

# Ivent Solutions Market Trend Update

## November 2019

### Who Said Lead Acid Batteries Weren't Cool Anymore?

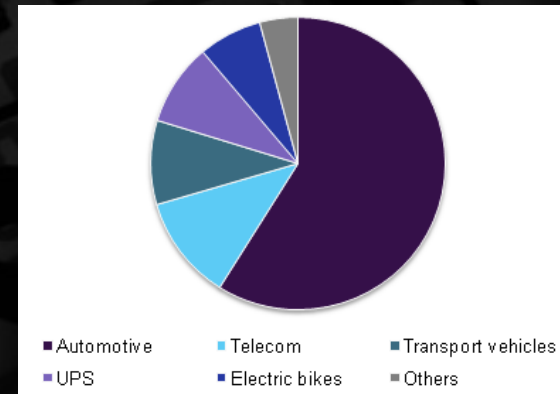
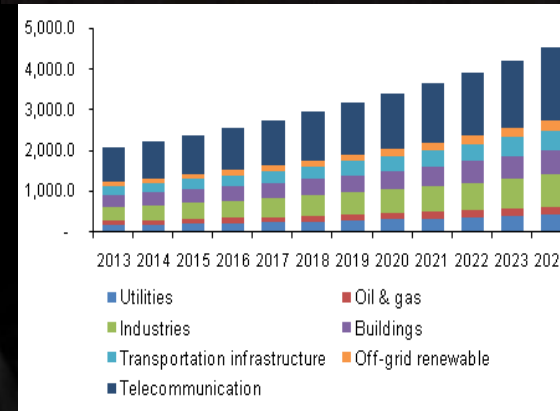
The global lead acid battery market is projected to reach USD 52.5 billion by 2024 from an estimated USD 41.6 billion in 2019. This growth can be attributed to factors such as the rapid expansion of data center (cloud) infrastructure and the increase in the 2022 renewable energy generation targets, leading to a growing requirement of integration of energy into the main grid.

The lead acid battery market, by technology, is segmented into basic and advanced lead acid batteries. The basic lead acid battery segment is estimated to hold the largest market share in 2019, and the advanced lead acid battery segment is projected to grow at the highest rate during the forecast period. The cost-effective nature of the basic lead acid batteries drives the market share of this battery type.

The Valve Regulated Lead Acid (VRLA) segment is expected to be the largest market during the forecast period. The VRLA batteries comprise absorbent glass mat (AGM) and gel cells. These are new technology-driven construction methods, including the presence of adsorbent glass material and silica gel, respectively. These methods ensure the longevity of the batteries and require less maintenance compared to regular lead acid batteries. In the future, these batteries are likely to be preferred over conventional flooded lead acid batteries due to these various advantages.

The “advanced” lead acid battery is expected to be the fastest-growing segment of the lead acid battery market, by technology, during the forecast period. The advanced lead acid battery has carbon coatings on the anode plate, which eliminates the requirement of cleaning the lead sulfate deposition on the electroplate. At the same time, the life of the anode electrode is enhanced, increasing the overall life of the battery. It provides benefits such as rapid charging on regenerative braking. This is a significant advantage of advanced lead acid batteries, as this task is difficult to achieve with regular lead acid batteries. Although comparatively heavier and larger than lithium-ion, these batteries are cost-effective and are also efficient when operating at low and sub-freezing temperatures.

Asia Pacific is estimated to be the largest growing lead acid battery market during the forecast period. The region has been segmented, by country, primarily into China, India, Japan, South Korea, and SEA/Oceania. The growth of this region is driven mainly by countries such as China and India, which are focusing on increasing their renewable generation capacity. With the increase in the renewable generation, the requirement of integration of renewable generation will significantly increase. Moreover, these regions contain developing countries. These countries prefer cost-effective solutions for battery storage and, therefore, lead acid batteries are preferred. North America is projected to be the second-largest region with countries such as the US, Canada, and Mexico investing in lead acid battery solutions. These batteries are used primarily in the industrial, commercial, and residential sector of these countries. The transportation sector is another sector where these batteries are used extensively.



#### Important Dates:

- *Ivent Christmas Closure – 20<sup>th</sup> December till 6<sup>th</sup> January*
- *Chinese New Year – January 25<sup>th</sup> till 8<sup>th</sup> February*



# GLOBAL LEAD ACID BATTERY MARKET FORECAST 2019-2027

## MARKET BY REGION



## MAJOR MARKET PLAYERS

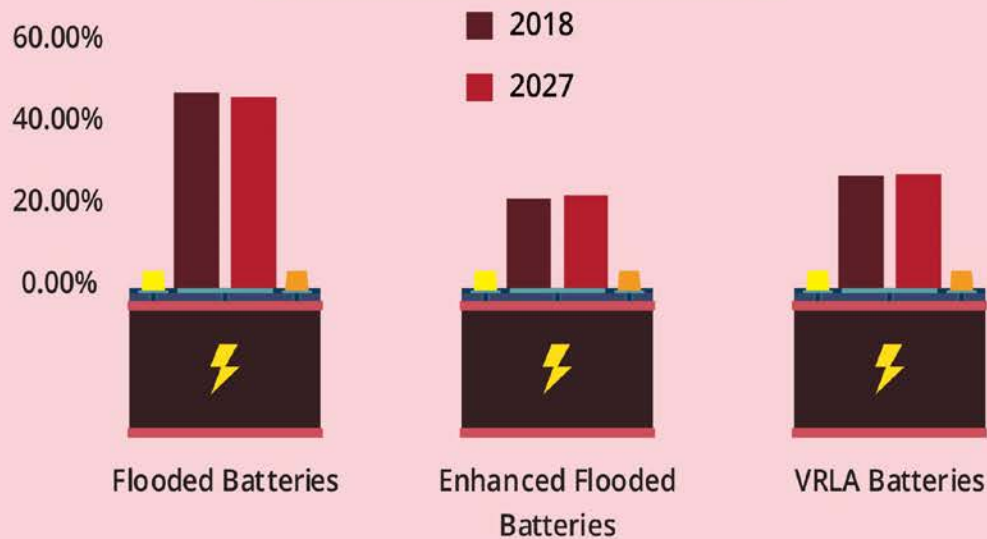
CROWN BATTERY

NORTH STAR LTD.

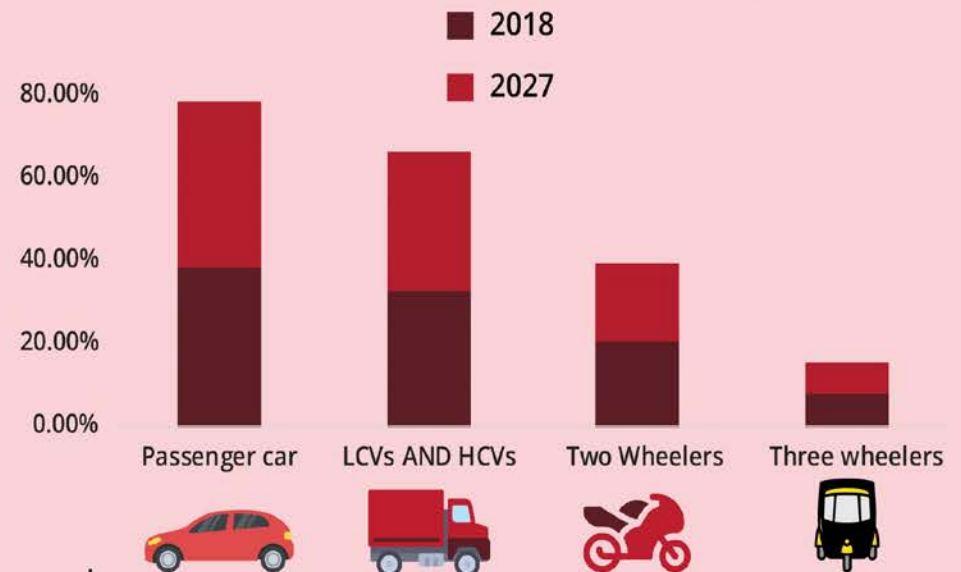
JOHNSON CONTROLS, INC.

EXIDE TECHNOLOGIES INC.

## MARKET BY TYPE



## MARKET BY END USERS



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NZD versus AUD - AU\$0.925 vs NZ\$1.00



NZD versus USD - US\$0.635 vs NZ\$1.00



NZD versus EUR - EU\$0.575 vs. NZ\$1.00



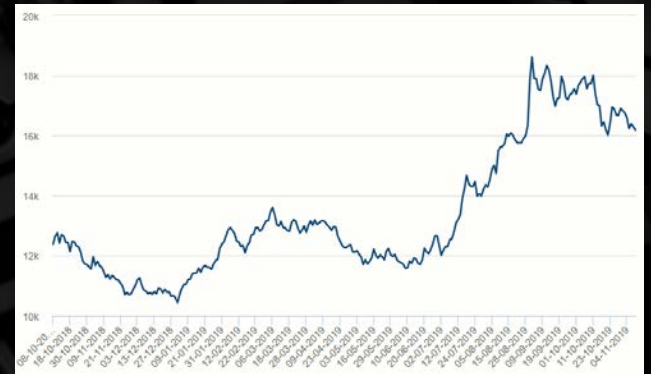
Copper - USD5950 / tonne



Lead - USD2100 / tonne



Nickel - USD16300 / tonne



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