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Challenges in next generation batteries for accelerating decarbonization

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Batteries are a key-technology for accelerating decarbonization. The benefits of the development of advanced batteries are enormous: broader energy access, specifically for off-grid communities, the transport electrification that reduce the dependency from fossil fuels and the harmful local emission of nanoparticulates, better utilization of intermittent energy sources 1. Europe has decided to invest significantly in numerous projects and initiatives: the European Commission (EC) launched the European Battery Alliance in October 2017 to build a competitive manufacturing value chain in Europe for the creation of sustainable and fully recyclable cells and batteries [2, 3]. The EC funded the long-term research initiative Battery2030+ [4], thus guaranteeing accelerated support for research and innovation of advanced lithium-ion batteries and disruptive technologies such as Li metal solid state batteries, and the technologic platform Batteries Europe, which will coordinate the efforts and the resources of private and public partners to implement the research activities.
While Li-ion batteries will continue to play a major role in the energy storage, new and disruptive ideas are needed for the creation of sustainable batteries which pave the way to European competitiveness during the transition to a climate-neutral society.

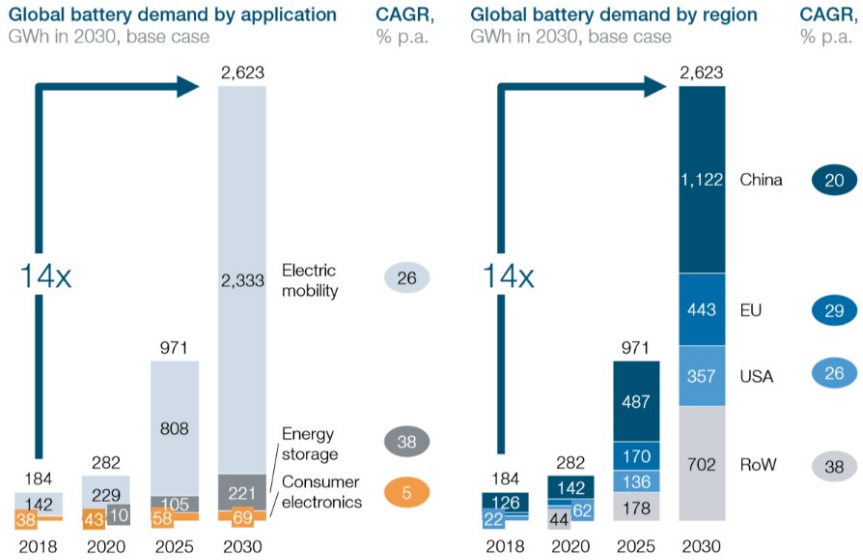

Figure 1: Expected growth in global battery demand by application (left) and region (right) [4]

References:
1 https://www.weforum.org/reports/a-vision-for-a-sustainable-battery-value-chain-in-2030
[2] https://ec.europa.eu/growth/industry/strategy/industrial-alliances/european-battery-alliance_en
[3] https://www.eba250.com/
[4] https://battery2030.eu/battery2030/about-us/challenges/

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