
Media information

Background: Volkswagen Group's battery strategy

The Group's battery strategy is a key component of the electrification offensive

The Volkswagen Group continues to drive the paradigm shift in individual mobility and is gearing its activities systematically to the electric drive. It will launch almost 70 new electric models on the market in the next ten years. The projected number of vehicles on the Group's e-platforms is around 22 million.

That means that the Volkswagen Group's demand for batteries in Europe and Asia alone will increase to more than 300 GWh a year. Current cell capacities are not sufficient to cover the market's future needs. At the moment, battery factories for car makers are mainly only on paper, their shell has been finished or they are being ramped up. Since the number of electric vehicles is still modest at present, the battery volumes were imported from Asia in the past. First battery factories are now starting up in Europe so as to supply the volume of vehicles in the coming years. Yet when the Group's e-offensive alone picks up speed, regional production of batteries will also make sense from a competition standpoint. Consequently, the Group's battery strategy is a key component of its electrification strategy.

Supervisory Board approves investments of just under one billion in a battery factory

As part of its e-offensive, the Volkswagen Group will press ahead with establishing battery cell production under a partnership in Europe. The Supervisory Board approved investments of just under one billion euros for that at its meeting today. The plan envisages that battery cell production will be located in Lower Saxony, provided the general economic conditions for that exist. They include exemption from the Renewable Energy Act levy and availability of electricity from renewable sources. A final decision on the plans and the concrete investments is expected to be taken by the end of the year.

Volkswagen is pursuing a multi-stage approach in building battery expertise

- In the first stage, strategic partnerships with the established cell suppliers are a crucial basis for supplying batteries for vehicles as part of the electrification offensive. They are long-term partnerships that lastingly secure a large part of the batteries that are needed and deliver the

requisite technological leaps. SKI, LG Chem and CATL have been defined as the main suppliers for the first wave of electromobility.

- An additional objective is to build substantial know-how in research into and development and production of lithium-ion batteries. The Group has pooled responsibility for development, procurement and quality assurance activities for all battery cells for the Group at the Center of Excellence (CoE) in Salzgitter. The Group will start pilot production from the second half of 2019 on.
- Since investing in cell production is highly capital-intensive, what are termed gigafactories will be established with partners in the next stage; the focus of that will also be on potential locations in Germany.
- In the subsequent phase, the Group plans to establish cell production facilities for lithium-ion batteries and solid-state batteries – both in Europe. The partnership with the U.S. company QuantumScape is an integral part of the Group's battery strategy, in particular with regard to cell production for solid-state batteries.

The battery will account for a significant part of an electric vehicle's value.

That is why the Group is working intensively to make the battery and battery cell a further core competence of Volkswagen in the future – throughout the process chain, from development, production to disposal and recycling.

One thing is clear: Volkswagen aims to become the technology and cost leader in this field. Because we not only want to offer our customers the best electric vehicles, but also do so at competitive prices.

Safeguarding supplies of raw materials is a success factor

One key success factor is safeguarding supplies of raw materials. The Group is well positioned in this regard. As things currently stand, Volkswagen is confident that it will have sufficient quantities of all the raw materials required to ensure ramp-up of the e-fleet.

The Group recently signed a Memorandum of Understanding with Ganfeng on a 10-year agreement relating to Lithium, the main component of a battery. This agreement alone will secure a major part of our lithium needs. Further negotiations with other providers are ongoing.

In the meantime, the Group is working systematically to reduce the share of cobalt in batteries – which would also successively reduce the volume of this raw material that would need to be procured. That share is to be cut from the current level of 12 to 14 percent (weight proportion in the cathode) to five percent in the next three to five years. Volkswagen is working to develop cobalt-free battery cells.

Building know-how with strong partners – the European Battery Union

The Volkswagen Group has teamed up with other European partners to form the “European Battery Union” (EBU), the aim of which is to drive battery research throughout Europe. Under the

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leadership of the Volkswagen Group and the Swedish battery manufacturer Northvolt, the joint research activities will focus on the battery's entire value chain – from raw materials to cell technology to recycling. The prime objective is to build far more comprehensive expertise to underpin industrialization of battery cell production. The joint research activities are to start at the beginning of 2020.

Decision on the location dependent on competitive general conditions

The plan envisages that battery cell production will be located in Germany (Lower Saxony), provided the general economic conditions for that exist. Key criteria in choosing the location are competitive fiscal framework conditions and – due to the large amount of electricity needed to produce cells – attractive energy prices. And last but not least: the speed of approval processes, since establishing a cell factory takes at least three years.

There are a number of levers that might be used to enhance the attractiveness of potential German locations. Exemption from the Renewable Energy Act levy, as well as support in being granted investment aid and for infrastructure measures, would be conceivable for example, as would measures such as granting of special depreciation allowances or tax breaks and, last but not least, government funding for training and retraining in the region in question.



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