European Economic and Social Committee

TEN/696
Strategic Action Plan on Batteries

OPINION

European Economic and Social Committee

Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank on the Implementation of the Strategic Action Plan on Batteries: Building a Strategic Battery Value Chain in Europe
[COM(2019) 176 final]

Rapporteur: **Colin LUSTENHOUWER**

Consultation	European Commission, 03/06/2019
Legal basis	Article 304 of the Treaty on the Functioning of the European Union
Section responsible	Transport, Energy, Infrastructure and the Information Society
Adopted in section	03/07/2019
Adopted at plenary	17/07/2019
Plenary session No	545
Outcome of vote (for/against/abstentions)	189/1/5

1. Conclusions and recommendations

1.1 The European Commission's first progress report on the implementation of the Strategic Action Plan on Batteries shows that a variety of actions have been launched to develop a significant battery industry in the EU.

1.2 Although it is far too early to draw definitive conclusions, the EESC supports the initiatives that the Commission has taken and has announced it will take to work with Member States and European industry to break Europe's dependence on non-EU – particularly Asian – countries.

1.3 There is much to be done in the coming years to achieve the necessary level of technological expertise in the EU, to secure the supply of raw materials from third countries and EU sources and to ensure that batteries can be recycled safely and cleanly.

1.4 Investing in staff is the joint responsibility for the government and the business community.

2. Introduction

A. In May 2018, the European Commission published a communication entitled "Europe on the Move"[1]. This communication sets out the policy the Commission has in mind with regard to sustainable mobility for Europe: safe, connected, and clean.

2.1 The policy forms part of the Juncker Commission's "European Energy Union" policy – a comprehensive framework integrating climate policy into energy policy and complemented by a targeted industrial policy to meet the objectives of the Paris Agreement. These objectives seek first and foremost to cut CO_2 emissions from fossil fuel-based energy production[2] as well as transport which, in Europe, relies on vehicles (trucks, cars) using combustion engines and which are themselves powered by fossil fuels (petrol, gas).

2.2 Within the context of "Europe on the Move", a specific action plan was drawn up by the Commission with a view to developing and producing batteries. To this end, the Commission presented a separate annex to the abovementioned Communication entitled a "Strategic Action Plan on Batteries".

B. Why a specific action plan for batteries?

2.3 Batteries have become an indispensable part of our daily lives. In our mobile phones, our PCs and tablets, our domestic appliances, and especially in our electric vehicles (EV), batteries are key to ensuring that these objects function effectively and safely and that they preferably have a long life. At the same time, the lifespan of a battery is still (too) limited. Within these product

1 COM(2018) 293 final.

2 Energy production and use account for 79% of EU greenhouse gas emissions, European Court of Auditors' briefing paper of 1 April 2019 on EU support for energy storage.

groups, the Commission's policy, as set out in the Action Plan, focuses mainly on battery development for EVs, but also on other aspects such as battery second use and recycling[3].

2.4 Battery systems are good for small-scale energy storage. Large-scale energy storage, of the energy produced by offshore wind farms for example, does not seem to be really feasible in batteries. This large-scale energy storage should be carried out using other energy carriers, such as hydrogen and ammonia[4]. In this area too, the Commission supports a wide range of initiatives using the Horizon 2020 budget, such as "power-to-gas" technology[5]. In the same vein, great attention is paid to the technological development of efficient and safe ways of connecting to high-voltage electricity grids ("power to the grid") using energy storage, so as to eliminate the very high costs of "offshore converter stations". This could also prevent a high degree of the grid loss that still occurs using high voltage power cables in or on the seabed between offshore wind farms and the mainland, perhaps leading to efficiency gains of around 10-15% in sustainable offshore energy production.

2.5 Batteries are expected to account for around 40 to 50% of the cost of an EV, but it is already clear that those costs could fall. Given the very rapid development of electric vehicles[6], the availability of effective, safe and environmentally-friendly batteries has once again become an acute issue. The Commission sees a huge market for European industry, which could amount to 400 GWh and EUR 250 billion by 2025. This represents opportunities for Europe, not only from the point of view of climate objectives but also from an economic and employment perspective. As Commissioner Bieńkowska recently said: "We anticipate a strong battery industry in the EU that contributes to the circular economy and to clean mobility".

2.6 But let us be clear about the situation: Europe lags far behind Asian countries and businesses in terms of battery development (R&D) and production. As much as 85% of all batteries that we use in Europe come from China, Japan or Korea. European production represents a mere 3% of world production, with the USA accounting for around 15%. This means that if we want to transform mobility from fossil propulsion into electric propulsion in Europe, we will be entirely dependent on Asian production capacity.

2.7 As if this were not serious enough, the raw materials needed for battery production, such as lithium, nickel, manganese and cobalt, are currently being extracted in limited quantities in Europe, though potential reserves are present. These European reserves will need to be exploited, though it currently seems that they will only be able to cover around 15 to 20% of total demand. The necessary raw materials also come from Latin America, Africa and Asia, where the Chinese have reportedly created large mining companies so as to provide them with

3 Although the primary focus is on cars, it should not be forgotten that developments are also under way to produce electrically powered vessels (e.g. small ferries).

4 See also the EESC opinion on "Energy storage: a factor in integration and energy security", OJ C 383, 17.11.2015, p.19.

5 An interesting project called "WaterstofNet" has been set up in Flanders: a cluster of producers (wind and PV), hydrogen technology (electrolysis and compression) and end-users in the chemical and transport sectors.

6 In Norway, for example, it is expected that more electric cars will be sold for the first time this year (2019) than traditional cars with combustion engines. Within this group of EVs, a well-known US car brand supplies most of those EVs.

unhindered access to these raw materials[7]. What is more, European minerals are often refined and processed in China too.

2.8 The extraction and processing of raw materials is energy-intensive and produces important volumes of mining waste, including in some cases hazardous waste.

2.9 Europe, on the other hand, is facing the problem of processing batteries. The large number involved means we are confronted with a new and worrying waste disposal problem, not least because the recycling of materials from these batteries is still in the early stages. Even now, only some 10% of the material from batteries is recovered. There is thus considerable potential for processing/recovery.

3. The 2019 Progress Report

3.1 In its opinion of 17 October 2018[8], the EESC supported the Commission's proposals for more sustainable transport and the Strategic Action Plan on Batteries. At the same time, the Committee pointed out that many factors could hamper the implementation of the plan, such as dependence on third country raw materials, lack of alternative fuels, management difficulties, processing and disposal of used batteries and a lack of skilled workers.

3.2 On 9 April 2019, the Commission published the first progress report on the May 2018 Strategic Action Plan on Batteries. The progress report points out that many sectoral and regional initiatives are being developed. The European Battery Alliance, for example, appears to be an enabling platform where businesses, policy-makers and scientists can coordinate their efforts to deliver on the bold and ambitious objective of bringing the EU and its industries back to the forefront of the rapidly developing battery technology. An initial call for proposals with a budget of EUR 114 million has been launched under the Horizon 2020 programme, and a further call with a budget of EUR 132 million will be launched for 2020. In addition, large-scale funding can be provided from the resources available for EU regional policy. Business and science seem keen to get involved in order to complement their own investments with EU funding and to step up development of R&D.

3.3 A number of initiatives have been developed since the publication of the Action Plan, but many of them, including interregional initiatives, are still only in the preparatory phase. Barely one year since the publication of the Action Plan, it still seems far too early to take stock. However, there is clearly a widespread sense of urgency: policy-makers, scientists and businesses realise that it is late, even too late. The stakes are very high: there is a real risk that very large parts of the European automotive industry will relocate their production to regions close to battery cell production units, mainly in Asia. This raises the question of the jobs of some 13 million European workers in the sector.

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7 The Chinese government has set itself the target that, as of 2025, EVs should account for 20% of all new cars sold.

8 EESC opinionon "Europe on the Move", OJ C 62, 15.2.2019, p.254

4. The way forward?

4.1 Since the Juncker Commission came into office and the European Energy Union programme was adopted, a number of actions have been developed which, against the backdrop of climate policy, have set in train an industrial policy that has given the transition to a more sustainable society an entirely new focus. The Commission's industrial policy, supported by the Member States, has been given a far greater steering and initiating role than was previously the case. The EESC welcomes the Commission's new approach and calls on it, the Member States and European business to continue to pursue the course that was recently initiated.

4.2 Such an approach is welcome and, given that European industry seriously lags behind in battery development and production, it is also necessary. However, an industrial policy with a steering role also carries the risk of backing the wrong horse (picking the supposed winner prematurely). Nonetheless, the Committee welcomes the new approach covering the entire industrial value chain (the value chain approach). Industrial policy based on the value chain methodology is also much better suited to "circular thinking" than the old sectoral approach of industry. That said, the value chain approach also requires another more appropriate policy that is, for example, adapted to State aid policy. Given that the battery production industry has been made a spearhead of EU industrial policy, the Commission will also need to adopt a flexible and supple approach to the investment aid that Member States grant to businesses in these chains. By applying the eligibility criteria for IPCEI ("Important Project of Common European Interest") in a flexible way, European industry can be helped through substantial public funding. Such funding could, to some extent, come close to the levels of support that Asian businesses receive from their governments. The EESC welcomes this new application of the IPCEI instrument.

4.3 However, the question arises as to whether the policy set out in the Strategic Action Plan might not be too late to bridge the enormous gap vis-a-vis Asian countries and their businesses. It should also be asked whether the financial resources deployed are sufficient. To put it bluntly: "Is it too little, too late?"[9] The European Court of Auditors set out its concerns in a recently published briefing paper: "However, there is a risk that the measures taken so far will not be sufficient to achieve the EU's strategic objectives for clean energy." It should be noted, however, that the Commission's role is limited, as are the financial resources at its disposal. The Commission is right to be somewhat detached. Its role is that of matchmaker. It is primarily for Member States, European business and its research institutions to take up this challenge. It is therefore very welcome that the French and German governments decided at the beginning of May 2019 to each make around EUR 1 billion available to support initiatives by their business communities to develop a battery production industry. This is one of the first very practical outcomes of the European Battery Alliance launched by the Commission, where Member States, the Commission and business work together.

4.4 In the EESC's view, it is still far too early to draw any final conclusions, so soon after the adoption of the battery action programme. The EESC welcomes the multitude of initiatives launched or developed by a number of stakeholders. The results will (should) become apparent in the coming years. Technological development within and outside the EU never stops. This

9 See also the European Court of Auditors' briefing paper of 1 April 2019 on EU support for energy storage.

dynamic process means that the battery strategy is not a one-off initiative but requires a structural approach in EU policies. It also means that the investments in means of production now needed by Member States have a long payback period (20 to 30 years is no exception).

4.5 The question is also whether the EU is even capable of building a competitive sector for battery development and production given that the necessary raw materials are not available in the necessary quantities within the EU. Even though initiatives are being developed to extract lithium in some EU Member States, for example (including re-opening abandoned mines), it seems illusory to believe that the EU will be able to become completely self-sufficient. Furthermore, the European population has serious reservations about mining and, in most cases, the NIMBY principle also applies here (Not In My Back Yard). The positive effects for local communities of the socially and environmentally conscious extraction of raw materials deserve to be brought more to the attention of the population. It is also evident that "local ownership" – i.e. the involvement of the local population, in financial and other terms – can avoid a situation where there is such resistance to these activities that they cannot get off the ground.

4.6 In view of the raw materials situation, the EESC stresses that it is important for all parties involved to step up R&D efforts to develop new types of battery, such as solid state batteries, that would significantly reduce dependence on these raw materials.

4.7 How realistic is it to expect, as the Commission seems to think, that 10 to 20 mega-producers will emerge in the EU? Are long-term investors in capital markets sufficiently willing to invest the approximately EUR 10 billion needed? While fully appreciating the priorities set out in the action programme, the Committee still finds it disappointing that no mention is made of the question of access to the capital needed for these major investments. Banking financing alone is completely insufficient. Capital markets, and in particular infrastructure funds, will need to be ready to invest in these projects using risk capital[10]. This requires a long-term policy, adequate returns and underlying support from national authorities. The parties need to stop looking at each other; the government can play a role here as a driver of an investment process. The Franco-German initiatives show that these countries are aware of this. The recently launched Investment Platform with EIT InnoEnergy as a "driver/accelerator" could also, in the EESC's view, prove very valuable in bringing together investors and promoters.

4.8 At the same time, targeted information campaigns will be needed to inform European consumers that purchasing batteries produced in Europe, where human and environmental safety standards are taken into account, has many advantages over purchasing batteries from third countries, where these standards and values are not respected to the same extent. Carrying on as we do at present is a permanent way of exporting our environmental problems.

4.9 The EESC believes that more practical initiatives are needed to develop material recycling from old batteries. So-called "urban mining" can make a substantial contribution to the provision of the necessary raw materials. There is significant potential for future recycling of the urban mine

10 On 2 May 2019, Tesla announced that, although it had recorded a loss of in excess of USD 700 million in Q1-2019, it would like to raise USD 2 billion on the capital market for a new battery plant and the development of a new type of electric car. The American capital market is easily able to make such investments in the form of shares and/or bonds. The question arises as to whether the fragmented EU capital market can match this.

provided that economic incentives, collection amounts, recovery technologies and, ultimately, recycling rates improve. The recent Commission report on the implementation and impact of the Batteries Directive unfortunately shows that the collection of conventional batteries has not yet reached the desired level. About 57% of such batteries are still not recycled. It is therefore right that the Commission, as indicated in its concise but very effective report, is considering adapting the 2006 directive, not least given the arrival of new batteries, such as those targeted by the action plan. The Committee awaits these proposals with great interest. In addition, the Committee notes that current battery processing facilities will have to be adapted again in view of the large flows of new battery types in the near future. New technology will also need to be developed for recycling or processing; the EESC believes that targeted R&D in this specific area requires the EU's full support, as it will help improve the living environment and can to a large extent reduce the dependence on raw materials from outside the EU.

4.10 The Committee would also like to see targeted research into the recovery of materials from residual waste heaps of coal and steel and other types of extracted metals. It should not be ruled out that these sources could also help meet the need for raw materials. The EESC welcomes the recently published report on the recovery of critical raw materials from mining waste and landfills[11] by the Joint Research Centre of the European Commission and calls for political support to be ensured for the study and analysis of the critical raw materials issue, given that the "global battle for raw materials" is becoming more serious.

4.11 To what extent does the regulatory framework contribute to the development of the necessary R&D in the EU and the application of the technology produced as a result? The Commission has a natural tendency to consider laws and regulations. After all, these are the steering tools available to it. But it might better to monitor and analyse developments in the market, together with the industry and the social partners, before resorting to the instrument of regulation. First initiate, promote and produce and, only after thorough analysis has been carried out, regulate – this appears to be a more desirable policy approach for this precarious sector.

4.12 The EESC calls on the Commission to continue to ensure that calls for tender are genuinely tailored to EU businesses which are often small in scale, so that these medium-sized producers do not miss out on funding due to the fact that their small-scale R&D does not meet the requirements for the size of the projects in the calls for tender. However, the EESC welcomes the fact that the Commission has designed the tenders in a new, more joined-up way, making them more accessible to EU businesses.

11 Recovery of critical and other raw materials from mining waste and landfills: State of play on existing practices, EUR 29744 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-03391-2, doi:10.2760/494020, JRC116131.

4.13 The Committee considers it important that EU funding is also made available for projects which have been developed by European medium-sized battery production companies and have already undergone significant technological development (Technology Readiness Level 5 to 9). This group of companies, which are more focused on entering the market than on basic research, still seem to be excessively excluded from EU funds. For this group in particular, access to EU subsidies for training and retraining workers will have to be designed in a simple way.

Brussels, 17 July 2019.

Luca JAHIER
The president of the European Economic and Social Committee