

## 【欧州】【自動車】

Environmental friendly vehicles: European efforts to establish battery cell production industry for EVs: The third political meeting under the European Battery Alliance and joint French–German agreement on investment into battery production consortium

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### 【概要 : Summary】

The European Commission has presented an agenda for a transition to clean, competitive, and connected mobility in Europe. As batteries are at the heart of the electric mobility uptake, the battery development and production for EVs is considered to play an important strategic role in the future development of the European automobile industry. Batteries are at the heart of the on-going electric mobility uptake and the technology change from combustion engine to electric propulsion. However, so far, the European automobile manufacturers only assemble battery packs for electric cars and before the launch of the European Battery Alliance (EBA), there was no industrial initiative visible for creating a battery industry in the EU. The European Commission considers the establishment of a battery industry in the EU as an essential pre-condition to deliver on the EU's ambition to maintain its leadership in the automobile and clean mobility sectors. The European automobile manufacturers are currently facing the challenges to adapt to stricter emissions rules beyond 2020 and, at the same time, they are lagging seriously behind other manufacturers in the world market of EVs production. Consequently, the lack of a European battery cell manufacturing industry puts the EU at a competitive disadvantage, which adds to the competition problems the European automobile manufacturers are facing in the production of EVs for the world market. Therefore, the aim is now to achieve the transition

towards more sustainable propulsion systems, to replace the traditional combustion engines in vehicles and to set up a European battery mass production. In October 2017, the European Commission launched the European Battery Alliance, in order to establish a battery producing industry of significant size. In the first year after the launch, pilot production facilities are being built and further projects are announced to establish the strategic basis of battery innovation and manufacturing.

The third political meeting for the EBA discussed the sustainable processing of raw materials and the production of batteries. The meeting aimed at bringing together the significant support of the Commission, the European Investment Bank (EIB) and invited Member States to cross-border manufacturing projects along the battery value chain. The meeting was also the opportunity to explain the joint achievements of the Member States and the EIB. The European Commissioner for competition Margrethe Vestager also underlined that there are special State aid rules in place for Important Projects of Common European Interest to facilitate cooperation between EU Member States and companies.

### 【記事 : Article】

#### 1. The EU's dependence on battery imports for EVs

In the EU, currently around 95% of automobiles are still using fossil fuels. However, in order to meet

the EU's commitments of the 2015 Paris agreement, the de-carbonisation of the transport sector must be accelerated. The deployment of low- and zero-emission vehicles will have to increase substantially in order to meet the new passenger cars and vans' CO<sub>2</sub> emission standards in the post-2020 period. Based on the new legislation, which is expected to receive its final adoption by the Council soon, in 2030, CO<sub>2</sub> emissions from new passenger cars will have to be 37.5% lower and CO<sub>2</sub> emissions from new vans 31% lower, compared to 2021. The new legislation also includes a mechanism for zero- and low-emission vehicles. Therefore, electric vehicles (EVs) can play an important role in Europe's future mobility.

As batteries are key to the electric mobility uptake, the main question is how automobile manufacturers in Europe can achieve the technology transition from combustion engine to electric propulsion if there is no significant battery development and production established in the EU. Although European automobile manufacturers assemble battery packs for EVs, there does not exist a battery production industry of significant size in Europe. The global main battery producing industry for building the latest lithium-ion cells and batteries for automobiles is located in the US, China and Japan. Asia alone currently accounts for about 65% of global battery cell manufacturing. According to Carole Mathieu ("The European Battery Alliance Is Moving up a Gear", *Édito Énergie*, Ifri, 2 May 2019), the battery production segment is currently dominated by East-Asian competitors, including Panasonic (Japan) and LG Chem (South Korea), closely followed by Samsung SDI (South Korea), CATL (China) and SK Innovation (South Korea). Instead, there are no factories in place for building the latest lithium-ion cells and batteries for EVs in the EU. However, since a continuous dependence on battery imports would create long-term competition disadvantages and dependences for European automobile manufacturers, the establishment of a strong battery cell production industry in Europe is considered being an essential building block for the mass-market development of EVs.

## 2. The establishment of the European Battery Alliance (EBA)

Currently, the battery production in Europe is mainly targeting high-end niche markets but not the automotive sector, where the main volume of demand can be expected in the next decades. Therefore, the EU and its automobile industry are lagging behind, as it represents less than 3% of the global lithium-ion cell manufacturing capacities. In order to achieve the electric mobility and at the same time to prevent a technological dependence on competitors outside Europe, it is estimated that Europe will need at least 10 to 20 large-scale battery cell production facilities ("gigafactories"). In order to overcome this competitive disadvantage of battery imports and to set up a European large-scale battery production, an industry alliance of European automobile manufacturers, engineering firms and producers is needed.

On 11 October 2017, the European Commission Vice-President for Energy Union, Maroš Šefčovič met with industry representatives and other stakeholders to discuss the possibility to set up a partnership for developing and establishing a European battery production. The European Battery Alliance (EBA) was launched as a cooperative platform that gathers the European Commission, interested EU Member States, the European Investment Bank and industrial and innovation stakeholders. The establishment of the EBA was followed by the presentation of the Strategic Action Plan for Batteries on 17 May 2018 (COM (2018) 293 final) as part of the Europe on the Move III package. The strategic Action Plan for Batteries comprises of a set of measures that cover the whole value chain, starting with the extraction and processing of raw materials, the design and manufacturing phase of battery cells and battery packs, and their use, second use, recycling and disposal in a circular economy context, as well as regulatory requirements. As part of the action plan on batteries, the Commission announced the formation of interregional partnerships, under a smart specialisation platform for industrial modernisation

on 8 October 2018.

The European Commission mandated a public-private partnership supported by the European Institute of Innovation and Technology, InnoEnergy, to identify the main obstacles to investment projects and scaling up strategies. On 15 October 2018, the EU Member States, the European Commission and company representatives met to discuss the results after one year on from the launch of the European Battery Alliance (EBA). According to the European Commission Vice-President for Energy Union Maroš Šefčovič, one year after the launch of the European Battery Alliance the various pieces of collaborative work with the European Investment Bank, several governments and the industry are now leading towards the building up of a whole competitive value chain in Europe. On 5 February 2019, the Director General for Energy for the European Commission, Dominique Ristori, launched the European Technology and Innovation Platform on Batteries, Batteries Europe, in order to drive research and innovation, knowledge transfer and competitiveness across the European battery value chain.

### 3. Third political meeting for the EBA

Meanwhile, on 30 April 2019, the European Commission Vice President for Energy Union Maroš Šefčovič hosted the third political meeting at ministerial level under the European Battery Alliance. The objective was to discuss in particular the strategic issues including the sustainable production of batteries and the sustainable processing of raw materials, the use of financial instruments, State aid and Important Projects of Common Interest (PCIs). Furthermore, the aim was to bring together the significant support of the Commission, the EIB and invited Member States to cross-border manufacturing projects. Šefčovič called for mobilizing the EU's political forces behind innovative and competitive industrial projects and positively pointed out the contribution of Sweden, Poland, Germany and Belgium, among others regarding the EBA.

The meeting was also an opportunity to explain the

joint achievements of the Member States and the European Investment Bank. According to Šefčovič, the most visible achievement is the lead taken by the European industry across the battery value chain. Šefčovič pointed out that already EUR 100 billion were announced and are invested in flagship projects covering the entire supply chain since the launch of the European Battery Alliance in October 2017. Nevertheless, further projects will be necessary to support the development of the supply chain. Šefčovič stated the participating countries agreed to accelerate work in providing support for a transnational strategic project across the supply chain of batteries.

Cross-border, large-scale integrated consortia are being established in several EU Member States across all segments of the value chain for battery production in Europe. In Sweden, France, Germany, Italy, the Czech Republic, battery cells production related consortia are established, while raw materials are supported by consortia in Sweden, Finland and Portugal. The chemicals part for battery production is supported in cooperation between Belgium and Poland as well as between Germany and Finland. The automobile manufacturers in Germany, France, Spain and Slovakia are working on the battery pack, software, machine tools and engineering, whereas recycling is a focus in Belgium and Germany. More EU Member States are now showing their interest to join the IPCEI (the important projects of common European interest).

By June 2019, it is expected that the EIT InnoEnergy together with the EIB will set up an Investment Platform for EU-based projects.

The European Commissioner in charge of competition Margrethe Vestager also attended the third political meeting of the EBA. Vestager stated that the EU's State aid rules support innovation and sustainability and special State aid rules are in place for the Important Projects of Common European Interest (IPCEI), including battery production, to facilitate cooperation between EU Member States and companies.

#### 4. The French-German cooperation on battery production

In the past years, the strategic autonomy of European battery production was not the target or determining factor in the European automobile manufacturers' supply strategy. European automobile manufacturers are still at the beginning of a transition from combustion engine vehicles to EVs or other zero and low emission vehicles. Only recently, the German automobile manufacturers have engaged in a fundamental change of their strategy after they have been rejecting to invest into a serious development of electric cars for years. Under the impact of the Diesel Scandal in 2015, the focus finally shifted from the development of diesel engines towards the development of EV models also in the German automobile industry. However, the European automobile manufacturers are facing the impact of an increasing dependence on Asian EV battery suppliers. So far, the automobile industry's target was to control the design and the quality of cells, while minimising transport costs. The result of this strategy was the planning and establishment of several factories in Germany (CATL), Poland (LG Chem) and Hungary (Samsung SDI, SK Innovation). However, now there are increasing concerns that Europe is falling behind in EV development because of its failure to make its own innovations in battery technology. Furthermore, there already exists the risk of shortages in the battery cell production as more automobile manufacturers start to concentrate on EV model production. In the light of possible future shortages in the battery cell production, also European automobile manufacturers are considering their options and see the increasing necessity to strengthening their competence on battery cells. They are also preparing for a more direct involvement in battery cell production in order to widen their options for the further increase of EV production. The lack of an existing battery industry in the EU is adding to the competition problems the European automobile manufacturers are facing in the production of EVs for the world market.

Therefore, the support for the establishment of a European battery cells industry also includes the provision of public finance and the European Commission has encouraged national governments to increase their investment. On 9 November 2018, also the German government announced to have earmarked EUR 1 billion to support a consortium for producing electric car battery cells and plans to fund a research facility to develop next-generation solid-state batteries. It aims to have 30% of such production coming from Germany and Europe by 2030. Thereby Germany wants to reduce the dependence of its own automobile manufacturers on Asian electric vehicle (EV) battery suppliers. Also France committed to support the battery value chain with a EUR 700 million action plan. At this stage, Belgium, France, Germany and Italy have launched calls for interest to identify possible consortia under this framework of "Important Projects of Common European Interest". Furthermore, France and Germany have now sent a letter of intent to the European Commission to obtain the Commission's approval for their state subsidies for a cross-border battery cell consortium including the French automobile manufacturer PSA, its German subsidiary Opel and the French battery maker Saft, among others, for their financial support to a project to convert an Opel factory in the German city of Kaiserslautern close to the French border into a battery cell production site.

On 29 April 2019, the French and German governments announced to have earmarked EUR 1.7 billion to support the company alliances to help reduce European carmakers' dependence on external battery suppliers. France and Germany have asked the European Commission to approve the state subsidies for the companies' cross-border battery cell consortium.

On 2 May 2019, German Economy Minister Peter Altmaier and the French Minister of the Economy and Finance Bruno Le Maire met in Paris to discuss the project with the aim to make progress on initiating further battery alliances. They agreed to jointly invest in the European production of batteries for EVs by establishing two production plants over the next four

years with around 1,500 employees in each and a total investment of EUR 5–6 billion. At least EUR 4 billion would come from 35 private companies including major automobile manufacturers and energy groups, which intend to join the alliance. A pilot factory with around 200 employees is planned to be opened in the coming months in France. The two main production sites in France and Germany should be established by 2023. Initially, the two plants would produce enhanced liquid batteries before moving to solid-state technology by 2025–26. In case of the battery production industry, Germany and France have the intention to build on the history of success in case of Airbus and want to join forces also in case of the battery production industry by forming a similar consortium. Other European Member States are interested in joining the consortium including Italy, Belgium, Poland, Austria, and Finland with the market for EV batteries expected to grow significantly.

The aim will be that the European battery industry will take the lead in designing and producing the most environmentally-sustainable and ethically-responsible products, while ensuring that the highest recycling rates possible are achieved. In particular the recycling of raw materials will have to be increased, considering the limited resources. Lithium recycling could make it possible to reutilise existing lithium from batteries.

However, if EVs are to become the key zero emission vehicles of Europe's clean mobility strategy, the battery producing and recycling industry will also need to fulfil EU-wide minimum requirements for sustainability in the production and recycling as well as commitments on ethical sourcing of raw materials.

## 5. Conclusion

The European automobile manufacturers have been entering the production of electric vehicles with some years of delay. However, it was accelerated to a certain extent by the impact of the diesel scandal in 2015 and the perspective of stricter rules on CO<sub>2</sub> emissions beyond 2020. The delay of the transition

towards a focus on EV production has also delayed the decision on how to deal with the battery manufacturing. While in the past, EU automobile manufacturers relied on the purchase of batteries from external manufacturers, the European Commission is concerned of the serious risk for Europe to become irreversibly dependent on battery cells imports and intends to reduce and possibly end this dependence. The establishment of a EU-based industry for battery mass production has become one of the main targets to secure the European automobile manufacturers' future competitiveness. The European Battery Alliance is part of the Energy Union Strategy and aims at strengthening clean mobility and reducing dependencies deriving also from battery cell imports. Therefore, the launch of the European Battery Alliance aims at achieving the target to make Europe a global leader in sustainable battery production. The European Commission will continue to work in partnership with both interested Member States and the industry in the framework of the European Battery Alliance. At the third meeting of the EBA, EU Member States representatives have emphasised their willingness to establish a strategic battery value chain across the EU. However, more projects will be necessary to support the development of the supply chain for batteries. Also political support is essential for encouraging further investment. Germany and France in particular have been pushing for a pan-European consortium to develop new battery technologies. They intend to create a consortium like in case of the European aircraft manufacturer Airbus. While so far European automobile manufacturers have been reluctant to initiate high investments into the large-scale battery production, the European governments are now ready to support initiatives with state aid. European governments and companies will have to build and continue their alliance for developing next-generation batteries for electric vehicles. Therefore, also state aid is a welcome tool to accelerate the set up of the European battery industry. At EU level, the introduction of legislation for ensuring a high level of

sustainability requirements for the battery cell production will be necessary. This will also have to include high standards and requirements regarding sustainable and ethical mining practices for the raw materials, a low carbon footprint during the production processes as well as strict recycling criteria.

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