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Together. Creating Value.

Batteries

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Batteries

Batteries

Introduction

- A battery stores chemical energy and converts it into electrical energy. The chemical reactions in a battery involve the flow of electrons from one electrode to another.
- Every battery (or cell) has a cathode or positive plate, and an anode, or negative plate. These electrodes must be separated by and are often immersed in an electrolyte that permits the passage of ions between the electrodes. The electrode materials and the electrolyte are chosen and arranged so that sufficient electromotive force (measured in volts) and electric current (measured in amperes) can be developed between the terminals of a battery to operate lights, machines, or other devices.
- Batteries are divided into two general groups (i) Primary batteries and (ii) Secondary/Storage batteries. Primary batteries are designed to be used until the voltage is too low to operate a given device and are discarded. Secondary batteries have numerous special design features, as well as particular materials for the electrodes that permit them to be reconstituted (recharged). After partial or complete discharge, they can be recharged by applying direct current (DC) voltage.

Source: Britannica, Australia Academy of Science

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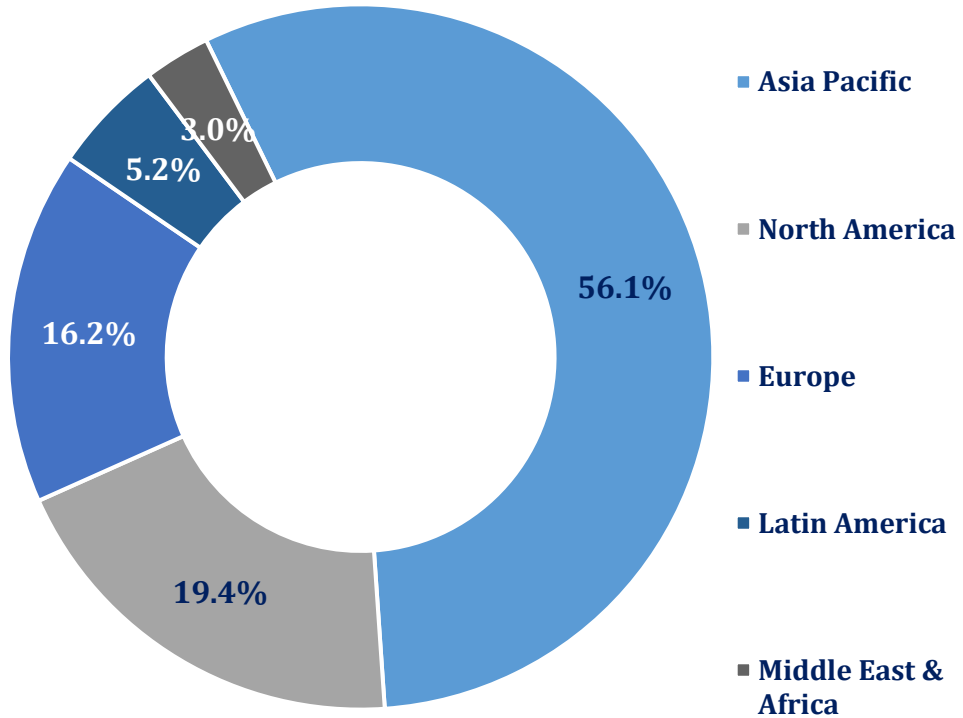
Global | Overview

- During CY24, in terms of revenue, the global Batteries Sector was valued at USD~146.2bln (CY23: USD~125.4bln), a YoY increase of ~16.5%.
- Regionally, the Asia Pacific Batteries Sector reached to USD~82.3bln in CY24 (CY23: USD~70.4bln), a YoY increase of ~16.9%. Asia Pacific region contributed ~56.1% to the global Batteries market share during CY24.
- In terms of industries, the automotive industry accounted for the majority share of the Batteries Sector during CY24. The anticipated rise in the demand for lithium-ion Batteries in the end-use segment for passenger cars is expected to be supported by rising awareness about the benefits offered by electric vehicles operating in regions like Asia Pacific, Europe, and North America.
- The global Batteries Sector is expected to reach to USD~680.9bln by CY34. The market is primarily expected to increase due to high demand of Electric Vehicles (EVs) and cleaner energy solutions (Solar). The rapid growth of the EV market is considered the key catalyst for the global Batteries Sector. EVs use Batteries to store and supply energy for propulsion of various components in the EV.

Region Wise Batteries Market Share | CY24



Source: Precedence

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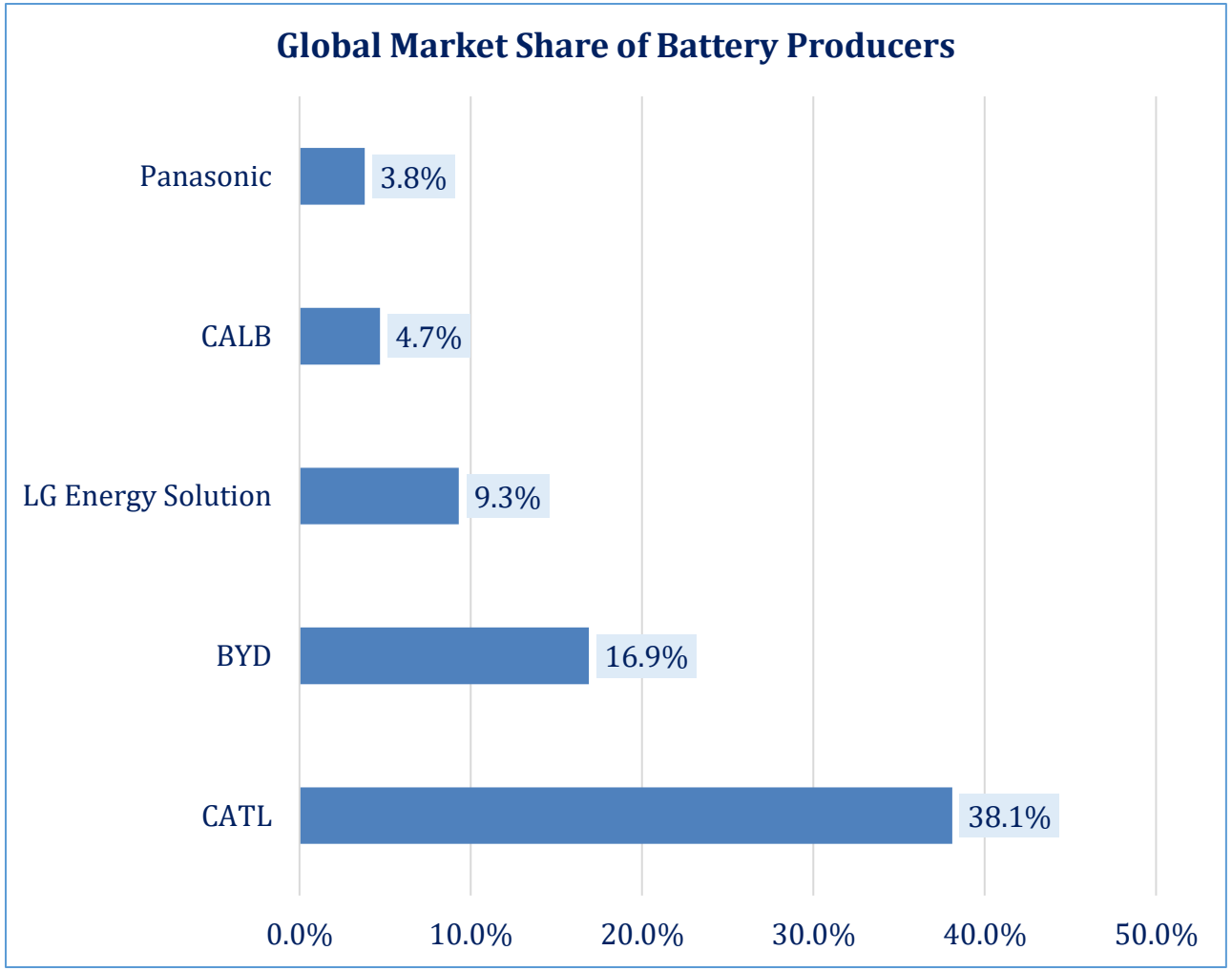
Global | Overview

- Chinese companies led the global Batteries market in CY25, capturing ~68.9% of worldwide EV battery installations.
- Contemporary Amperex Technology Co., Limited (CATL) a Chinese Battery manufacturer, led the global lithium-ion battery market in CY25, accounting for ~38.1% of total market share. Build Your Dreams (BYD), also a Chinese company, ranked second with a share of ~16.9%.
- The third largest market share holder in CY25 was LG Energy Solution, headquartered in South Korea. CALB and Panasonic followed with ~4.7% and ~3.8% shares respectively.



Source: SNE Research

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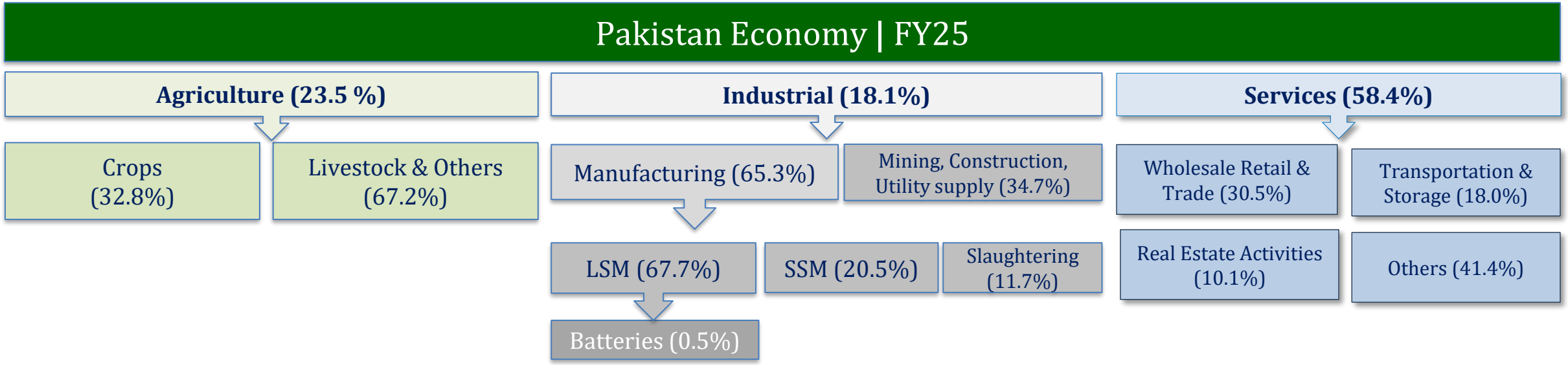
Local | Overview

- In FY25, Pakistan's GDP (nominal) increased to PKR~114.7trn (FY24: PKR~105.1trn). The GDP in real terms grew by ~2.7% YoY in (FY24: ~2.5%) and ~3.7% in 1QFY26. The GDP growth target for FY26 is expected at ~3.25% according to the State Bank of Pakistan and ~4.2% according to the Government of Pakistan.
- Industrial activities in FY25 contributed ~18.1% share to the GDP, while the manufacturing activities made up ~65.1% of the value addition in the Industrial activities. Large-scale manufacturing (LSM) in Pakistan is considered essential for economic growth, given its linkages with other sectors. LSM represented ~67.5% of the value of the manufacturing activities in FY25. However, the LSM contracted by ~1.5% YoY in FY25 (FY24: ~0.9% YoY). In 4MFY26, LSM has posted growth of ~5.02% after several quarters of negative or stagnant growth.
- The "Storage Batteries' Sector is classified as a Large-Scale Manufacturing (LSM) component within the industrial sector. In FY25, its weight was ~0.5% within the Quantum Index of Manufacturing (QIM). The weight reflects Batteries as a relatively smaller segment than major industries such as textiles or cement.



Source: PBS, PES

Batteries

Local | Snapshot

- Demand for locally manufactured lead-acid Batteries is primarily driven by the replacement market which is supported by automotive usage, seasonal electricity shortages, particularly during the summer months, and trends in automobile sales.
- During 4MFY26, however, a decline in Battery production was observed despite a ~34.0% rise in automobile production during the same period, as the total number of storage Batteries produced during 4MFY26 was down by ~31.6% YoY to ~25,868 as compared to ~38,480 produced in the same period last year.
- The Sector's exports remain minimal and decreased by ~30.1% YoY in value terms to USD~10.9mln in 4MFY26 (SPLY: USD~15.6mln), while in FY25 the Batteries exports recorded at USD~28.1mln compared to USD~29.9mln during the same period last year.
- The imports of Batteries were up ~79.9% YoY in 4MFY26 to USD~101.8mln (SPLY: USD~56.6mln). During FY25, imports clocked in at USD~150.4mln (FY24: USD~126.2mln), a YoY increase of ~19.2%.
- The domestic Batteries Sector comprises organized and unorganized segments, with the former category having ~3 major players. Meanwhile, a large number of smaller players operate in the unorganized segment.

Particulars	Unit	FY24	FY25	4MFY25	4MFY26
Production	000' No.s	153	113	38	26
Production YoY Change	%	-13.3%	-26.1%	-28.3%	-31.6%
Export Value	USD mln	29.9	28.1	15.6	10.9
Import Value	USD mln	126.2	150.4	56.6	101.8
Market Structure	Oligopoly				
Listed Players	~3				

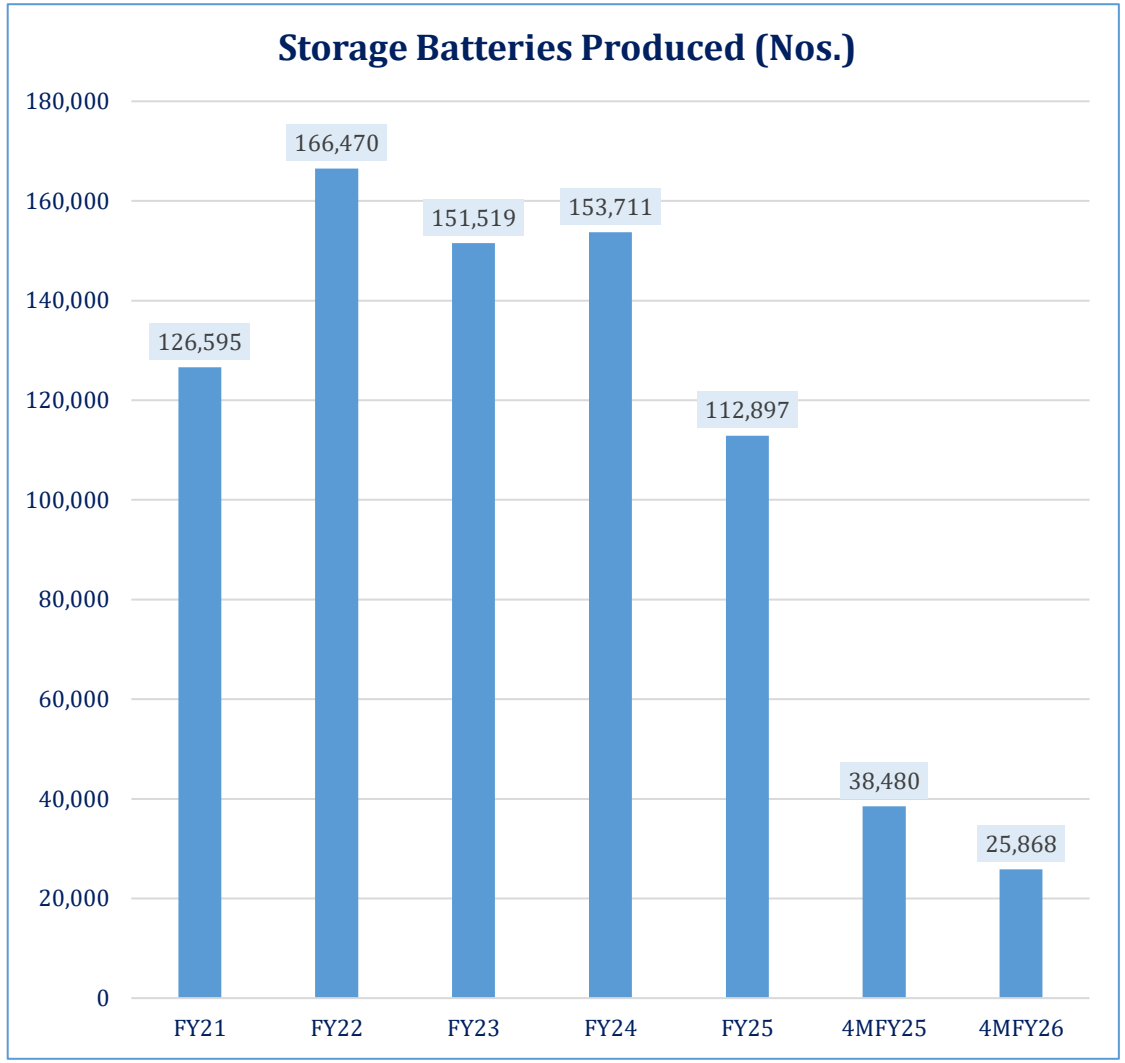
Export & Import values pertain to the storage batteries HS Code 8507

Source: PBS, SBP

Batteries

Local | Production

- During FY25, Storage Batteries production was down ~26.1% YoY, recording at ~112,897 Batteries owing to the lower demand. Following FY25, ~25,868 Batteries were produced during 4MFY26 as compared to ~38,480 batteries during SPLY, a YoY decrease of ~32.8%.
- The primary reason for decline in Battery production in FY25 and early FY26 is the shift in demand from locally produced lead-acid Batteries toward imported lithium-ion Batteries because they offer longer life, faster charging, higher energy density, and lower maintenance compared to lead-acid Batteries. In Pakistan, the rapid expansion of rooftop solar systems and rising electricity costs have accelerated adoption of lithium-ion storage solutions, which are increasingly preferred for residential, commercial, and industrial energy storage.
- Two major players of the Sector are Exide Pakistan Limited and Atlas Battery Limited, with Exide having an ~18% share in the market.
- Pakistan's energy storage market is expanding rapidly but remains highly import-dependent: lithium-ion Battery imports were about 1.25 GWh in FY25 and could rise to 8.75 GWh by CY30, indicating a material gap in domestic manufacturing capacity and a clear case for local production.



Source: PBS

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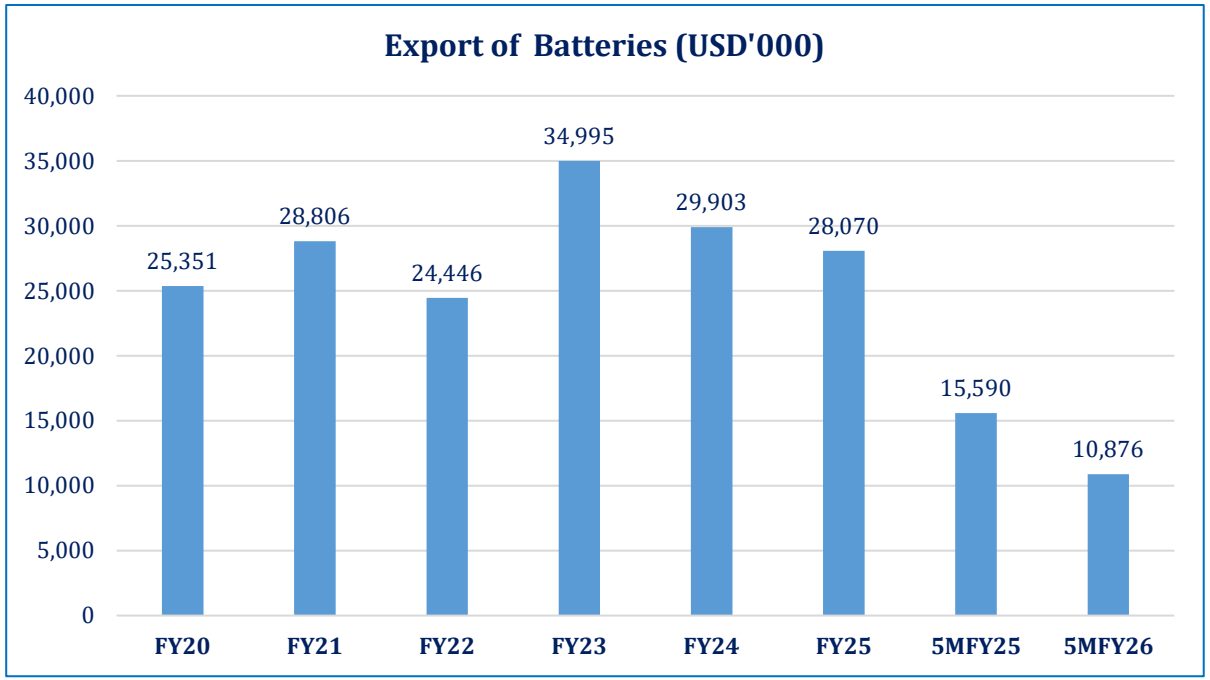
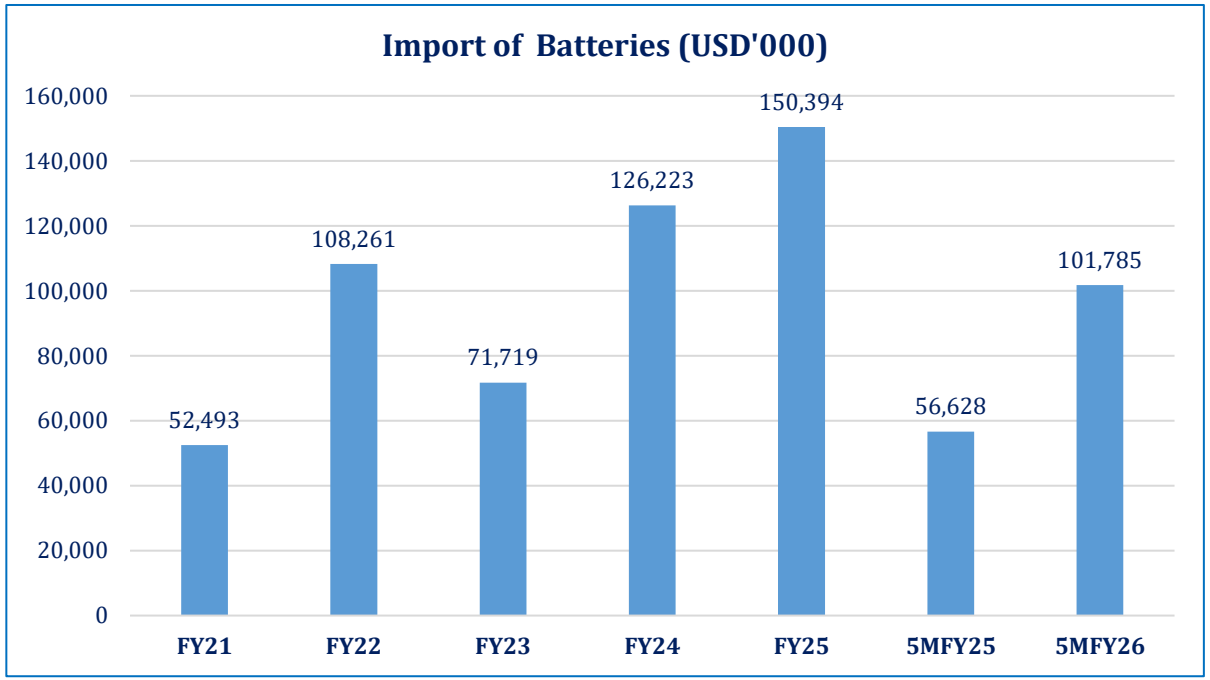
Local | Trade

- During 5MFY26, Batteries exports clocked in at USD~10.9mln (SPLY: USD~15.6mln), a YoY decline of ~30.1%. Pakistan's overall export performance has weakened in recent periods and this broad export slowdown also weighed on Battery exports, contributing to their decline alongside other manufactured goods.
- Battery imports have increased sharply in recent periods. During 5MFY26, Battery imports rose to USD~101.8mln from USD~56.6mln in the same period last year, representing a YoY increase of ~79.9%. Majority (~90.6%) of Battery imports, in value terms, were from China during 5MFY26, compared to ~55.1% in 5MFY25.





Notes: Export & Import data pertains to storage batteries HS Code 8507

Source: SBP,PBS

Batteries

Local | Raw Materials

Lead: Lead is used in lead-acid Batteries due to their proven reliability, low cost, and ease of installation. These Batteries are widely deployed and are among the most highly recyclable energy-storage technologies. While lead-acid Batteries have lower energy density and shorter lifespan than lithium-ion Batteries, they remain suitable for a broad range of applications, including automotive starter Batteries, marine, UPS, standby power, renewable-energy storage, motive power, emergency lighting, and security systems. However, lead-acid Batteries generally require periodic maintenance and have a shorter service life compared to lithium-ion alternatives.

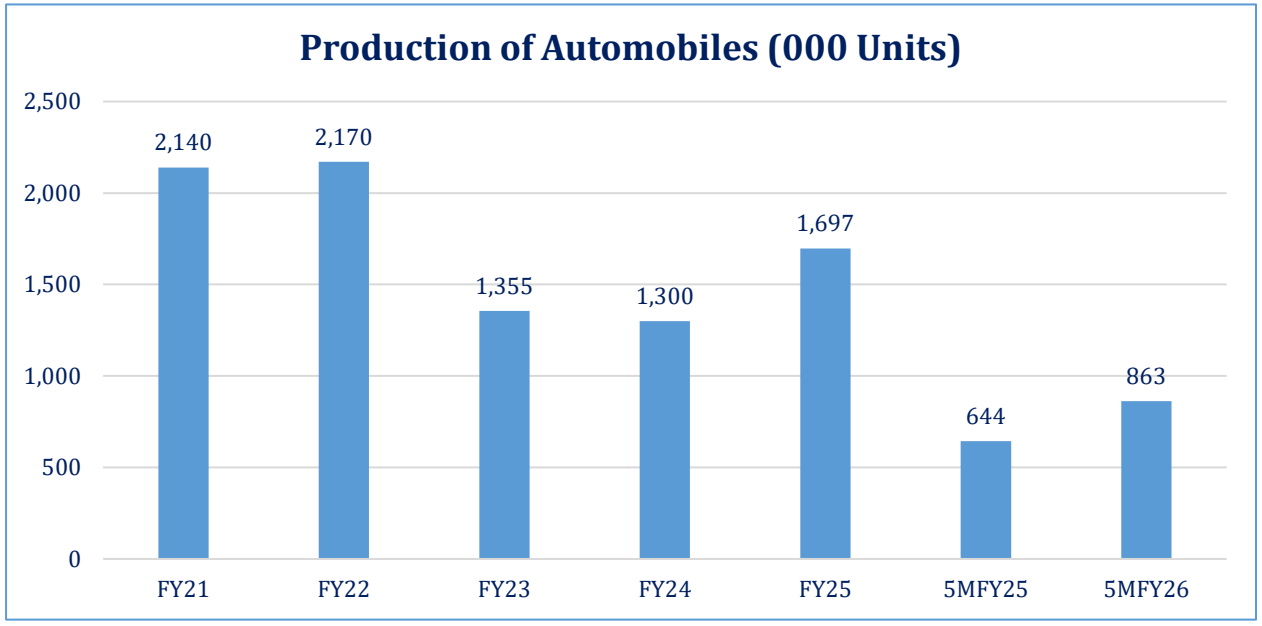
Lithium: Lithium-ion Batteries offer a much longer lifespan than lead-acid Batteries, often delivering several times more charge-discharge cycles. They can store a large amount of energy relative to their size and weight, require minimal maintenance, and retain their charge well when not in use. Lithium-ion Batteries are rechargeable and provide a higher operating voltage, making them particularly well suited for applications such as electric vehicles and modern energy-storage systems, where high efficiency and power density are critical.

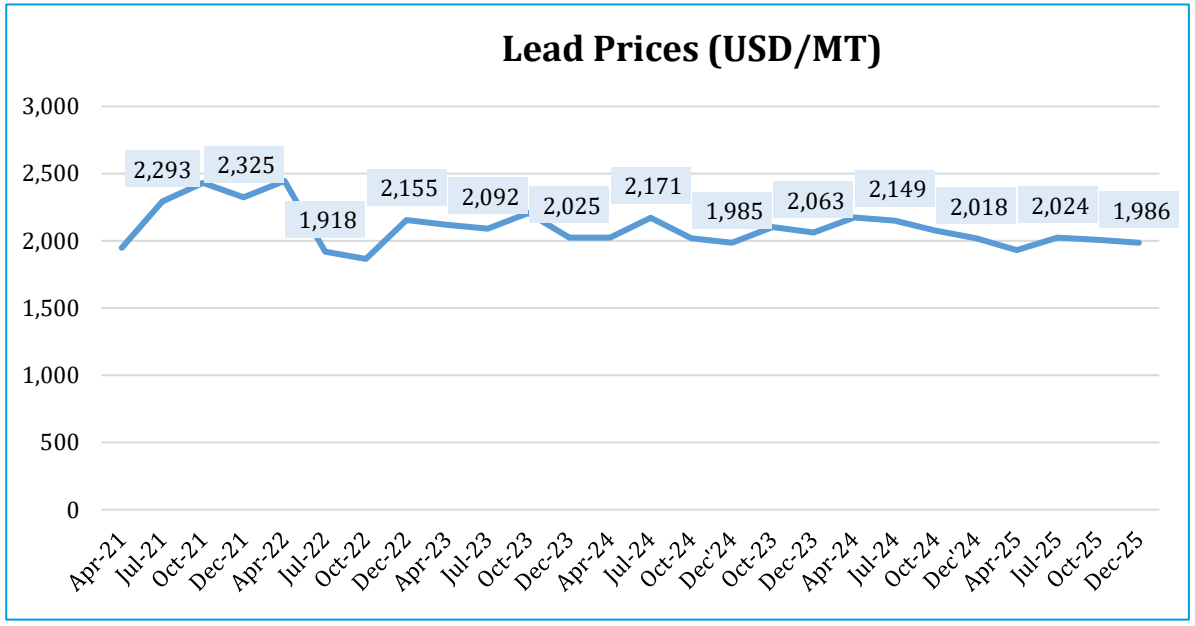
Source: PBS

Batteries

Local | Business Risk

- The production of automobiles increased by ~34.0% YoY in 5MFY26 to record at ~0.9mln units (SPLY: ~0.6mln units). During FY25, the automobile industry showed recovery, supported by a noticeable increase of ~30.5% in production. This improvement was driven by easing inflation, lower interest rates, improved financing availability, and a more stable macroeconomic environment.
- Lead is one of the main raw materials used in the production of Batteries. During FY25, lead prices dropped by ~5.9% YoY, averaging at USD~2,023/MT as global supply exceeded demand, creating surplus conditions in the market.
- Pakistan's Battery manufacturers remain highly dependent on imported lead, sourced primarily through regional trading hubs in the Middle East and Asia. Lead and related materials account for over ~78% of production costs, making the Sector highly exposed to global lead price volatility, supply-chain disruptions, and currency fluctuations. This dependence limits pricing flexibility and increases margin and liquidity risk, particularly during periods of commodity price spikes or foreign-exchange pressure.





Source: PAMA, Business Insider, LME

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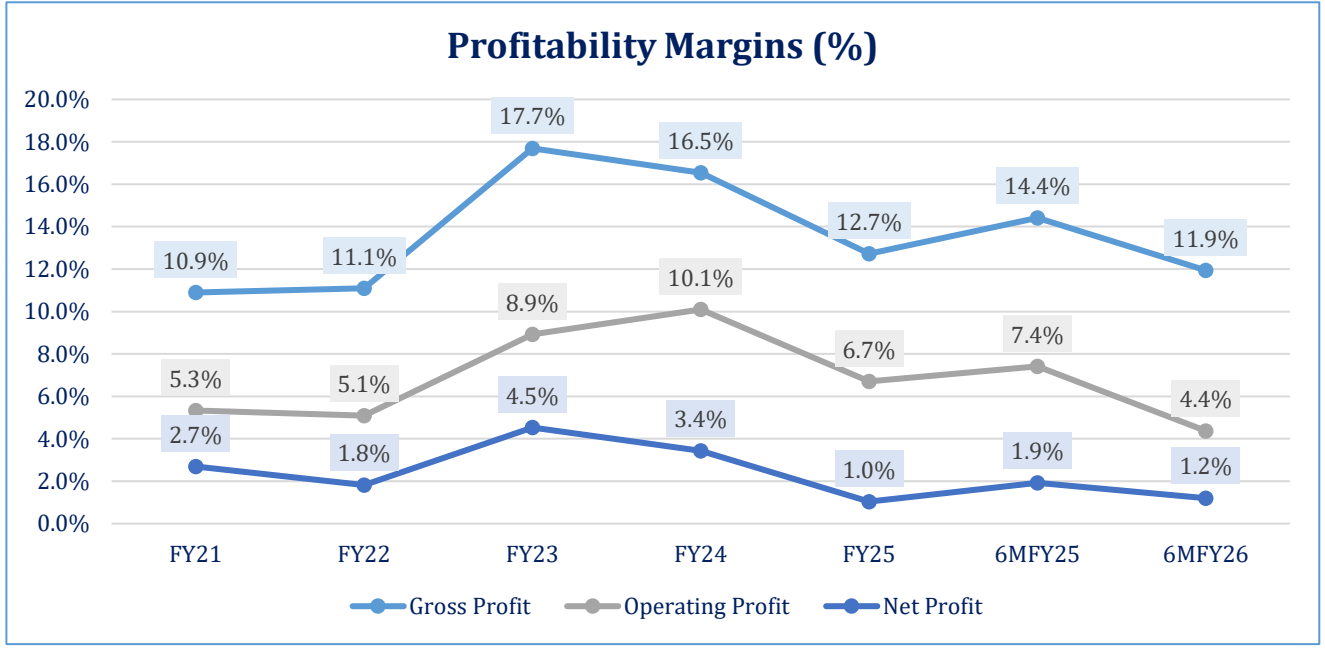
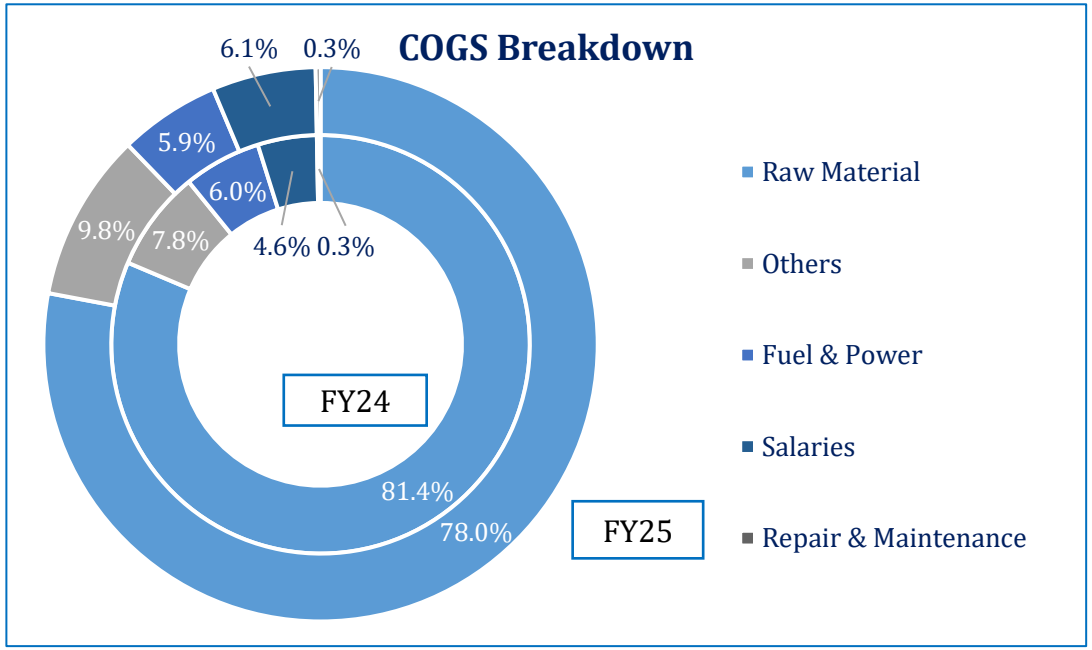
Business Risk | Margins

- Gross profit margins declined to ~11.9% in 6MFY26,compared to ~14.4% in 6MFY25. During FY25, gross margins declined to ~12.7%. The margin compression reflects a combination of weaker pricing power and an unfavorable sales mix. Softer demand led to a shift from heavy to medium-range Batteries, which carry lower margins, while intensified price and discount competition limited the Sector's ability to pass on cost pressures. This reduced per-unit realizations even as input costs remained volatile.
- Operating profit margins declined to ~4.4% in 6MFY26 from ~7.4% in 6MFY25, while in FY25 margins fell to ~6.7% as selling, distribution, and administrative costs rose sharply and did not adjust in line with lower revenues, causing expenses to be spread over a smaller revenue base and further compressing profitability.
- Net margins weakened to ~1.2% in 6MFY26 after recording at ~1.9% in 6MFY25. During FY25, net margins dropped to ~1.0%, as PAT fell by ~51.1% due to lower gross profit and higher operating costs.
- The largest component within direct costs is raw material, contributing ~78.0% of total COGS (FY25: ~81.4%), with lead as the main input, making profit margins highly sensitive to exchange rate volatility, raw material prices, and energy costs.





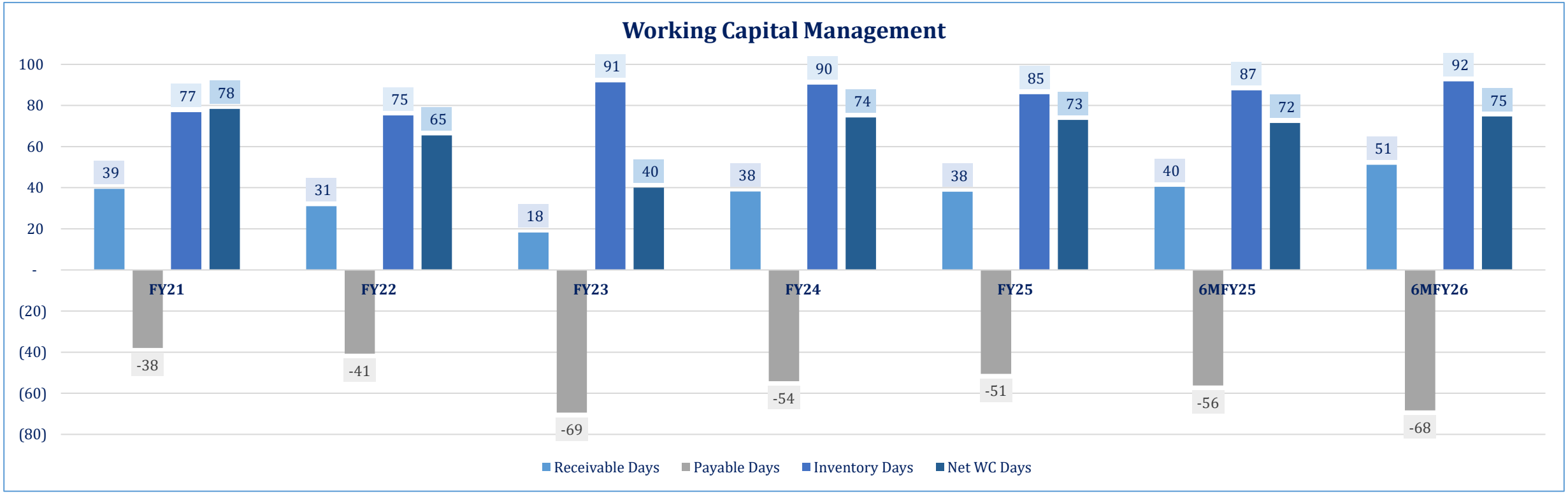
Note: Data is reflective of ~3 PACRA rated/Listed sector players.

Source: Company Financials

Batteries

Financial Risk | Working Capital Management

- The segment's working capital cycle is primarily driven by inventory and trade receivables and is financed through a mix of short-term borrowings and internal funds. In 6MFY26, net working capital days stood at ~75 days (6MFY25: ~72 days). Receivable days increased to ~51 days from ~40 days in the same period last year, while inventory days rose to ~92 from ~87. Payable days also increased to ~68 days compared to ~56 days previously.



Note: Data is reflective of ~3 PACRA rated/Listed sector players..

Source: Company Financials

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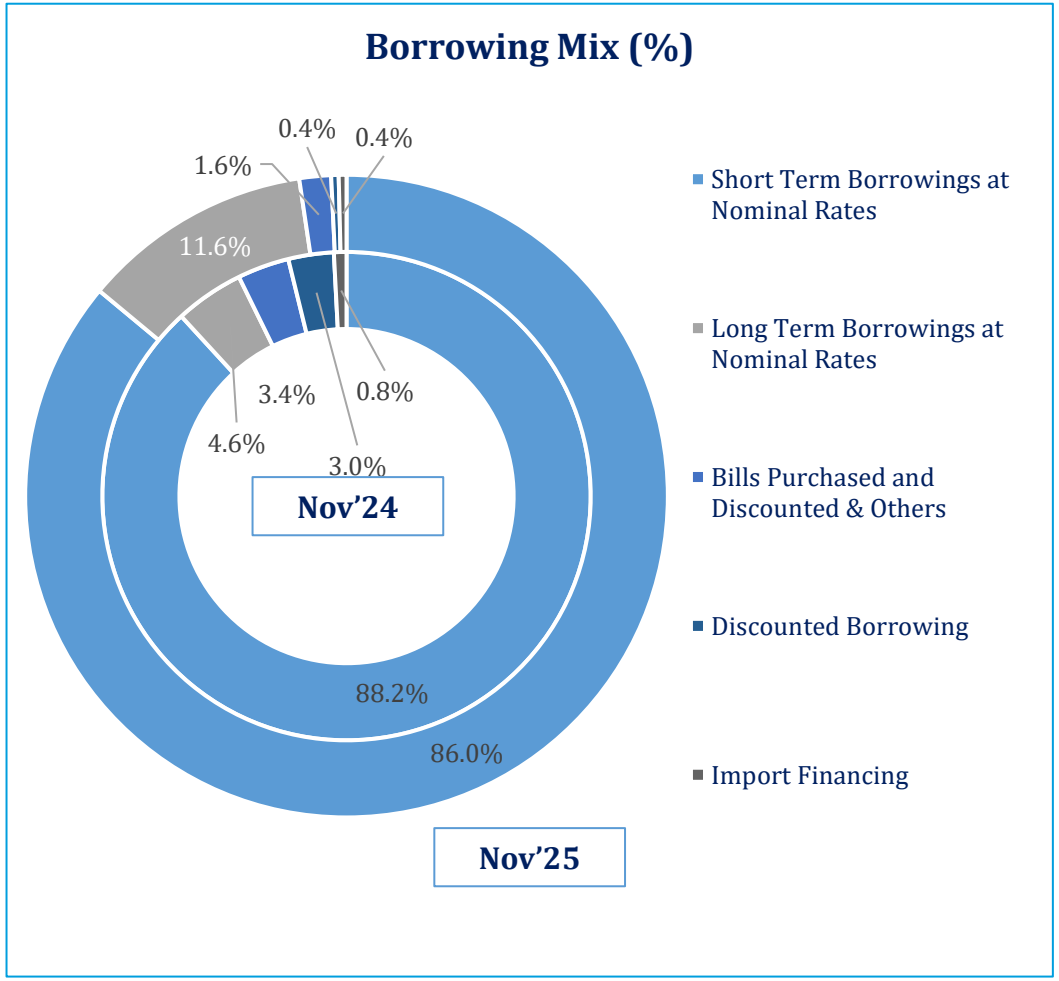
Financial Risk | Borrowing Mix

- As of Nov'25, the Sector's overall borrowings stood at PKR~12.6bln, up ~18.9% YoY.
- Short-term borrowings (STBs) at nominal rates stood at PKR~10.8bln, down by ~12.8% YoY (Nov'24:PKR~12.4bln), and held the largest share of ~86.0% in the Sector's borrowing mix (SPLY: ~88.2%).
- Long-term borrowings (LTBs) at nominal rates stood at PKR~1.4bln as of Nov'25, up ~127% from PKR~0.6bln in Nov'24. LTBs held ~11.6% share in total borrowings in Nov'25 (SPLY: ~4.6%).
- Discounted borrowing (LTFF & EFS) stood at a mere PKR~0.04bln (Nov'24: PKR~0.4bln), down ~90.0% YoY and held a share of ~0.4% in the overall borrowing mix.
- Meanwhile, import financing also stood minimal at PKR~0.2bln (Nov'24: PKR~0.5bln), down ~58.5% YoY and held a ~0.4% share in the total borrowing mix.



Notes: Borrowing Mix pertains SBP's classification of "Manufacture of Batteries and Accumulators"

Source: SBP

Batteries

Regulatory Duty

PCT Code	Description	Custom Duty		Additional Custom Duty		Total	
		FY25	FY26	FY25	FY26	FY25	FY26
2607.0000	Lead Ores and Concentrates	0%	0%	2%	0%	**2%**	**0%**
7801.1000	Unwrought Lead (including refined lead)	0%	0%	2%	0%	**2%**	**0%**
7802.0000	Lead waste and scrap	0%	0%	2%	0%	**2%**	**0%**
7804.1100	Lead plates, sheets, strip, foil, powders and flakes	16%	15%	4%	2%	**20%**	**17%**
7806.0090	Other articles of lead	20%	20%	6%	4%	**26%**	**24%**
8506.5000	Primary Batteries - Lithium	3%	0%	2%	8%	**5%**	**8%**
8507.1010	Batteries/ Electric Accumulators, made from lead-acid, for use in vehicles	35%	35%	7%	11%	**42%**	**46%**
8549.1900	Waste and scrap of cells, batteries and electric accumulators	0%	0%	2%	0%	**2%**	**0%**

Source: FBR

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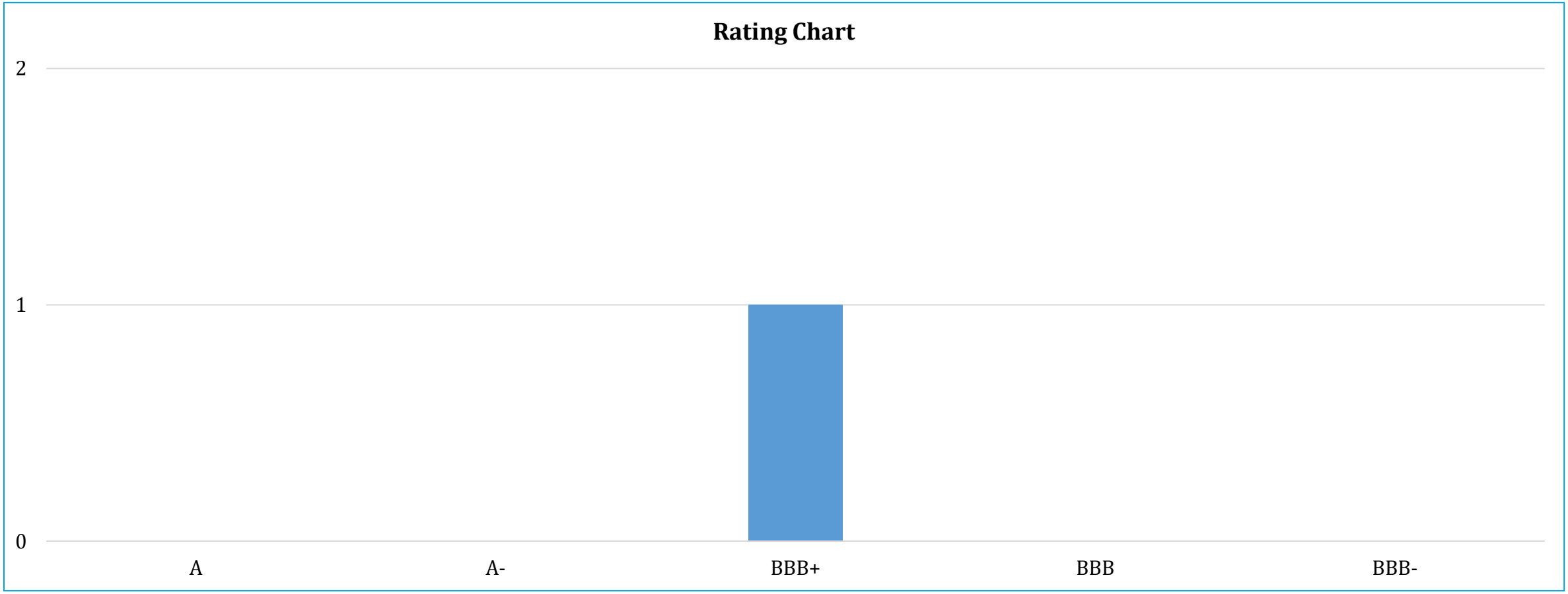
Rating Curve

PACRA rates 1 player in the batteries sector with a long-term rating of BBB+.



Source: PACRA Database

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National Lithium-Ion Battery Manufacturing Policy 2026-2031

- Pakistan is advancing its National Lithium-Ion Battery Manufacturing Policy (2026–2031) to reduce reliance on imported Batteries and promote phased domestic manufacturing with tariff reforms and performance-based incentives.
- A high-level government meeting reviewed progress on the policy, emphasizing integration with national energy security objectives and alignment with private-sector and global investment participation.
- The policy framework has provisionally approved lithium iron phosphate (LFP) Battery technology for initial localization, with plans to develop Battery testing, certification, and recycling capabilities.
- Pakistan is finalizing business-to-business engagements with Chinese firms worth USD ~558mln to support lithium-ion Battery assembly and manufacturing and exploit local mineral reserves to reduce import dependence.
- Localizing Battery manufacturing may mitigate foreign exchange pressure, as Battery imports have been a growing contributor to trade and energy storage import bills. (Import-heavy market context from industry reporting)
- Alignment with national EV policy targets (increased EV penetration by 2030) underscores the strategic importance of domestic Battery supply chains to broader transport and clean energy adoption goals
- Integration with renewable energy expansion (rapid solar growth) enhances the role of storage solutions for grid stability and peak shifting, potentially expanding the addressable market for locally made lithium-ion Batteries

Batteries

SWOT Analysis

- A few large players occupying a significant market share.
- High-quality products with ample surplus capacity available, thus providing room for growth.

- Presence of unorganized segment which provides substitutes at low prices.
- Limited suppliers of lead.
- Volatile raw material prices.

- Significant level of competition and threat of new entrants.
- Reducing sales volume of cars that majorly drive demand for the Sector.
- Non-compliance with environmental laws may cause closure of business.

- Increasing demand for alternative energy sources solar connections which require Batteries.
- Shortfall in power supply which creates demand for UPS that use Batteries.
- MF (maintenance free) Batteries for motor vehicles and motor cycles.

Batteries

Outlook: Negative

- In FY25, Pakistan's nominal GDP clocked in at PKR ~113.7trn (FY24: PKR~105.2trn), growing by ~2.7% YoY in real terms (FY24: ~2.4%).Industrial activities contributed ~18.1% to the GDP, with manufacturing accounting for ~65.3% of the total value addition in the sector. During 1QFY26, GDP growth was recorded at ~3.71%, while the Large-Scale Manufacturing registered a growth of ~5.02% during 4MFY26.
- In 11MCY25, average CPI inflation edged up to ~6.1%, compared to 4.9% a year earlier. In its latest MPC meeting, the SBP announced a 50-basis-point cut in the policy rate to 10.5%, effective December 16, 2025.
- Major demand drivers for Pakistan's Batteries Sector continue to be the automobile industry and its sizeable replacement market, along with sustained demand for backup power solutions due to ongoing grid reliability issues and load management challenges. The rapid expansion of rooftop and commercial solar installations supported by net-metering, declining solar panel prices and favorable payback economics has further strengthened demand for energy storage systems. In parallel, the gradual rollout of locally assembled electric vehicles (EVs), hybrid electric vehicles (HEVs), and electric two- and three-wheelers under Pakistan's EV Policy is driving incremental demand for advanced, low-maintenance lithium-ion Batteries.
- Additionally, initiatives by domestic manufacturers to establish lithium Battery assembly and Battery-pack manufacturing lines are beginning to partially substitute imports, improve supply-chain resilience and enhance price competitiveness, supporting wider adoption of lithium-based energy storage solutions across automotive and stationary applications. The GoP is actively advancing a "National Lithium-Ion Battery Manufacturing Policy 2026–31" to localize production, attract investment and reduce dependency on imports, including USD ~558mln engagements with Chinese firms and a phased domestic supply plan to add value and strengthen Pakistan's industrial base.
- Production of storage Batteries peaked in FY22 at ~166,000 units before moderating in FY23–FY24 and declining more sharply in FY25, reflecting subdued automotive output and inventory adjustments in the Batteries Sector.
- The Sector outlook is Negative due to sharp margin compression, with gross margins falling to ~11.9% and operating margins to ~4.4% in 6MFY26 amid weaker pricing power, a shift from heavy to lower-margin medium Batteries, and rising operating costs. This has been compounded by weaker sales volumes, a ~32.8% YoY decline in Battery production, surging imports, and high exposure to imported raw materials and energy costs, which continue to weaken sector profitability and financial resilience.
- Going forward, the Sector's recovery is expected to remain gradual and uneven, as demand continues to shift toward imported lithium-ion Batteries and domestic manufacturers face limited pricing power and high input cost exposure. While vehicle activity and energy-storage demand remain supportive, the transition toward lithium-based technologies and the development of local manufacturing capabilities are likely to take time, leaving domestic Battery producers exposed to near-term margin pressure, rising competitive intensity, and continued pressure on volumes and profitability.

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