

Speech at the BATTERY 2030+ conference in Brussels

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Building the roadmap for inventing the batteries of the future

Ladies and gentlemen,

I am very pleased to be with you today.

I very much appreciate your forward-looking work under Battery 2030+. We need to mobilise the efforts of the European research community into future battery technologies.

The technology roadmap that you are developing will be a key deliverable for us to stay in the lead strategically.

Our ambition under the Energy Union has been that Europe becomes the first climate-neutral continent by 2050.

Batteries are essential to Europe's decarbonisation. They will contribute to the new European Green Deal, which is at the core of the political agenda of European Commission President-elect Ursula von der Leyen.

Decarbonisation of the Union's economy is key to reaching net zero emissions, with electrification of road transport and the transition to clean energy playing a major role.

Energy storage is a game-changer in this new landscape and batteries one of the key solutions for many applications including light vehicle road transport and energy storage in buildings.

Bloomberg New Energy Outlook report forecasts that, by 2040, 57% of all passenger vehicle sales will be electric and will represent 30% of the global vehicle fleet.

It foresees that price of electric vehicles will continue to drop and reach a level similar to conventional engine vehicles by the mid-2020s in most segments. By that time, we can expect a mass-market adoption.

Towards establishing a fit-for-future European Battery ecosystem

I initiated the European Battery Alliance two years ago to make sure that Europe stays ahead of the curve. That in the face of this massive transition to electric mobility, our automotive industry can continue to be the best in the world.

We have started to mobilise European industrial players across the battery value chain to regain leadership in this strategic sector, with a market estimated to reach annually EUR 250 billion by 2025.

Together with the Member States and European industry, we established the framework for stimulating and supporting competitive industry-led battery projects using the full potential of our EU policies and financial instruments. This was possible thanks to the high political momentum at regional, national and EU level.

Our objective is ambitious. We want to create as quickly as possible the most innovative, competitive and sustainable battery eco-system here in Europe, starting almost from scratch, as Europe has today only 3% of the global cell manufacturing market.

At to this end we have been working against the clock.

In April 2018, after intense discussions with industry and Member States, we adopted the Strategic Action Plan on Batteries.

It represents a comprehensive policy framework with regulatory and financial instruments to support the complete battery value-chain ecosystem. In addition, we have developed a strong partnership with the European Investment Bank to unlock potential investments. The European Investment Bank has already provided significant support for the Northvolt project, which is building the first gigafactory for 'made in Europe' batteries in Sweden. Another one is to follow in Germany.

In parallel, several Member States have launched their own national initiatives. Some announced their willingness to devote considerable resources to battery projects. Such is the example of the Franco-German joint multi-billion projects going beyond state of the art innovation, announced in May 2019.

This momentum has contributed to the emergence of a number of strong industrial partnerships, springing up from across the value chain, for example:

- mining of critical raw materials in Finland, Portugal & Czechia
- production of cathode materials in Poland, Finland and Germany;
- cell manufacturing in Sweden, Germany, France and Italy;
- battery packs in Germany & Poland; and
- recycling in Poland and Belgium.

We are also hoping to announce soon the first major pan-European battery consortium using the Important Project of European Common Interest (IPCEI) instrument, to be followed by a second battery consortium using the same investment scheme. Quick establishment of these two IPCEI project consortia is vital for Europe to deploy its own manufacturing capacity at scale, thereby establishing a competitive European battery industry.

This is critical for reinforcing our autonomy and technological sovereignty in a key industrial sector such as automotive, one of the big employers of the European economy.

However, this is not enough. Therefore, our strategy also includes other relevant policy dimensions such as:

- Preparing an EU legal framework to set out the mandatory performance and sustainability criteria for batteries placed on the EU market.
- Securing sustainable access to raw materials, like cobalt and lithium, which are indispensable for massive battery production.
- Addressing skill shortages.

Besides quickly launching viable battery projects, we also need substantial and sustained investment to secure European battery-industry competitiveness and sustainability in the longer term. Our innovation policy should closely link the research effort with the industrial roadmaps and the creation of future manufacturing capabilities.

In our Strategic Action Plan, we have already stepped up our research ambitions. Under Horizon 2020, the Union will be investing close to EUR 250 million in battery research during the 2019-2020 period, targeting both further development of the battery value chain, as well as investments in different application sectors.

We have also acknowledged the importance of the new generations of ultra-performing safe and sustainable batteries, which are at the core of your work on Battery 2030+.

In June 2019, we launched 'BatteRies Europe'; a network gathering all research and innovation stakeholders in Europe, to prepare an overall European research agenda covering all aspects of the battery value chain; from raw materials to battery manufacturing and recycling.

The new generations of batteries should meet diverse needs of a future carbon-neutral economy. While the automotive sector is driving the short-term demand, many other sectors will need targeted power storage solutions, for example rail, aviation or maritime transport. This is also relevant for stationary energy storage and for the use of many electronic devices including those we will increasingly use in the near future, such as drones and robots. Battery is not the only solution but its relevance, possibly in complementarity with other technology like hydrogen, is key.

To succeed, Europe should not only invest to improve lithium-based battery technologies and in the upcoming next generation of solid-state battery technologies but it should look further ahead.

The new generations of batteries should be the greenest, the safest and the more sustainable; having higher energy efficiency, being quickly rechargeable, produced with lower CO₂ footprint, based on abundant raw materials, easily manufacturable, re-usable and recyclable. They should be combined with the right software and integrate vehicle-to-grid technology.

These criteria are essential although not easy to combine into an economically affordable technological solutions.

But this is an opportunity for Europe to build on its scientific excellence and technical expertise and to lead the market of future battery technologies.

Now moving to the importance of your work under Battery 2030+

Battery cell chemistry today is still a rather uncharted area. Finding new battery chemistries is a slow and cumbersome process and no one can predict what could be the future winning material-chemistries combinations.

We therefore need to mobilise large European research efforts for cracking this challenge, in close cooperation with our industry. I am pleased to see that this is at the core of the Battery 2030+ Manifesto that you published a year ago and that this challenge has already received support from more than 1200 researchers from all over Europe.

In the Manifesto, you propose to use the power of digital technologies such as modelling, simulation and artificial intelligence for accelerating the exploration, discovery and validation of new materials and chemistries designed with a desired state of safety, stability and performance.

You also propose to build smart batteries with embedded sensing and self-healing capabilities so that they can activate internal mechanisms to restore their level of performance while increasing their safety and longevity.

These ambitious objectives have the potential to open new industrial opportunities for smart and high performing batteries 'made in Europe' and adapted to specific sectorial needs. We have many assets to take up this challenge. We have scientific excellence in materials and electro-chemistry as well as in digital technologies that we can combine with the power of our unique experimental and computing infrastructures. We will succeed if we work altogether.

This is the reason why the Commission has already decided to allocate EUR 42 million in the last year of Horizon 2020 to promote the objectives of Battery 2030+ and help realise your vision.

Preparing the Battery 2030+ and the foresight agenda

As you probably know, President-elect Ursula von der Leyen has been kind enough to entrust me with the portfolio of both the European Battery Alliance and foresight.

They are intertwined.

With the European Battery Alliance we are converting long-term objectives and vision (to capture a great part of the market in battery cells by and beyond 2030) into real collaborative action.

This is epitomised by your work under Battery 2030+.

I welcome that your long-term vision will be accompanied by a robust strategic research agenda and a technology roadmap to set out the main areas of work with a clear timeline and clear outputs, including also intermediate targets to monitor progress towards the objectives.

I am pleased to see that this is precisely the essence of today's workshop. It will be an opportunity to capitalise on all the ideas you have harvested so far from the hundreds of actors you have managed to mobilise across Europe.

As we say in foresight language (so I have learnt recently), we will be able to “backcast” from your long-term initiative to the current research agenda prepared by ‘BatteRles Europe’. Your agenda should also become a reference point for Horizon Europe, and national programmes and initiatives.

Conclusion

Europe has traditionally been a global leader and front-runner in all aspects of automotive design and production. And thanks to your work I am convinced it will remain so..

Europe needs to master the full battery value chain from early discovery, as we did for Lithium a few decades ago, to large-scale production of batteries ‘invented and made in Europe’. We should act fast today to capture tomorrow’s opportunities. This is what foresight is about.

Combining short and longer-term efforts are at the core of our European strategy that is already starting to bear fruit.

With the commitment of a number of key industrial actors, regions and Member States as well as the Union, we see a number of pieces of the puzzle falling into place. We see European companies that are prepared to take the lead and are walking the talk by making significant investments (more than EUR 100 billion according to Innoenergy).

We see the emergence of a vibrant research and innovation ecosystem covering the entire innovation cycle from fundamental research to commercialisation.

The Commission supports these efforts in close cooperation with the Member States, the regions, the European Investment Bank and private investors.

The European Battery Alliance could be a good example of the 21st century European innovation- driven industrial policy that could certainly inspire other sectors.

I look forward to hearing about your discussions today as a stepping stone to our sustained leadership in future battery technologies.

I thank you for your attention.