators and industries, subject to cost and scalability.

Natural gas will be the central pillar in India's energy transition, just the way it plays a major role in the US and Europe – from being a substitute for

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diesel and petrol in cars and trucks to emerging as a flexible baseload and balance for intermittent renewables. The Indian government's objective to increase the share of natural gas to 15 per cent in the energy mix indicates the importance of natural gas as a cleaner bridge fuel.

While India's cumulative emissions remain low and are expected to grow by 1.4 per cent in 2025, it's slower than the US' 1.9 per cent but faster than China's 0.4 per cent. This signals that India is on track, with decoupling of growth from emissions intensity.

The philosophy of 'responsible integrated transition' is the path that Essar Group is pursuing, with a diversified global energy and commodity value chain spanning natural gas, LNG, refining, green mobility, cleaner power and green hydrogen, operating under an integrated framework.

EOGEPL today contributes nearly half of India's fast-growing production of coal-bed methane, producing 1 million cubic metres a day, with plans to increase the unconventional gas share from ~1 per cent to ~5 per cent of India's total gas production of about 100 million standard cubic metres per day (MSCMD), supporting expansion of India's gas-based economy.

The Stanlow refinery in the UK is one of Europe's most advanced refineries, supplies about 16 per cent of the country's road fuels and is targeting a 95 per cent reduction in emissions. EET Hydrogen Power is building Europe's first hydrogen-ready combined heat & power plant at Stanlow to supply low-carbon power and steam under a $3 billion investment program.

Essar Ports plans to expand capacity across India, the UK and Indonesia to over 200 million tonnes a year, including a 50 million tonne expansion at Salaya with infrastructure for LNG, bio-fuels and containers. A proposed bio-refinery at Salaya will produce sustainable aviation fuel and next-gen fuels such as e-methanol & green ammonia, supporting decarbonisation of hard-to-abate sectors. Essar Power is developing 10 GW of clean power generation capacity.

In mobility, Essar's green mobility ecosystem is decarbonising heavy freight via a mix of LNG and electric trucks supported by retail and fuelling infrastructure. It aims to scale to 30,000 LNG and EV trucks and 100 retail outlets, abating one million tonnes of CO_2 annually. Financing will be the most critical lever for this transition. As Simon Stiell, Executive Secretary, UN Climate Change, has noted, $2 trillion has been invested in clean energy and infrastructure last year, twice as much as in fossil fuels. The world got from nearly nothing to $2 trillion in little more than a decade. India needs annual investments of $350-$400 billion in its clean energy businesses, as indicated by various estimates. Yet, commitment of $1.3 trillion per year in annual climate financing remains unmet from the Global North.

Essar, after concluding its planned asset monetisation programme, has repaid $25 billion (₹2,00,000 crore) of debt, deleveraging its balance sheet. With this strengthened financial position, the financing approach combines prudent debt, equity deployment, internal accruals, and investor capital, ensuring stability in the legacy businesses while enabling long-term investments in future growth and energy transition.

The government of India must create structural reforms to enable big investments in low-carbon energy and then deploy them in a cost-effective way. Long-term offtake frameworks for green hydrogen, ammonia & SAF, etc, are crucial for the development of low-carbon fuels, while the buildout of battery storage and transmission infrastructure will make renewable energy deployable and reliable.

We expect the upcoming Union budget to accelerate India's clean mobility and energy transition by enabling affordable financing for LNG and EV trucks, supporting domestic manufacturing through targeted incentives and introducing performance-linked regulatory measures. These initiatives would reduce fuel imports, lower emissions, and improve logistics efficiency, creating scalable opportunities for capital deployment and sustainable growth.

India is the largest and most credible opportunity for long-term, responsible capital deployment. Essar has positioned itself as an integrated platform capable of absorbing large-scale global capital and deploying it across the full energy transition value chain – from molecules to electrons, from ports to power, from mobility to manufacturing.

India's energy transition is one of the defining transformations of our century. It's not about choosing the old or the new, but about intelligent integration of both. Combining scale, policy transformation, industrial capability and capital mobilisation, India can chart a credible pathway of how growth and decarbonisation can advance together. In this journey, Essar Group, with its global footprint, can play a pivotal role as a responsible builder of India's low-carbon future. ◆