

India caught between Davids & Goliaths in global clean energy face-off

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The global clean energy race is turning into a David versus Goliath battle between the Global North and South — with poorer nations like India hard-pressed to match the humongous subsidies that the Western world is offering to attract investments and make vehicles and green fuels cheaper for consumers.

The US and Europe are offering 8 to 10 times more subsidies amounting to a massive \$650 billion, around 18 per cent of India's gross domestic product. If that was not enough, Europe has started slapping cross-border carbon taxes from October on imports of certain energy-intensive materials to protect domestic manufacturers. As a result, India's ambition to hop on to the global climate change locomotive and build a platform for green industries, non-polluting transport networks, and a hub for clean energy exports is looking distant — especially after the US and European Union (EU) flexed their financial muscles. Also, India is struggling to meet domestic clean energy goals.

Larger incentives from the US' Inflation Reduction Act (IRA) and the EU could impact India's attractiveness for global investment, given its smaller incentive outlay, said Hetal Gandhi, director at rating agency CRISIL, an S&P affiliate. "However, Europe, the US, and China possess a distinct first-mover advantage, developed critical component ecosystem, which presents some challenges for India's entry into the global electric vehicle (EV) market."

A year into the IRA, a combined \$22

billion in investments were announced in just two American states. This wasn't the case when the Narendra Modi government came to power in 2014 and decided to aggressively pursue clean energy projects — largely to arrest a near-total reliance on oil and natural gas imports.

India was one of the first countries, after China, to set ambitious renewables targets and rolled out substantive subsidy programmes in manufacturing clean energy programmes.

Transport Minister Nitin Gadkari first set a target in 2017 to end sales of new internal combustion engine (ICE) vehicles by 2030. India wants to become a "global hub of manufacturing of EVs", Finance Minister Nirmala Sitharaman said in a 2019 Budget speech, with the Economic Survey envisaging an Indian city emerging as the 'Detroit of EVs'.

Around the same time, Detroit was cranking out ICE sport utility vehicles, and then US President Donald Trump announced plans in June 2017 to withdraw from the Paris climate agreement. The UK and France were planning to phase out fossil fuel-fired cars by 2040 only, and Europe was burning heaps of Russian gas and coal to power its industries. The pandemic and the Russian invasion of Ukraine have put the brakes on India's ambitions. President Joe Biden announced a \$370 billion IRA last year to promote clean energy projects while hundreds of billions of dollars for clean energy are also available as loans and grants via separate US legislation.

The IRA extends for 10 years and is given as relatively straightforward tax credits. The main EU funding pools are similar — the plan is expected to mobilise

TOUGH GAME TO CRACK



COUNTRY	KEY POLICY MEASURES	EV ADOPTION TARGETS	SUBSIDY
China	Incentives along supply chains, joint ventures	50% NEV sales share by 2030	
US	Tax incentives, funding for EVs, and infrastructure	Various sales share targets	\$370 bn+ in loans from another bill
EU	Faster permits, financial support	Net-zero-related projects	\$350 bn+ in loans from ancillary schemes
INDIA	PLI for EVs and batteries; FAME scheme for demand subsidies; state govt scheme for demand and supply subsidies	Multiple EV adoption targets	Approximately \$9 bn

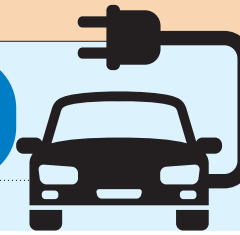


...PROVIDE INCENTIVES FOR MANUFACTURERS

FOCUS ON BATTERY ELECTRIC VEHICLES

GIVE CHARGING INFRASTRUCTURE SUPPORT

GRANT SUBSIDIES FOR EV PURCHASES



NEV: Neighborhood electric vehicle; PLI: Production-linked incentive

Sources: CRISIL, government data

€300 billion, of which €72 billion will be via grants and the rest in loans.

India's announcements have paled in comparison. The government first announced Faster Adoption and Manufacturing of (Hybrid & Electric Vehicles (FAME) in India-I — in the four years starting 2015, only ₹529 crore (\$65 million) were disbursed. FAME-II began in 2019 with a budget of ₹10,000 crore: but it got mired in controversy last year with New Delhi levying charges of misappropriation of subsidies on some of India's top EV makers, with sales of EVs last financial year trailing government goals. The scheme ends in March 2024, and it is unclear if there will be an extension and if the funds will be entirely deployed. EV volumes remain impacted by material price hikes taken by firms to help offset the impact of the June

reduction of the FAME subsidy, ICRA said.

Announcements in green hydrogen total ₹19,744 crores, but hardly 25 per cent of the subsidy is available for electrolyser manufacturing, a key to green hydrogen production. There have been no awards as yet for building a green hydrogen capacity of 5 million tonnes a year. Two tranches of solar module manufacturing with cumulative support of ₹24,000 crore have been announced, and a budgetary outlay of ₹18,100 crore provided under the National Programme on Advanced Chemistry Cell Battery Storage.

Taken together, they add up to only around \$9 billion — a sliver of what the EU and the US are spending on clean energy programmes. The success of the IRA is evident — for example, Massachusetts-based Ascend Elements, in a venture with

a South Korean firm, is building a \$1 billion engineered battery materials facility in Kentucky for 750,000 new EVs a year. That was possible because of a \$480 million grant award by the US Department of Energy, reflecting the kind of subsidies on tap. Just a year into the IRA, Kentucky alone has received \$11 billion in private-sector investments in the EV sector, and Texas has received investment commitments of a similar value. The market size also matters, says Brajesh Singh, president, Arthur D Little.

"Mapping out the state of EVs in the US and Europe compared to India, the US had an estimated market size of \$52.30 billion in 2022. Europe had an estimated market of \$186.42 billion. Meanwhile, India had an estimated market size of \$3.83 billion," Singh said. Moreover, the disbursement of

US subsidies is in the form of tax credits, and the simplicity of disbursement attracts investments to America. By contrast, Europe is more bureaucratic, and India even more so, as seen in issues over the disbursement of FAME subsidies, and teething incentive disbursement problems with ongoing production-linked incentive schemes, industry officials said.

"Any kind of subsidy is an inefficiency and so if you are putting in that inefficiency in the economics, then it should be short-lived," said Hasan Ali, co-founder, Esmito, a Mumbai-based battery swapping solutions provider, incubated in IIT Madras, and backed by Hindustan Petroleum and Unicorn India. Ali said subsidies are essential to develop a local ecosystem.

"I think the incentives need to be on the supply side and not on the demand side, directly subsidising the production cost of battery packs, producing battery packs in India, including battery management system and direct current for example," said Dinesh Arjun, chief executive officer, co-founder, Chennai-based Raptee Energy, which plans to launch a premium EV motorbike early next year, using a high voltage drive train that can be charged on the industry standard CCS2 public charging network.

Eventually, India cannot compete with the Western world on money power alone. "India enjoys abundant sunlight and wind resources, making it a prime location for solar and wind power generation. This natural advantage can significantly reduce the cost of energy production, offsetting the need for larger subsidies," said Bragadesh Damodaran, industry platform leader for energy transition and utilities, Capgemini India.