EV BATTERIES: POWERING THE AUTOMOTIVE REVOLUTION

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The global market for EV batteries is growing at a breath-taking pace as the automotive industry rapidly electrifies to meet accelerating decarbonisation and emissions targets.

Within this, European production capacity is currently tiny (3% of global lithium-ion battery supply versus a 19% share of global demand) and, whilst not all of the batteries need to be manufactured in Europe/the UK, a combination of the geo-political, economic and sustainability driven-desires to near-shore this industry means that it is anticipated that the European EV battery market will grow by over 20% per annum until 2030, requiring very significant levels of capital investment.

This rapid expansion of a nascent industry requires the stitching together of a number of manufacturing and industrials sector and projects skill-sets: land acquisition and use permits; planning consents and construction; debt, equity and project finance; national and regional government grants and subsidies; R&D and licensing of key intellectual property rights; recruiting, training and retaining a skilled workforce; and building a resilient, efficient and competitive supply chain and distribution channels, and that is before you even start to think about the vital, second-life reuse and recycling phase.

The sheer scale and speed of the above task would, on its own, be a sufficient challenge for most businesses, but it is far from the full picture and, in many respects, is the easier part of the challenge because it is, to a degree, more predictable.

The other part of the picture is more uncertain: per unit costs of batteries will have to reduce materially in order to enable BEVs (particularly smaller BEVs) to penetrate the mass market, but the automotive industry is at the same time demanding that the batteries have a higher energy density (delivering both increased range and longevity), are capable of being recharged faster (requiring higher power density) and yet are safer (particularly as regards the risk of fire), lighter and smaller (or at least more flexible in how they can be integrated within the vehicle).

Critically, this all needs to be implemented within the same decarbonisation programme which is driving the transition to EVs in the first place and therefore the increased demand for (often scarce) natural resources and the broader ESG footprint of the batteries themselves is also coming into ever-sharper focus.

The infographic looks at the stages of the battery lifecycle and some of the specific industry drivers and issues that will shape the direction of the industry (particularly in Europe), including the presence of EU and governmental incentives and other funding and support; the increasing ESG and regulatory pressures, principally through the proposed new EU Batteries Directive; as well as other laws that will continue to be important in defining the playing field for the industry, such as product liability and safety, competition, trade and State Aid, employment and intellectual property.

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KEY CONTACTS

If you have any questions, or would like to know how this might affect your business, phone, or email these key contacts.

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