

MAKE IN INDIA MITTELSTAND!

Make in India Business Support Programme for German Mittelstand and Family Owned Enterprises

- SECTOR OVERVIEW – ENERGY STORAGE
- LI-ION BATTERIES – COMPETITIVE LANDSCAPE
- GOVERNMENT INITIATIVES
- RECENT MIIM EVENTS
- ABOUT MIIM AND UPCOMING EVENTS

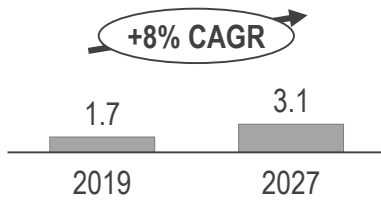
1. ENERGY STORAGE – SECTOR OVERVIEW

MARKET OVERVIEW

STATIONARY ENERGY STORAGE



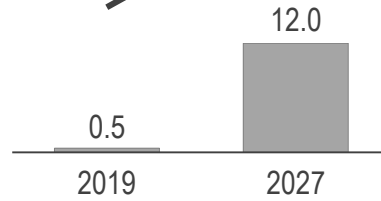
Market size
(bn EUR)



Capacity in
(GWh)



EV BATTERIES



Market size
(bn EUR)



Capacity in
(GWh)

MARKET TRENDS

- Renewable integration into the grid is expected to increase at **32% CAGR** by 2027 considering the government's continued impetus on wind and solar power projects development in line with its **RE targets of 175 gigawatt (GW) by 2022 and 450 GW by 2030.**
- Penetration of lithium-ion batteries projected to increase from **4% to 45% by 2027** due to decreasing prices of lithium-ion battery systems; contribution of flooded lead-acid batteries to reduce from **52% to 19%** and valve-regulated lead-acid batteries from **44% to 31%**

- Declining lithium-ion battery prices coupled with benefits offered by lithium-ion batteries are driving demand for lithium-ion batteries in electric vehicles (EVs)
- In order to develop battery manufacturing ecosystem, battery manufacturers and EV makers including start-ups and established automotive players are investing indigenously in developing EV battery manufacturing plants

“Development of storage systems is necessary in order to ensure 24x7 power supply using RE sources like solar and wind. We are inviting companies to manufacture batteries in India.”

“In e-mobility technology the most important thing is we should not depend on importing the material used to make EVs. Our priority is to make all these materials, particularly lithium-ion batteries in India.”



*Mr. R. K. Singh,
Minister of State for
Power and New &
Renewable Energy*



*Mr. Nitin Gadkari,
Union Minister for
Road Transport &
Highways*

1. ENERGY STORAGE – SECTOR OVERVIEW

NEED FOR ENERGY STORAGE

- **Government thrust on e-Mobility:** The Government of India's (GoI) plan to achieve 30% EV adoption by 2030 is fostering India's way-ahead for e-Mobility transition. This transition has increased prominence of energy storage system for EV industry in India
- **Need for grid stability in renewable energy sector:** Need to balance the power load and reduce the strain on the grid increases as the share of variable power generation (wind and solar PV) grows due to India's ambitious target of achieving renewable energy installed capacity of 175 gigawatt (GW) by 2022 and 450 GW by 2030
- **Power back-up need for telecom towers:** As per GoI's mandate telecom operators are expected to use batteries as part of hybrid system for powering telecom towers, considering ~40% of the telecom towers face >12 hours/ day load shedding
- **Industrial and commercial application:** Increasing usage of the solar powered generators over conventional diesel system driving need for energy storage
- **Government push for distributed energy system:** Policy focus on developing mini-grids and microgrids in India, distributed energy generation is expected to account for 893 TWh (19%) of the total demand by 2050 from current 135 TWh
- The GoI in March 2019, launched the "**Transformative Mobility and Energy Storage Mission**" to promote clean, connected, shared and sustainable mobility initiatives. Under the mission, a phased roadmap to implement battery manufacturing at Giga-scale is being considered with an initial focus on large-scale module and pack assembly plants, followed by integrated cell manufacturing.



INDUSTRY STATUS-QUO

- **Domestic energy storage market** is at nascent stage and dominated by lead acid batteries, which are manufactured domestically
- India is dependent on China, Taiwan and Japan for imports of lithium-ion batteries.
- Energy storage market is gradually shifting towards the lithium-ion batteries, due to various disadvantages of the lead acid batteries as against lithium-ion batteries offering distinct advantages such as high energy density, slow self-discharge and low maintenance.

CHALLENGES

- India lacks reserves of key mineral (lithium, cobalt, nickel, copper) required for manufacturing lithium-ion battery.
- Domestic battery manufacturers lack cost-effective cell manufacturing expertise. Domestic companies would need to partner with international players in order to bring down manufacturing cost.
- While industry stakeholders are setting up their base in India or have announced manufacturing and assembly lines for lithium-ion batteries, still higher scale of battery production is required to be able to meet the EV industry demand in India.

2. LITHIUM-ION BATTERIES – COMPETITIVE LANDSCAPE

KEY MARKET PLAYERS

Established players



Start-ups



KEY INVESTMENTS FOR LITHIUM-ION BATTERIES MANUFACTURING

Lithium-ion industry is attracting manufacturing partnerships between international giants and India partners for setting up localized production units, cell design partnerships ensuring sustainable production

COMPANY	COUNTRY	INDIA PARTNER	YEAR	CO-OPERATION	INVESTMENT SCOPE
JS POWER		Identification in-progress	2020	In progress	<ul style="list-style-type: none"> 4 mio EUR invested for R&D facility; in talks with Indian firms for manufacturing partnership of lithium-ion battery
LI ENERGY		-		-	<ul style="list-style-type: none"> ~84 mio EUR investment in Thondi, Tamilnadu to set-up 1 gigawatt lithium-ion assembly line by early 2021 followed by 150 MW manufacturing pilot line by late 2021
ATL		-		-	<ul style="list-style-type: none"> Japanese TDK corporation owned Amperex Technology Limited (ATL) plans to invest 61 mio EUR; has acquired 180-acre land in Haryana to set-up lithium-ion Polymer (LIP) battery unit
TATA		-	2019	-	<ul style="list-style-type: none"> 89.5 mio EUR investment to set up 10 GW lithium-ion battery plant in 127-acre plant site in Dholera, Gujarat by 2021; 1.7 GW capacity in first phase
LIBCOIN			2018	Partnership	<ul style="list-style-type: none"> Investments for 1 GWh factory planned, expected to be operational by 2021 Future production ramp up to 30 GWh
Leclanché				Joint venture	<ul style="list-style-type: none"> Investment of ~25 mio EUR with a target of 3 mio cells by 2021 & capacity 1.5 GWh Exide 75% and Leclanché 25% stake. Currently, the cells are being imported from leclanche's plant in Germany.
LG Chem				Partnership	<ul style="list-style-type: none"> Entered in Li-ion cell sourcing and cell design partnership with LG chemicals; to be introduced in Mahindra E-vehicles
DENSO TOSHIBA				Joint venture	<ul style="list-style-type: none"> Investment of ~160 mio EUR for facility setup in Gujarat; operational by 2021 Suzuki India 50%, Toshiba 40%, Denso 10%
		India		Technology Transfer Agreement	<ul style="list-style-type: none"> ISRO transferred technology to BHEL for production of space grade Li-Ion cells
Panasonic LG Chem	 		2017	Partnership	<ul style="list-style-type: none"> Tied up with LG Chem and Panasonic for Li-ion cell sourcing while IIT Chennai will help in battery performance optimization

3. LITHIUM-ION BATTERIES – GOVERNMENT INITIATIVES

■ Production Linked Incentives Scheme

- 2 bn EUR fiscal benefits in the form of subsidy for a 5-year period for **Advanced Chemistry Cell (ACC) Battery** manufacturing to attract global investments for setting-up of 'Giga-factories' in India.
- The subsidy support will be limited to a cumulative 50 GWh of ACC manufacturing capacity in India, minimum bid may be restricted to 5 GWh capacity, which may be developed in phases over a five-year window.
- Subsidy support for single beneficiary upto 20 GWh cell manufacturing facility
- The incentive framework has been fused with the principles of Public Private Partnership ("PPP") to ensure that there is an optimal sharing of risk between the beneficiary firm and the Government to bolster investor confidence.

■ Incentives under Faster Adoption and Manufacturing of Electric vehicles (FAME) 2 scheme

- FAME 2 offers **incentives to manufacturers** of EVs with lithium-ion
- Lead-acid battery powered vehicles are excluded from the benefits

■ Phased import duty hike from April 2021 under Phased manufacturing programme to support setting up of a large scale, export competitive integrated batteries and cell-manufacturing giga plants

- Lithium-ion cells to increase to 10% from current 5%
- Assembled battery packs duty to increase from 5% to 15%

■ MoU with Bolivia to facilitate supply of key raw materials

- India has signed MoU with Bolivia for the development and industrial use of lithium to produce lithium-ion batteries
- As part of the MoU, Bolivia will support supplies of lithium and lithium carbonate to India, as well as joint ventures between the two countries for lithium battery production plants in India

4. OVERVIEW OF RECENT MIIM EVENTS

5 WEBINARS CONDUCTED DURING SEPTEMBER TO DECEMBER 2020



Topic: Insights and Opportunities in Indian Wind Turbine Manufacturing Ecosystem

Conducted by EAC, Invest India and ENERCON

Date: 23rd September 2020

- Provided insights into Indian wind energy manufacturing ecosystem, Government policies & reforms, and potential opportunities

Topic: Opportunities in Electronics Manufacturing in India

Conducted by EAC, Invest India and ENERCON

Date: 11th November 2020

- Webinar covered segment wise opportunities, government initiatives/ incentive schemes, technology trends, manufacturing landscape and challenges



Topic: Investment Opportunities in Indian State of Maharashtra

Conducted in association with Maharashtra Industrial Development Corporation (MIDC)

Date: 25 November 2020

- provide insights into industrial profile of Indian State of Maharashtra including major investment projects, infrastructure, industrial policy and incentives etc

Topic: Recent Incentives Announced by Government of India for Foreign Investors

Conducted by EAC and Invest India

Date: 15th December 2020

- Provided insights into newly announced Production Linked Investment (PLI) incentives by Indian Government

BusinessLine

Economy

India Inc gives thumbs up to PLI scheme's manufacturing push

Our Bureau | New Delhi | Updated on November 11, 2020 | Published on November 11, 2020



Topic: Recent Developments in Labour, Data Protection and Tax Framework

Conducted by Khaitan & Co

Date: 17th December 2020

- Provided insights into aspects such as exchange control regulations, data privacy aspects, employment law changes and direct and indirect tax changes.

ABOUT MIIM

About MIIM

'MIIM' is a market-entry support programme for German Mittelstand and family owned enterprises launched by Embassy of India Berlin, Germany in 2015; driven by Government of India's national programme, 'MAKE IN INDIA'.

The objective of MIIM programme is to facilitate investments by German Mittelstand and family-owned companies in India and to provide market entry related services

The MIIM program has enrolled a total of 148 companies which represent a cumulative declared investment of 1.4 bn EUR to India.

As a part of MIIM program members are exposed to a wide range of business support services under a single platform. The program is being implemented with the support of its Knowledge Partner - Euro Asia Consulting – EAC, Facilitation Partners including Central and State Government Ministries in India and also key industry partners who can support the companies in various aspects of market entry into India. Offered services includes Strategy consulting, M&A, operational market entry support, tax & legal support, financial services and other services.

Key MIIM Members: Snapshot

LIEBHERR

 **Uhlmann**


Graepel

verbio

**uni
per**

KUHN
water experts – world wide

SCHERDEL


Wir leben Lieblingswäsche

 **EIBENSTOCK**
Elektrowerkzeuge

UPCOMING EVENTS

MIIM Webinar on “Overview of Indian Economy Recovery and Outlook 2021”

- Date: 27th January 2021; Time: 10:00 AM – 11:15 AM CET; Register at: <https://bit.ly/3p89dH7>

MIIM Webinar on “Financing Options for Feasibility Studies and Investments in Indian Market ”

- Date: 29th January 2021; Time: 10:00 AM – 11:00 AM CET, Register at: <https://bit.ly/38U2rPl>



MAKE IN INDIA MITTELSTAND!

MAKE IN INDIA BUSINESS SUPPORT PROGRAMME FOR GERMAN MITTELSTAND AND FAMILY-OWNED ENTERPRISES

MIIM PROJECT TEAM:

Mrs. Paramita Tripathi | Head MIIM Project Team | Deputy Chief of Mission |
Embassy of India, Berlin

Dr. Rajesh Gawande | MIIM Project Team | First Secretary | Embassy of India, Berlin

MIIM Hotline:

Email: miim@indianembassy.de

Phone: +49-30-25795514

Fax: +49-30-25795520

MIIM online:

 www.makeinindiamittelstand.de

 www.facebook.com/IndiaInGermany

 www.twitter.com/eoiberlin

 www.linkedin.com/in/miim-make-in-india-mittelstand