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Assessing India's incentive scheme to enhance the battery manufacturing ecosystem

An in-depth analysis of the Advanced Chemistry Cells Production Linked Incentive (ACC PLI) scheme, its beneficiaries, and the progress so far

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Key findings

Despite strong industry interest, India's Advanced Chemistry Cell Production Linked Incentive (ACC PLI) scheme, launched in October 2021, is yet to fully translate policy ambition into realised capacity. As of October 2025, only 2.8% (1.4GWh) of the targeted 50GWh capacity has been commissioned within the stipulated timeline, entirely by Ola Electric.

Of the 40GWh allocated so far under ACC PLI, Reliance New Energy is the only beneficiary that has indicated commissioning its second-round award capacity (10GWh) on time. Ola Electric plans to commission 5GWh of its 20GWh by March 2026. However, Ola's decision to limit its capacity to 5GWh until FY2029 significantly dilutes the commitments that the ACC PLI scheme envisions.

ACC PLI beneficiaries have faced significant supply chain and implementation bottlenecks, such as visa approval delays for Chinese technical specialists needed for equipment installation, an aggressive two-year installation timeline and stringent domestic value addition (DVA) requirements which have proven difficult for first-time battery manufacturers.

The Indian government needs a dedicated scheme for critical minerals, covering both sourcing and refining, alongside one for cell components. In addition, tariff measures such as basic customs duty (BCD) and anti-dumping duties will be essential for the cell manufacturing industry to achieve the intended outcomes of the ACC PLI scheme.

Executive summary

India's ambitious electric vehicle (EV) and energy storage targets have accelerated battery demand, underscoring the strategic importance of lithium-ion cells, almost all of which India currently imports, primarily from China. To reduce this dependence, the Ministry of Heavy Industries (MHI) launched the Advanced Chemistry Cell Production Linked Incentive (ACC PLI) scheme in October 2021 to catalyse domestic cell manufacturing. With an outlay of INR181 billion (USD2.08 billion), the scheme aims to attract large players by mandating a minimum investment of INR11.25 billion (USD129.3 million) and by adopting an evaluation framework that places significant weight on domestic value addition (DVA), capacity development, and subsidy benchmarks.[1]

The 50-gigawatt hours (GWh) ACC PLI tenders attracted strong interest from domestic players, with auctions heavily oversubscribed. Ola Electric, Reliance New Energy, Hyundai Global, and Rajesh Exports emerged as the selected beneficiaries. However, the initial 50GWh allocation remains incomplete after Hyundai Global Motor pulled out of its 20GWh allocation from the first tender. This prompted the MHI to re-tender 10GWh in the second auction, while reserving the remaining 10GWh for a future tender.

As of October 2025, progress under the ACC PLI scheme has been limited. Only 2.8% (1.4GWh) of the targeted 50GWh capacity has been commissioned within the stipulated timeline, entirely by Ola Electric. However, this 1.4GWh, too, represents only a partial commissioning of Ola Electric's awarded 20GWh capacity and is yet to meet the DVA requirements needed to qualify for incentive claims. As a result, zero incentives have been disbursed to any beneficiary against the targeted INR29 billion (USD332 million) by October 2025. Ola Electric has also scaled back its expansion plans and now aims to install only 5GWh by financial year (FY) 2029. The other beneficiaries are yet to commission their ACC battery manufacturing facilities. Rajesh Exports lags the most, with progress limited to land acquisition, while reports of financial discrepancies have further raised concerns about its ability to commission the facility in the near term.

Beneficiaries have also encountered major supply chain and implementation bottlenecks that have significantly delayed facility installation. India lacks a mature cell manufacturing ecosystem, including critical mineral refining and cell component production, which leaves the industry almost entirely dependent on imports from China. Industry stakeholders also highlight delays in visa approvals for Chinese technical specialists required for equipment installation, further slowing progress. In addition, scheme-related issues such as an aggressive two-year installation timeline and high DVA requirements pose significant challenges for PLI beneficiaries with no prior experience in battery manufacturing.

There is a substantial gap between the intended and actual outcomes of the ACC PLI scheme. Against an estimated 1.03 million jobs, the scheme has generated only 1,118 jobs (0.12%). Similarly,

[1] Note: USD1 = INR87

investments of approximately INR28.7 billion (USD330 million) account for just 25.58% of the targeted INR112.5 billion (USD1.29 billion). Although strong policy support and impetus from the central government have led to substantial investment announcements and capacity plans outside the ACC PLI scheme, on-ground progress across the sector has remained sluggish. For ACC PLI beneficiaries, the central government has imposed a penalty of 0.1% of the performance security for each day of delay in commissioning. Moreover, with India's dependence on imported battery cells still close to 100%, the scheme's original objectives remain largely unfulfilled.

Going forward, improving the effectiveness of the ACC PLI scheme and accelerating sectoral growth will require a holistic, multi-pronged strategy. The government could begin by extending implementation timelines for beneficiaries and waiving associated penalties for another one year.

To build a competitive ecosystem similar to one China developed over a decade (2000–2010), the government must introduce and effectively implement a dedicated scheme for critical minerals, covering both sourcing and refining, as well as for cell components. In addition, tariff protection measures such as basic customs duty (BCD) and anti-dumping duties along with focused talent development and research and development (R&D) support, will be essential for the cell manufacturing industry to achieve the intended outcomes of the ACC PLI scheme.

The government's move to promote domestic cell manufacturing was well timed, but the policy focused primarily on making cells cost-competitive through sales-linked incentives. The core challenge, however, lies in setting up manufacturing facilities, where both ACC PLI beneficiaries and non-PLI players continue to struggle. Even after India builds adequate capacity, the industry will face sustained pricing pressure from China, which benefits from a mature ecosystem and significant overcapacity. Overall, India remains at least five to ten years away from establishing a robust and competitive cell manufacturing industry, assuming policy decisions and execution stay on track.

Introduction

The Ministry of Commerce and Industry launched the Production Linked Incentive (PLI) scheme in 2020 as a landmark initiative to transform India's manufacturing landscape. It offers financial incentives to the beneficiaries based on their annual incremental production. Currently, it covers over 14 sectors with a total outlay of INR1.955 trillion (USD22.47 billion). Under this scheme, the government selected sectors that have high impact, strong global demand, heavy import dependence, large job-creation potential, and strategic importance for India's long-term economic and industrial growth.

In October 2021, the Ministry of Heavy Industries (MHI) launched the Advanced Chemistry Cells (ACC) component of the PLI scheme.[2] The scheme had an outlay of INR181 billion (USD2.08 billion) and aimed to develop 50-gigawatt hour (GWh) of advanced battery cell manufacturing capacity in India by 2025. Additionally, it targeted:

- Building a local battery supply chain (cathode, anode, electrolyte) to reduce import dependence
- Mobilising major private investments and global tech partnerships
- Lowering battery costs, and accelerating electric vehicle (EV) and energy storage adoption

Through ACC PLI, the central government is aiming to bridge the gap between domestic battery cell demand and manufacturing capabilities. Despite having approximately 60GWh per annum of installed domestic battery manufacturing capacity, cell manufacturing remains almost nonexistent. And most firms largely import cells from China and assemble battery packs.[3,4] With cells accounting for the majority of the total battery cost, this dependence exposes the battery-reliant sectors in India, such as EVs and energy storage systems (ESS), to supply instability and price volatility, especially during Chinese export curbs. Additionally, with cumulative domestic battery demand across all sectors projected to grow at a compound annual growth rate (CAGR) of 36.5% to around 272GWh by financial year (FY) 2030, India must accelerate localisation efforts and build a self-sufficient battery ecosystem.[5]

ACC PLI scheme specifies that bidders must have a minimum net worth of INR2.25 billion (USD26 million) per GWh of committed capacity for the bid capacities ranging from 5GWh to 20GWh.[6] Table 1 outlines the salient features of the ACC PLI scheme.

[2] PLI ACC, Scheme & Guidelines, 9 June 2021
[3] Economic Times, India's battery manufacturing capacity, 3 November 2025
[4] Takshashila, India's Options amid Chinese Export Curbs, 14 October 2025
[5] Note: According to JMK Research
[6] ACC PLI request for proposal, 22 October 2021

Table 1: Salient features of the ACC PLI scheme

Feature	Details
Nodal agency	Ministry of Heavy Industries
Outlay / incentives quantum	INR181 billion (USD2.08 billion) over five years
Target	50GWh domestic cell manufacturing in two years
Date of tender launch	22 October 2021
Bidding capacity range	5GWh to 20GWh
Eligibility for subsidy	Install capacity within two years and get subsidy on sales for subsequent five years. Achieve 25% domestic value addition (DVA) within two years and 60% within five years of project commencement.[7]
Selection criteria	Technical and Financial (80:20) score-based selection Technical 80% (70% DVA, 30% capacity addition) Financial 20% (subsidy benchmark)
Net worth eligibility	Minimum INR2.25 billion per GWh
Subsidy	Maximum 20% of battery sale price per kilowatt hours (KWh) with a cap of INR2,000 per KWh
Subsidy calculation formula	Incentive = S (per KWh) * DVA (%) * AS S = Applicable subsidy amount per KWh as quoted in tender DVA = Percentage of domestic value addition achieved during the period AS = Actual sale of advanced chemistry cells (in KWh)

Source: News articles, JMK Research

The ACC PLI tender uses a quality and cost-based selection (QCBS) approach to evaluate scheme winners. Under this framework, technical parameters carry 80% weightage, while financial parameters account for the remaining 20%.

- The technical score is determined by DVA, which accounts for 70%, and committed capacity addition, which accounts for 30%.

[7] Note: DVA refers to the proportion of domestic inputs and processes used in manufacturing, indicating the percentage share of value created within India's supply chain.

- The financial score is assessed solely on the subsidy benchmark proposed by the bidder.

Among all criteria, DVA is the most critical factor, both for bid evaluation and for determining the actual subsidy disbursement to battery manufacturers. Additional key evaluation parameters include the committed manufacturing capacity (GWh) and the subsidy requested per KWh.

Although the scheme is technology-agnostic and tenders will be awarded as per the value addition, capacity development, and subsidy benchmark, the government has specified minimum energy density and minimum lifecycles to be achieved by the beneficiaries as indicated in the shadowed region of Table 2.

Table 2: Cycle life and energy density matrix

		Energy density (watt hour/kilogram [Wh/Kg])				
		≥ 50	≥ 125	≥ 200	≥ 275	≥ 350
Cycle life	≥ 1,000					
	≥ 2,000					
	≥ 4,000					
	≥ 10,000					

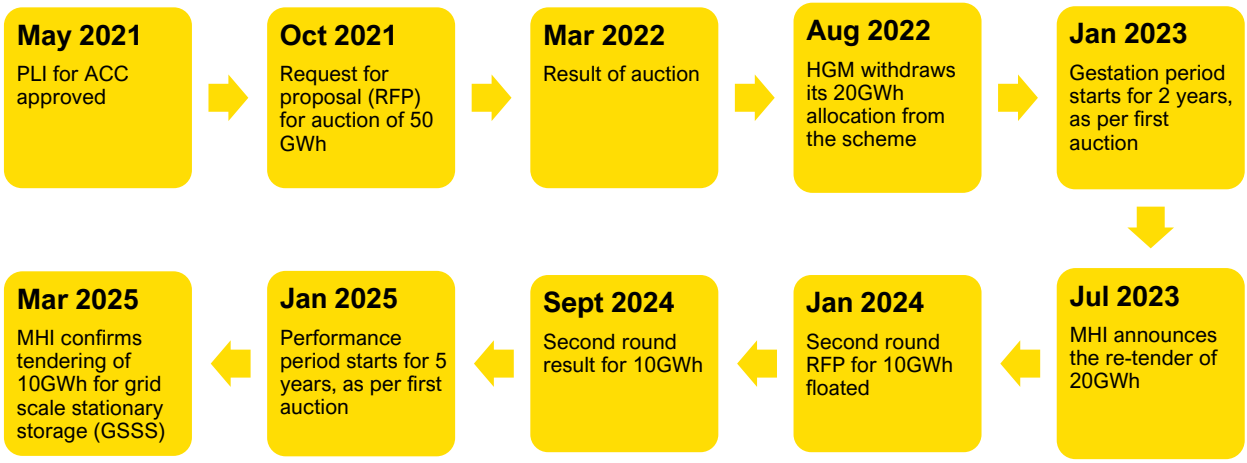
Source: ACC PLI request for proposal, 22 October 2021

Auction analysis

The ACC PLI scheme tender attracted overwhelming interest, and bidders oversubscribed the available capacity by nearly 2x in the first auction and around 7x in the second. The MHI initially allocated the full 50GWh capacity in the first auction in March 2022 and conducted a second auction after Hyundai Global Motors (HGM) withdrew its 20GWh allocation.[8] In the second round held in September 2024, bidders secured only 10GWh, leaving the remaining 10GWh capacity unallocated.[9] The MHI plans to tender this unallocated capacity separately at a later date.

[8] Mint, Hyundai Global pulls out of battery PLI, 29 August 2022
[9] Press Information Bureau, IMPACT OF 10 GWh CAPACITY PROJECT, 18 March 2025

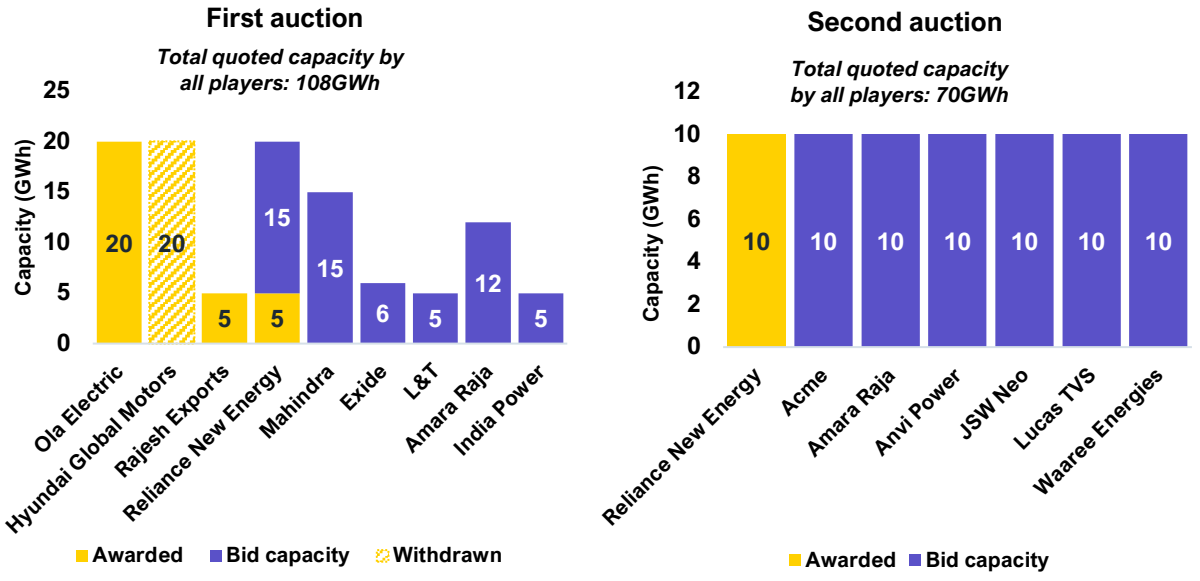
Figure 1: ACC PLI — a timeline of events



Source: News articles, JMK Research

Excluding HGM, only three companies secured allocations across the two auctions: Ola Electric (20GWh), Reliance New Energy (15GWh), and Rajesh Exports (5GWh). Given India's lack of domestic cell manufacturing capability, the scheme's emphasis on large-scale capacity with a minimum bid size of 5GWh has represented an ambitious target. The high net-worth requirement (a minimum of INR2.25 billion per GWh) further restricted participation to large corporates. Many bidders such as Ola Electric, Hyundai Global Motors, Mahindra, and Lucas TVS operate primarily as automobile and EV manufacturers, which means that they will use a significant share of the ACC PLI scheme's output to meet their own internal requirements.

Figure 2: ACC PLI auction — bidders and winners



Source: PIB[10], JMK Research

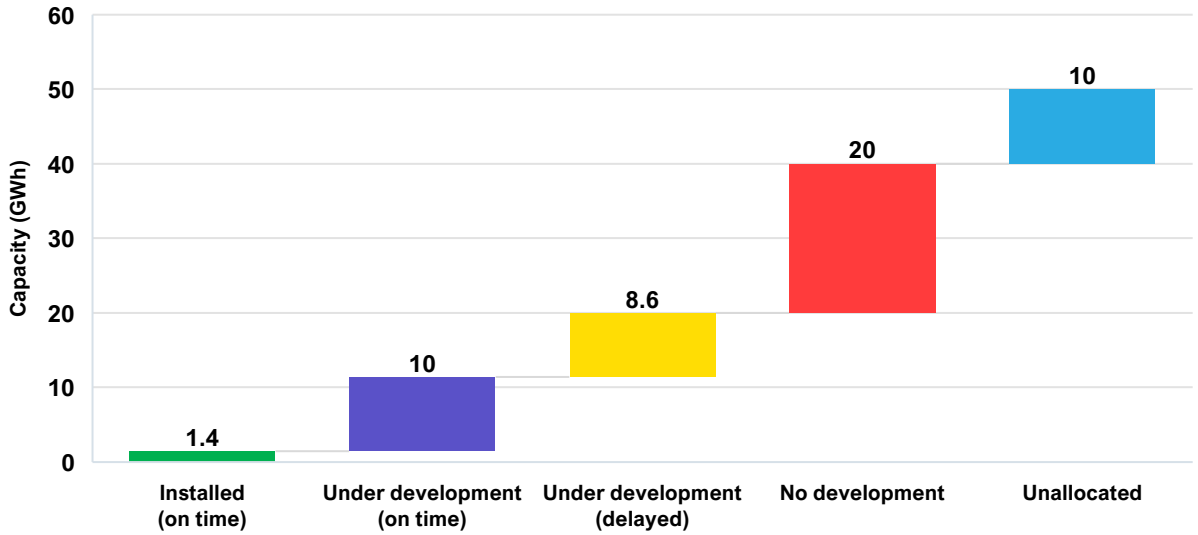
Notably, among all bidders across the two auction rounds, only Exide Industries and Amara Raja had prior battery manufacturing experience. However, neither qualified in the bid evaluation.

The evaluation framework prioritised DVA, proposed capacity addition, and subsidy benchmarks, on which these firms scored relatively lower. Consequently, the authorities awarded the tender to new entrants that achieved higher scores, despite their lack of prior domain expertise in battery manufacturing. Moreover, most beneficiaries chose established lithium-ion chemistries such as nickel manganese cobalt (NMC) and lithium iron phosphate (LFP), which shows that bidders had limited intent to explore emerging battery technologies, such as sodium-ion or vanadium redox flow.[11]

Status and progress of facilities under ACC PLI

As on October 2025, progress under the ACC PLI scheme remains limited. Under the stipulated timelines, beneficiaries from the first auction were required to commission their facilities by December 2024. However, only 1.4GWh has been commissioned on time; 8.6GWh is under development but delayed; and no progress has been made on the remaining 20GWh.

Figure 3: Status of capacity development under ACC PLI



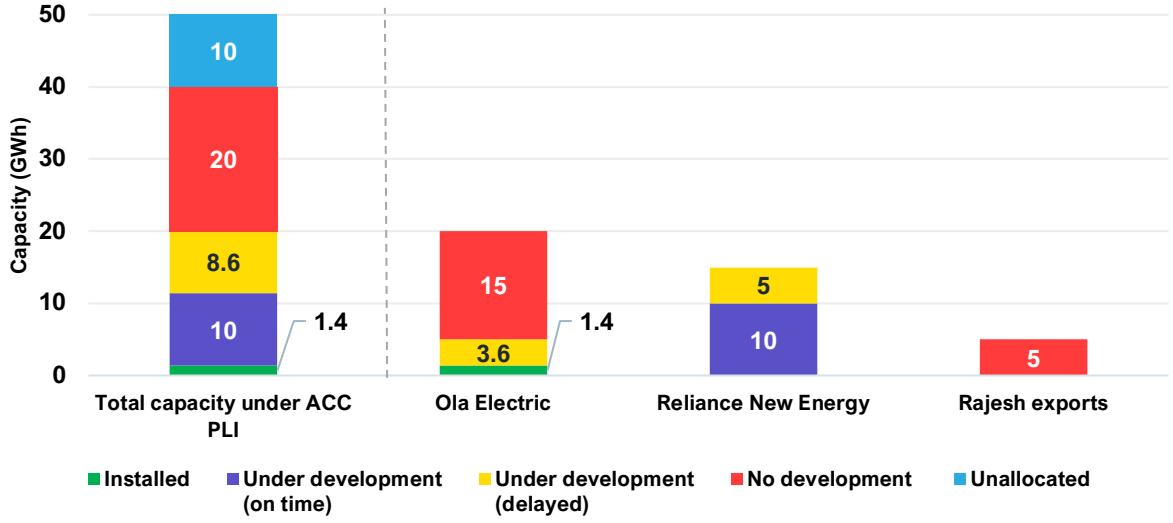
Source: News articles, JMK Research

[10] Press Information Bureau, Allotment made for 50 GWh of battery capacity to 4 successful bidders, 24 March 2022
Press Information Bureau, MHI awards 10 GWh capacity to one bidder under ACC PLI scheme, 4 September 2024
[11] NMC batteries use a nickel-manganese-cobalt cathode to deliver high energy density, while LFP batteries use an iron-phosphate cathode, offering higher safety, longer life, and lower cost but lower energy density.

Among the first-round of beneficiaries, only Ola Electric has commissioned capacity, amounting to 1.4GWh. In addition, Ola Electric and Reliance New Energy are collectively developing approximately 8.6GWh of capacity, but this development has been delayed relative to the scheme's prescribed timelines. The remaining 20GWh of capacity, comprising 15GWh allocated to Ola Electric and 5GWh to Rajesh Exports, has seen little to no tangible progress.

In the second auction round, Reliance New Energy, the sole beneficiary, is advancing development of its allocated 10GWh capacity and has indicated that it plans to commission the facility ahead of schedule by February 2027.

Figure 4: Status of capacity and progress by beneficiaries as of October 2025



Source: News Articles, JMK Research

Of the 40GWh allocated so far under the ACC PLI, Ola Electric plans to commission 5GWh by March 2026. However, Ola's decision to limit its capacity to 5GWh until FY2029 significantly dilutes the commitments that the ACC PLI scheme envisions.[12]

Although all auction winners have delayed their commissioning, Rajesh Exports' complete lack of progress and absence of public updates raise concerns over its ability to commission the capacity anytime soon. While the company signed a tripartite agreement with the MHI and the Government of Karnataka's Department of Industries and Commerce for its gigafactory in January 2023, and also created a subsidiary for its cell manufacturing business, it has not announced any other key developments since then.

[12] Financial Express, Ola Electric delays cell plant expansion, 14 July 2025

Table 3: Details of gigafactories (as of October 2025)

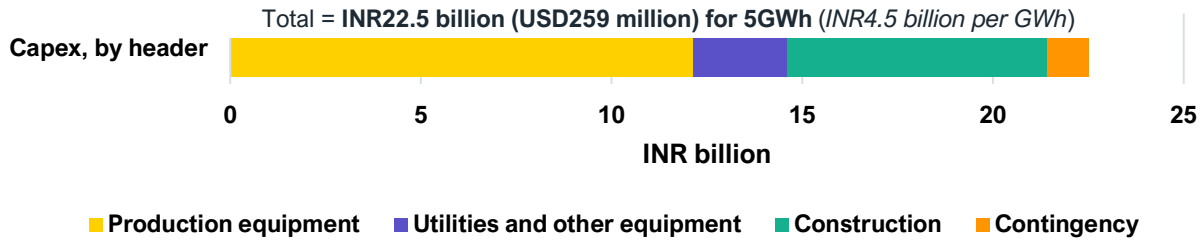
Activities	Ola Electric	Reliance New Energy	Rajesh Exports
Location of gigafactory	Krishnagiri, Tamil Nadu	Jamnagar, Gujarat	Dharwad, Karnataka
Initial phase timeline	5GWh by March 2026	15GWh by March 2026	Not disclosed
Production capacity	1.4GWh	0	0
Battery chemistry	NMC	LFP	Not disclosed
Cell size (diameter x height)	46mmx80mm	Not disclosed	Not disclosed
Cell capacity	100 watt-hour (Wh)[13]	Not disclosed	Not disclosed
Bureau of Indian Standards (BIS) certification for cell	May 2024	Not applicable	Not applicable
BIS certification for battery pack	October 2025	Not applicable	Not applicable
Technology tie-ups	StoreDot for fast charging	Faradion for sodium-ion battery. Lithium Werks for LFP battery. Ambi Inc. for calcium-antimony liquid metal battery	Not disclosed
Funding details	INR32 billion (USD368 million) for EV and cell manufacturing by Temasek and SBI.[14]	INR600 billion (USD6.90 billion) for battery storage, PV modules, green hydrogen, power electronics, and fuel cells by Reliance Industries Ltd.[15]	Not disclosed

Sources: New articles, JMK Research

[13] NDTV Profit, How Ola Plans To Make EVs Minus Rare Earth Minerals, 18 August 2025
[14] ET Energy, Ola Electric raises INR 3,200 crore, 26 October 2025
[15] Reliance, A Fully Integrated Renewable Energy Ecosystem

Ola Electric is developing its 5GWh factory in Tamil Nadu, with a budgeted capital cost of around INR4.5 billion (USD51.72 million) per GWh.[16] The cost structure, as shown in Figure 5, is heavily equipment-driven, with around 65% of the investment allocated to equipment and utilities, followed by 30% for construction and 5% earmarked for contingencies. Ola Electric is primarily targeting NMC technology for its battery cell production and claims that its in-house developed 4680 NMC cell delivers 10% higher energy density, three-to-five years longer lifespan, and 50% faster charging compared to the traditional 2170 cells.[17] However, the use of NMC chemistry in home storage raises safety concerns due to its associated fire risks. Therefore, the company plans to introduce LFP cells in the future for safer, lower-cost BESS applications. Recently, Ola Electric introduced home battery storage systems in October 2025, offering 1.5KWh, 5.2KWh, and 9.1KWh packs with uninterruptible power supply (UPS) support.[18]

Figure 5: Ola Gigafactory budgeted capital expenditure



Source: Ola Electric

Reliance New Energy is developing its battery manufacturing facility as part of the massive "Dhirubhai Ambani Green Energy Giga Complex".[19] The company continues to build the battery cell gigafactory, advancing civil works and preparing equipment, but it expects to start full commercial cell production by FY2027 only. This gigafactory supports the company's goal to build a globally competitive battery manufacturing ecosystem in India and serve downstream applications in EVs and stationary energy storage. Despite the withdrawal of Chinese firm Xiamen Hithium Energy Storage Technology from the proposed partnership for the development and licensing of lithium cell technology, Reliance New Energy has clarified that there will be no change in its implementation plans.[20]

The ACC PLI incentives were originally scheduled to begin disbursing from January 2025, but no beneficiary met the required milestones, and therefore no payouts had been made as of October 2025. Facing significant delays and potential penalties, all three beneficiaries have reportedly approached the MHI to request timeline extensions and relief from penalties. However, the ministry has not released any official confirmation regarding these discussions.

[16] Ola Electric, Project Cost Vetting Report, 24 July 2024
[17] Manufacturing Today, Ola Electric unveils indigenously built cell, 16 August 2025
[18] Business Standard, Ola Electric announces entry into ₹1 trillion BESS market, 16 October 2025
[19] Reliance New Energy Battery Ltd, Financial Statement, 18 April 2025
[20] Reuters, India's Reliance Industries says battery manufacturing plans on track, 12 January 2025

Key challenges and reasons for delays

The ACC PLI scheme did not achieve the success envisioned. Beneficiaries have pointed to several issues, which include the design flaws in the scheme, supply chain disruptions, implementation bottlenecks, and challenges in meeting global cost competitiveness, leading to significant execution and project realisation delays.

Flaws in the scheme's design

- **Ambitious DVA requirements:** Beneficiaries are struggling to achieve the mandated DVA targets — 25% within two years and 60% within five years — and argue that the focus should first be on getting domestic manufacturing off the ground. They suggest that DVA requirements be relaxed for the initial stage, allowing companies to establish initial production capacity and then progressively ramp up localisation to meet the stipulated thresholds.
- **Aggressive timelines:** The scheme's two-year timeline for setting up manufacturing facilities is highly aggressive, given that beneficiaries must build operations from scratch in the absence of a mature domestic battery cell manufacturing ecosystem.
- **A high minimum-bid capacity:** The auction was designed to bid a minimum of 5GWh capacity. As a result, capacity was awarded to only three beneficiaries in the auction. A more diversified distribution of capacity awards could have fostered greater competition, pushing participants to accelerate installation, innovate more aggressively, and achieve milestones more efficiently.
- **Capacity awarded to inexperienced players:** All the three selected beneficiaries lacked prior experience in battery manufacturing and entered the sector for the first time. In contrast, established domestic players such as Amara Raja Batteries and Exide Industries did not secure allocations, as the scheme did not incorporate experience-based evaluation criteria. Although the scheme permitted participation by international manufacturers, it did not succeed in attracting bids from established global players. Notably, companies such as LG Chem despite having earlier indicated interest in setting up manufacturing facilities in India did not participate. This outcome suggests that the scheme's design and incentive structure were insufficient to draw experienced global players. Had the scheme successfully attracted and selected manufacturers with proven capabilities, the pace of capacity development and execution could have been materially stronger than that achieved by new entrants still building foundational competencies.

Supply chain issues

India lacks battery manufacturing ecosystem and faces structural supply-chain risks due to its heavy dependence on China for manufacturing equipment, critical raw materials, and refined minerals.

Limited domestic mining and refining capacity, combined with China's control over global pricing and recent export curbs, constrain India's efforts to build a self-reliant battery manufacturing sector.

- **Manufacturing equipment imports:** China supplies most of India's cell manufacturing equipment, and it has increasingly imposed curbs on these exports.[21]
- **Access to raw critical minerals:** India has limited domestic mining capacity, only of manganese, and relies heavily on imports for key battery materials like lithium, nickel, and cobalt. China exerts significant influence over global prices of raw material. For instance, lithium, a critical input for battery cell manufacturing, has experienced sharp price volatility since 2021, largely because market conditions in China have pushed prices up and down.[22]
- **Access to refined critical minerals:** India relies heavily on imports for refined lithium, nickel, cobalt, and manganese, with its domestic refining capacity of cobalt and manganese still in nascent stages. The refining is largely done in China, which controls the global critical minerals refining market and has recently begun curbing exports to other countries like India.[23]

Table 4: China's hold on the global lithium battery supply chain market

Mineral / chemistry	China's market share	India's market share
Mining		
Lithium	27%	Negligible
Nickel	32%	Negligible
Cobalt	36%	Negligible
Manganese	12%	3%
Refining		
Lithium	60%	Negligible
Nickel	74%	Negligible
Cobalt	61%	0.1%
Manganese	72%	0.2%
Cathode active material (CAM) production		
NMC	98%	Negligible
LFP	48%	Negligible

Source: Science Direct[24]

[21] Economic Times, China strikes with export curbs, 16 January 2025
[22] International Energy Agency, Global Critical Minerals Outlook 2025
[23] Business Today, Economic Survey 2024-25 raises concerns over India's EV imports from China, 31 January 2025
[24] Science Direct, China's hold on the lithium-ion battery supply chain, April 2025

- **Nascent domestic recycling of critical minerals:** Though increasing rapidly, the Indian industry does not have strong (lithium-ion) (Li-ion) battery recycling facilities that can help Indian battery manufacturers to rely less on the import of critical minerals. Critical minerals required for batteries like lithium, cobalt, nickel, manganese and graphite are 90% recyclable and this can help India in their domestic availability.[25] China controls over 70% of global recycling market followed by Europe and the US.[26]

Cost competitiveness challenges

Aided by their robust battery manufacturing ecosystem, Chinese players can manufacture battery cells at a much cheaper rate than anywhere else in the world. Moreover, the Chinese government aids the ecosystem with strong policy support, low-cost financing, and government-backed industrial parks with subsidised electricity and land costs. Consequently, India-made batteries are at least 20-30% costlier than their Chinese counterparts.[27]

Without any upfront quality control measure from the Indian government — like the approved list for models and manufacturers (ALMM) for solar, and domestic industry protection measures like basic customs duty (BCD) and anti-dumping — domestic battery cell manufacturers will find it increasingly difficult to compete with China on quality and prices, and the outlook on scaling production will remain uncertain.[28]

Implementation bottlenecks

- **Lack of experience and adequate skilled workforce:** The beneficiaries of the ACC PLI scheme lack experience in battery or cell manufacturing. India also faces a shortage of skilled battery technicians, leading to heavy dependence on Chinese experts for factory commissioning and operationalisation. This has further delayed technology and engineering knowledge transfer, as visa processing for Chinese personnel has slowed due to ongoing border issues.
- **No testing and certification infrastructure:** While India has made significant progress in establishing battery pack testing and certification infrastructure, cell-level testing capabilities are still lacking.[29] This dependence on overseas facilities, primarily in China and Europe, slows down validation cycles and ultimately delays the launch of market-ready products.
- **Land acquisition delays:** One of the beneficiaries of the scheme, Rajesh Exports, reported land acquisition issues due to local protests, which were later cleared after intervention by the local government.[30,31]

[25] Attero, Lithium battery recycling efficiency recovery, 3 April 2025
[26] Statista, Battery recycling worldwide - statistics & facts, 8 October 2024
[27] Live Mint. India's EV battery dream hits the great price wall of China. June 2025
[28] Ministry of New and Renewable Energy, Approved List Of Models And Manufacturers (ALMM)
[29] Outlook, Battery Low: What's Stopping India's Green Power Progress, 1 January 2025
[30] Financial Express, Ola, Reliance, Rajesh Exports seek penalty waiver, deadline extension, 14 May 2025
[31] Energetica, Rajesh Exports Signs Agreement with GOI for 5 GWh Lithium-ion Cell Factory, 25 January 2023

EV market instability

The EV sector is the largest consumer of lithium batteries in India, accounting for roughly 70-80% of total battery demand. EV sales in FY2024-25 grew year-on-year (YoY) at 15.3%, significantly lesser than the 49% CAGR prediction between 2022 and 2030.[32,33]

Uncertainty and slower-than-expected growth in the EV market has demotivated the ACC PLI winners to speed up the construction of facilities (applicable for Reliance New Energy and Rajesh Exports) or increase the production capacity (applicable to Ola Electric). A majority of the battery players are currently in wait-and-watch mode until the market demand stabilises and aligns with long-term growth trajectory.

Impact on sector

Considering the significant delays and execution challenges, the ACC PLI scheme is yet to achieve its intended impact, with capacity installation remaining nascent at just 2.80% and overall development behind schedule. In addition, the sector has attracted only 25.58% of the targeted investment. Table 5 compares the scheme's targets with actual achievements.

Table 5: Target vs achievement of ACC PLI scheme as of October 2025

Parameter	Target / estimated	Achievement	Achievement rate (%)
Installed capacity	50GWh	1.4GWh	2.80%
Investment	~INR112.5 billion (USD1.29 billion)	~INR28.78 billion (USD331 million) as of 31 October 2025[34]	25.58%
Jobs	~INR1.03 million (USD11,839)[35]	1,118 as of 31 October 2025[36]	0.12%
Incentives disbursement	~INR29 billion (USD332 million) by October 2025[37]	Zero[38]	0.00%

Source: News articles, JMK Research

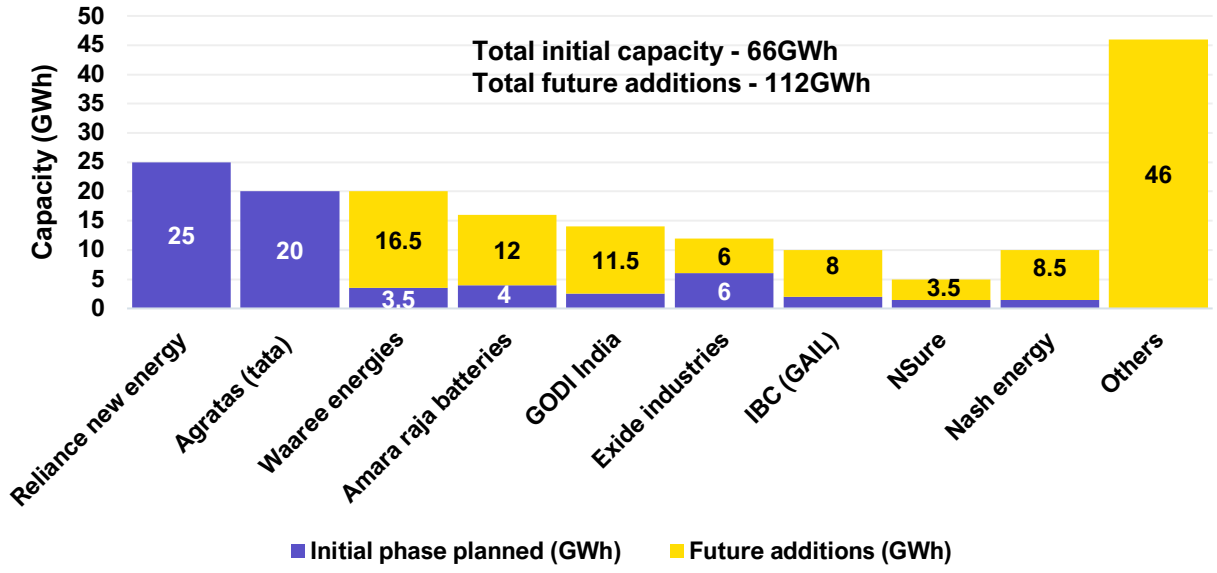
[32] JMK Research, Annual India EV Report Card: FY2025
[33] Press Information Bureau, Indian EV Market, 20 July 2023
[34] Press Information Bureau, PLI SCHEME FOR AUTOMOTIVE AND ACC BATTERY STORAGE, 9 December 2025
[35] Institute for Competitiveness, Assessment of PLI Scheme, 14 November 2024
[36] Press Information Bureau, PLI SCHEME FOR AUTOMOTIVE AND ACC BATTERY STORAGE, 9 December 2025
[37] Note: As per incentives outlined in the scheme, INR27 billion for FY2024-25 and INR38 billion for FY2025-26.
[38] Note: No beneficiary has started commercial production and sales as of October 2025.

Ola Electric is the only beneficiary that has commissioned an installed capacity of 1.4GWh. The sector has reportedly received investment of INR28.78 billion and created 1,118 jobs. None of the beneficiaries, though, have received incentives since no sales have been reported as of 31 October 2025. However, the focus by the government on developing the domestic battery manufacturing ecosystem has indirectly led to a substantial investment influx, resulting in ~178GWh capacity being under development outside the ACC PLI scheme.[39]

Capacity development outside ACC PLI

The ACC PLI scheme has attracted significant industry interest, with both auction phases witnessing substantial oversubscription. This strong response has encouraged several unsuccessful bidders, as well as new entrants to pursue battery manufacturing capacities outside the scheme. Recognising the long-term growth potential of India's energy storage and EV markets and aligned with the global shift towards the China+1 strategy to reduce dependence on Chinese imports, these players have already outlined their initial development objectives along with clear roadmaps for future expansion.[40]

Figure 6: Capacity development by non-PLI players



Source: News articles, JMK Research
Notes: Initial phase timeline – up to March 2027

Most manufacturers are establishing their facilities primarily in Gujarat, Karnataka, and Telangana. Key factors driving these location choices include supportive state-level policies and, in some cases,

[39] Free Press Journal, India Advances Battery Manufacturing With 50 GWh Capacity Under PLI ACC Scheme, 10 December 2025
[40] Economic Times, India becoming key pillar to the China+1 strategy for global auto OEMs, 9 August 2025

proximity to ports, which lower logistics costs and transit time. For instance, Karnataka offers incentives such as an Effluent Treatment Plant (ETP) subsidy equivalent to 1% of turnover, while Telangana offers 20% capital subsidy and other incentives for enterprises engaged in EV cell and battery pack manufacturing.

Players developing manufacturing capacities outside the ACC PLI scheme are targeting both NMC and LFP chemistries, recognising that each caters to distinct market segments. Due to high energy density, NMC remains the preferred choice for mobility applications, while the stationary energy-storage sector widely adopts LFP due to higher lifecycles and no size constraints.

These non-PLI manufacturers remain optimistic about market growth and have indicated plans to begin production at their facilities by the end of 2027.

Consequences of delayed capacity development

Delays in the rollout of PLI-backed facilities have slowed the sector's progress. Without these setbacks, India could already have a fully integrated battery manufacturing ecosystem exceeding 30GWh. Moreover, companies lagging in their commissioning timelines face financial consequences, including bank guarantee encashment and loss of potential revenues.

- **Penalties levied by government:** Beneficiaries are liable to pay 0.1% of their performance security for each day of delay in commissioning the committed capacity. For Ola Electric, this equates to INR1.25 million (USD14,368) per day, resulting in a cumulative penalty of INR380 million (USD4.37 million) as of 31 October 2025. For Reliance New Energy and Rajesh Exports, the applicable penalty is INR500,000 (USD5,747) per day, translating to a total of INR152 million (USD1.75 million) each, as of 31 October 2025.
- **Continued reliance on battery imports:** The intention of the ACC PLI scheme was to develop domestic cell manufacturing capacity and reduce reliance on imports. Delays in the commissioning of capacities have exposed India to higher imports since domestic battery demand is growing, led by EV and stationary storage applications.

Recommendations

The ACC PLI scheme is essential for India's clean energy transition, and the way forward requires recalibration of the scheme and its implementation, as well as introducing new measures to improve its overall effectiveness.

Table 6: Recommendations for growth of cell manufacturing industry

Header	Recommendations
	Immediate
Expedite visa approvals	The central government must fast-track visa approvals for Chinese skilled technicians needed to commission the ACC PLI facilities under development.
ACC PLI scheme relaxations	**Timelines extension:** Beneficiaries must be granted an extension of another one year for the gestation period, considering the genuine delays they are experiencing. If they fail to commission their facilities despite the extension, the government must reallocate the undeveloped capacity from these beneficiaries to other qualified players after due penalties. **DVA relaxation:** Relax the 25% DVA requirement for the first two years to allow facility set-up, then enforce it gradually with penalties for non-compliance. Expand DVA definition to include research and development (R&D), building management system (BMS) software, and core engineering.
	Near term
Quality standardisation	**Approved list of battery manufacturers (ALBM):** The government can introduce measures like ALBM gradually to standardise the quality of locally manufactured battery cells. This will help domestic industry to manufacture cells of global quality standards and compete with international players. **Cell testing and certification:** The government can set up accredited testing centres, upgrade existing labs, and incentivise private facilities to ensure faster domestic certification.
	Long term
Domestic supply chain ecosystem	**Mining:** The government identified and auctioned approximately 5.9 million tonnes of lithium reserves in the Jammu and Kashmir (J&K) region. However, the auction failed to attract even a single qualified bid.[41] While the government is reviewing the outcome in consultation with industry experts and considering a re-auction, stakeholders believe that existing mining policies need to be redesigned to be more investor friendly. Meanwhile, the government should proactively undertake and execute more detailed geological surveys to strengthen the identification and development of critical mineral resources. **Refining and processing:** India needs to increase public-private investments in the refining of lithium, nickel, and cobalt to build domestic processing capacity and reduce dependence on critical mineral imports. Backward linkages for minerals may be established through global partnerships. **Equipment manufacturing industry:** The industry remains heavily dependent on China for cell-manufacturing equipment due to India's nascent domestic ecosystem. As cell manufacturing expands, a significant opportunity will emerge to build and scale local equipment capacity, provided the government supports it through targeted incentives and protective measures against dumping.

[41] Business Standard, J&K's 5.9 mn tonne lithium reserve to be re-explored after failed auction, 17 October 2024

	Battery recycling: India can significantly strengthen its local supply by expanding domestic recycling capacity and supporting it with a dedicated PLI scheme for raw-material recovery. **PLI for ancillary components:** The government needs to introduce a dedicated PLI for battery components such as cathodes, anodes, and electrolytes to attract tier-2 and tier-3 suppliers and strengthen the domestic battery value chain.
Research and training	**Research and development:** Promote research and development activities through specialised tie-ups between industry and research institutions to develop and realise new-age emerging battery technologies, such as sodium-ion, and vanadium redox flow, among others. **Institutional capacity development**: Facilitate government-private partnerships to train engineers for skills required for battery manufacturing.

Source: JMK Research

Conclusion

Since the scheme's launch, the domestic battery market has grown rapidly, yet India remains almost entirely dependent on imported battery cells. The government designed the ACC PLI scheme to build domestic cell manufacturing capacity and reduce this reliance. However, it has not seen the intended progress, with beneficiaries struggling to install their committed capacities. While some delays stem from broader industry challenges, others are specific to individual companies.

Battery manufacturing is highly complex and technology-intensive, and building facilities requires time. However, the scheme's timelines were overly aggressive and a better fit for a mature market like China, which has nearly a decade of experience in lithium-ion cell production. With battery technology evolving rapidly, India needs a comprehensive, integrated strategy to compete effectively. Going forward, future PLI iterations would benefit from a more diversified allocation strategy rather than limiting it to a select few beneficiaries. This would enable wider participation and allow companies to leverage their individual strengths. Moreover, future tenders should include detailed beneficiary selection guidelines and mandate robust background and financial checks to avoid disputes and delays in facility development later.

The government has largely monitored the scheme's progress rather than actively engage with beneficiaries to resolve implementation challenges. While tariff and non-tariff measures will be essential, the government must balance their rollout with actual market demand. Industry stakeholders believe that imposing harsh penalties for PLI is counterproductive, especially when the scheme's objective is to encourage, and not discourage, domestic manufacturing. Relaxing timelines and waiving penalties would be an important first step, and beneficiaries are already in discussions with the government about this. Long-term sectoral growth will also depend on lithium recycling, R&D into alternative chemistries, and developing skilled domestic talent.

It is equally important to assess how India can attract global battery manufacturers to establish manufacturing facilities in the country. The government designed the scheme to encourage both domestic and international participation and bringing established global players into the ecosystem would strengthen capabilities, accelerate technology transfer, and help steer the industry in the right direction.

Global battery prices will heavily influence the long-term viability of domestic manufacturing. Costs continue to fall due to economies of scale and technological advancements. Having lost valuable time in the solar manufacturing race, and only now recovering, the country cannot afford a similar setback in the battery sector.[42] Therefore, India must proactively position itself as a credible alternative to China by leveraging the 'China+1' strategy to attract investment, build scale, and integrate more deeply into global value chains.

Introducing a scheme like the ACC PLI was an essential step toward motivating the industry and initiating India's push in domestic cell manufacturing. However, given the current challenges, India remains at least five years away from achieving scalable production, assuming the government actively strengthens the broader ecosystem. Until then, the industry will continue to rely heavily on imports, primarily from China. Recent partnerships with Australia and Chile for critical minerals are positive developments, but India must implement further phased, strategic interventions to build a resilient and competitive domestic battery supply chain.

[42] JMK Research and Analytics, Assessing the effectiveness of India's solar Production Linked Incentive scheme, December 2025

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