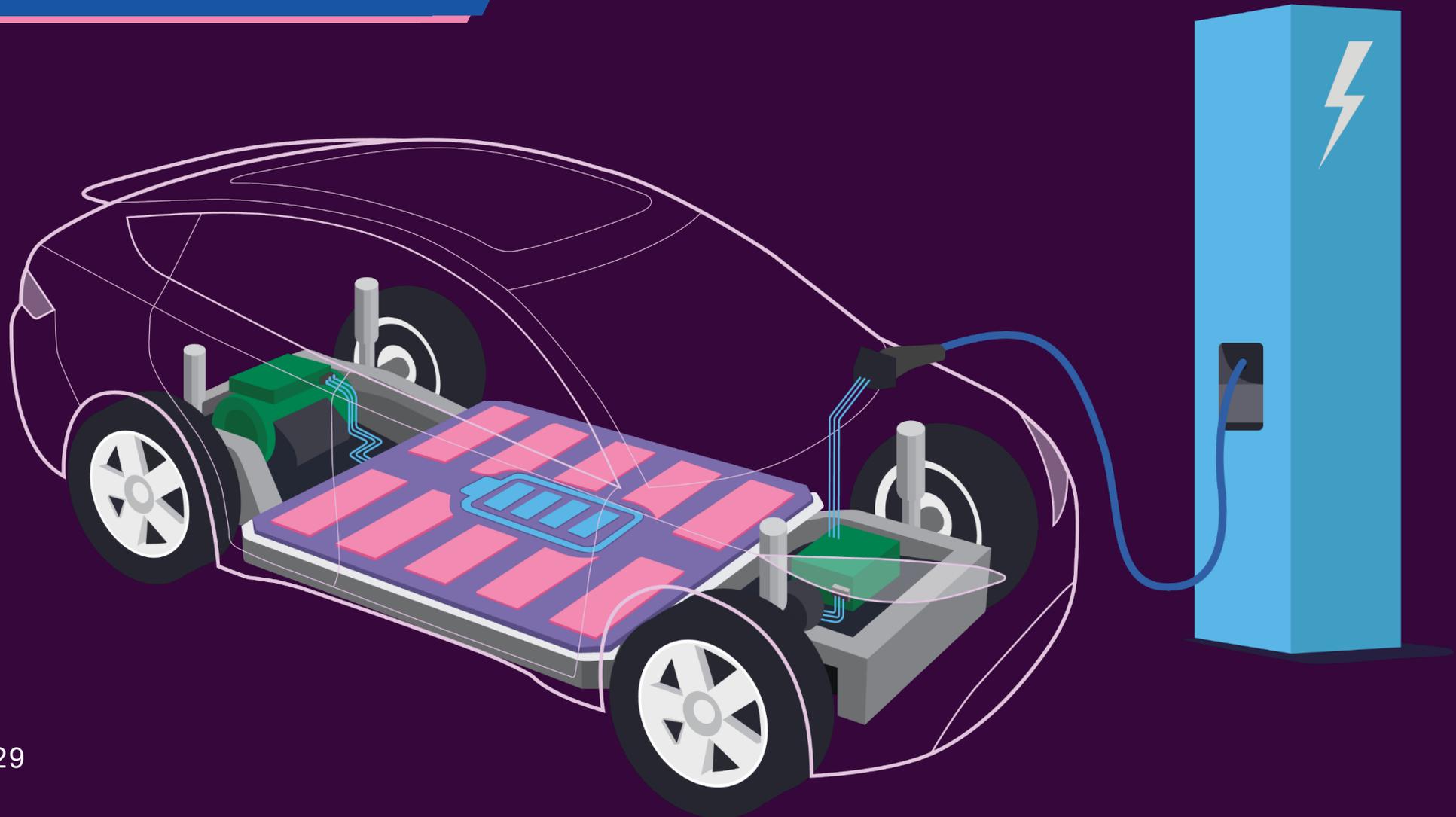


# How future battery tech will define the future of mobility

INDUSTRY INSIGHT: FUTURE MOBILITY

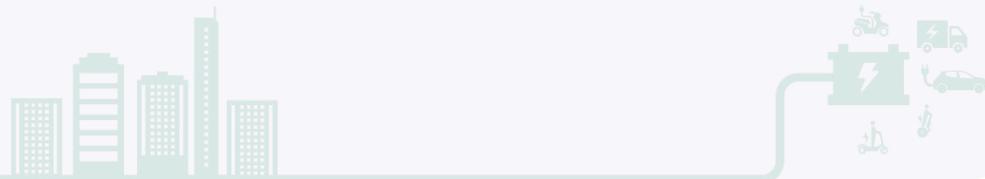


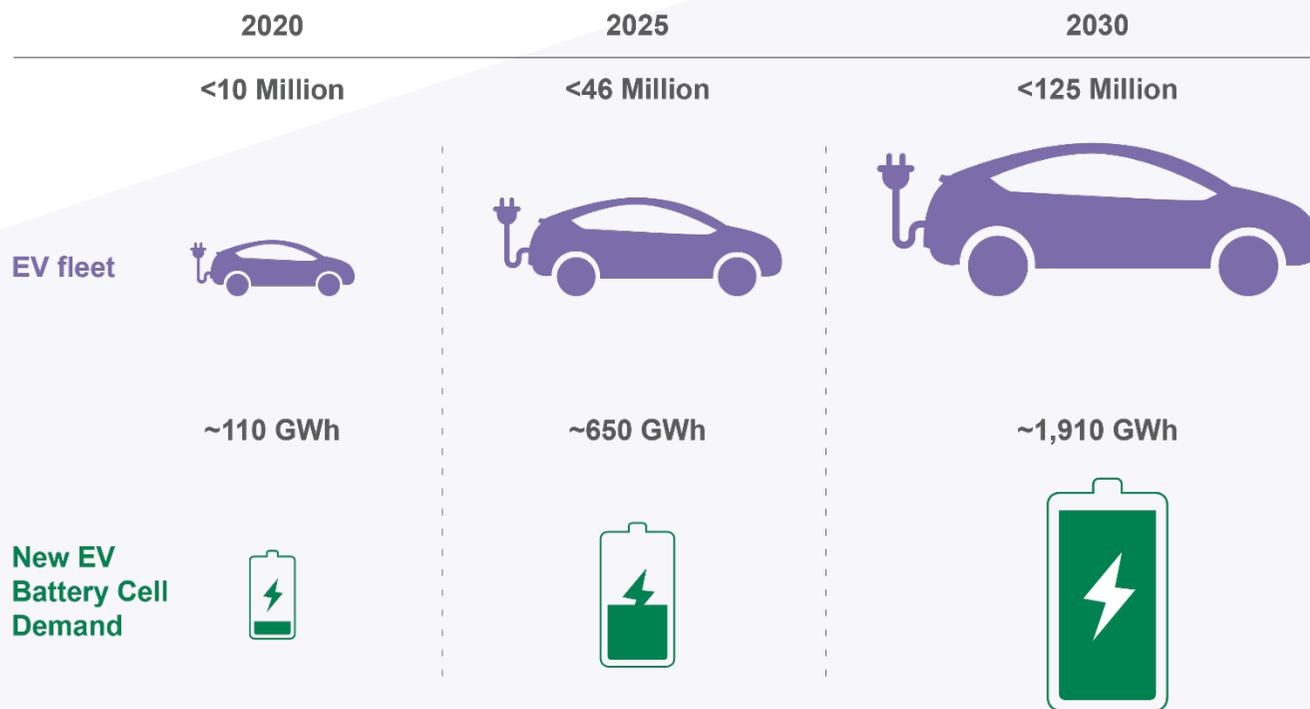


Electric vehicles (EVs) are the future of the automotive sector, and not a distant one. EVs, in their various forms, from plug-in hybrids (PHEVs) to battery electrics (BEVs) as well as the upcoming hydrogen fuel cell EVs (FCEVs), are racing towards ubiquity carried along by the fervour for the net-zero carbon emissions by 2050 mission. With battery packs at the heart of each of these EVs, the demand for batteries is growing too, and will not abate for at least the coming decade. In fact, with the rapid uptake of renewable energy sources to aid global decarbonisation, the scope for energy storage extends beyond mobility. Hence, its projected growth is even greater than that of EVs. Currently, the energy storage of choice for EV makers is the lithium-ion (Li-ion) battery pack. However, Li-ion batteries in their current form are not seen as a final solution, as there is much room for improvement in terms of **energy density, temperature range, recharging cycles and life, technology and infrastructure, material supply stability, costs, lifecycle management, and recycling** among others. With this in mind, we look at the vast potential of opportunities within optimisation of present battery tech as well as the nascent technologies and chemistries still under development.



## Introduction





### Global EV and Li-ion battery market, 2020-2030 (GWh)

Global EV stock has grown from just around 17,000 units in 2010 to more than 10 million units in 2020. What's more surprising was the 2020 figure represented a 43% growth from 2019, in the year of the worldwide pandemic, when overall car sales dropped around 16%.

Source: Evalueserve Insights

And the global fleet is only projected to get higher, estimated to reach around 125 million EVs by 2030. This indicates that the EV consumer profile is moving from early adopters of new technology and technophiles, towards mass adoption. In line with this, the **battery market is set for a bumper decade of demand**, estimated to go from around 110 gigawatt-hours (GWh) in 2020 to 1,910 GWh in 2030, even with efficiency of potential future energy solutions factored in.



**Demand Outlook:** Global battery demand is expected to grow by 25% annually to cross 2,600 GWh in 2030, states a joint report by TÜV SÜD and Siemens. The main demand drivers will be electrification of transportation and deployment of batteries for energy storage.



**Passenger cars** will account for the largest share (60%) of global battery demand, followed by the commercial vehicle segment with 23%, estimates Waygate Technology, a Baker Hughes Company.



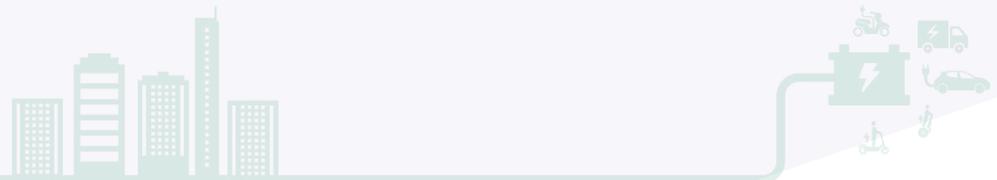
**China** will continue to dominate the battery market demand to adhere to ever-tightening regulatory emission requirement.



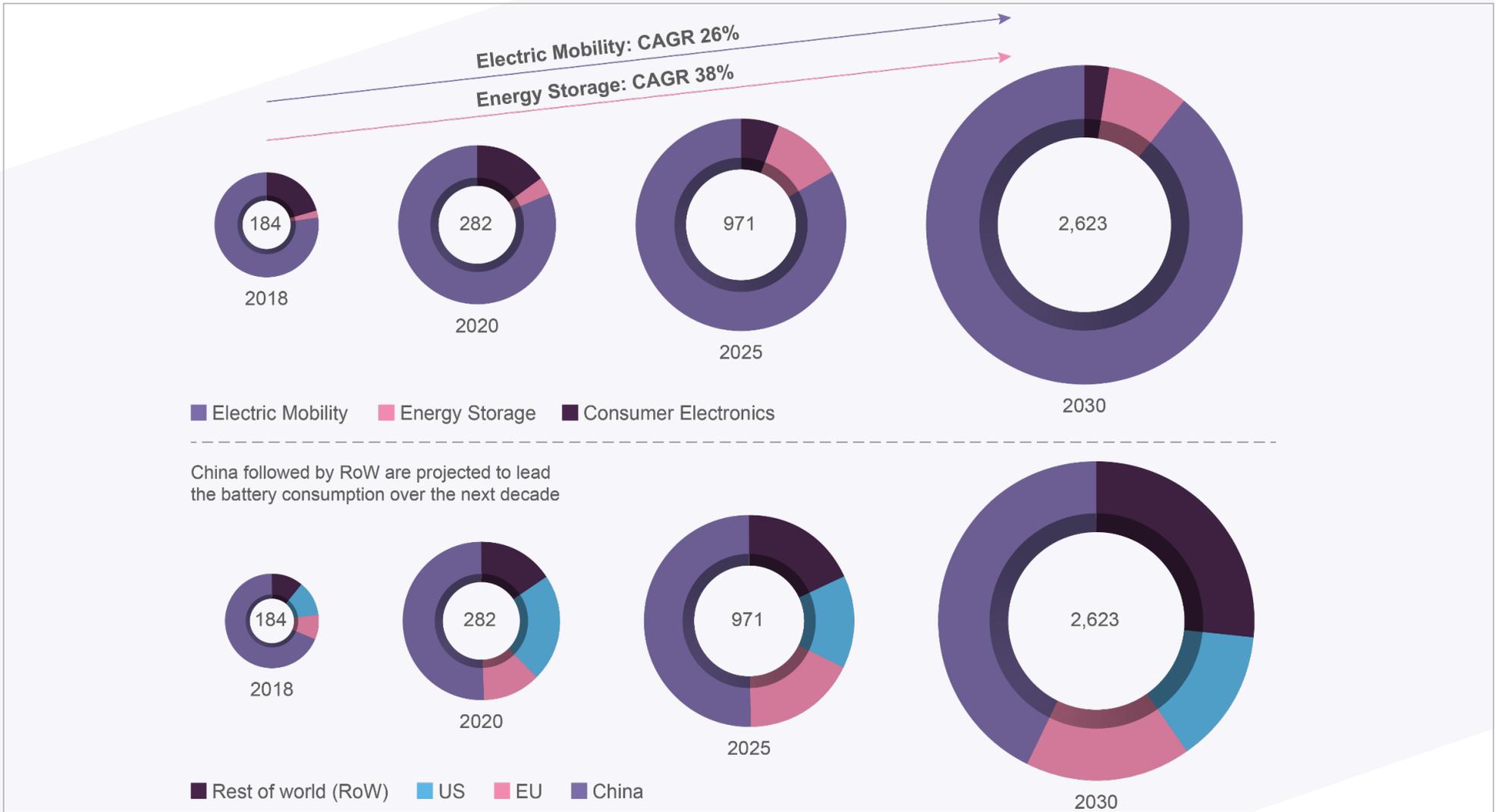
**Overall**, the Li-ion battery market has the potential to grow to \$116 billion per year by 2030 from \$41 billion in 2021, states a MarketsandMarkets report.



## Battery Market Outlook



## Global Battery industry Growth by Industry and Region by 2030 (GWh)



Source: Evalueserve Insights