Consultation on Draft Guidelines on Research, Development and Innovation State aid for 2014-2020

A EURELECTRIC response paper

February 2014

EURELECTRIC is the voice of the electricity industry in Europe.

We speak for more than 3,500 companies in power generation, distribution, and supply.

We Stand For:

***Carbon-neutral electricity** by 2050*

We have committed to making Europe's electricity cleaner. To deliver, we need to make use of **all low-carbon technologies**: more renewables, but also clean coal and gas, and nuclear. Efficient electric technologies in **transport and buildings**, combined with the development of smart grids and a major push in **energy efficiency** play a key role in reducing fossil fuel consumption and making our electricity more sustainable.

***Competitive** electricity for our customers*

We support well-functioning, distortion-free **energy and carbon markets as** the best way to produce electricity and reduce emissions cost-efficiently. Integrated EU-wide electricity and gas markets are also crucial to offer our customers the **full benefits of liberalisation**: they ensure the best use of generation resources, improve **security of supply**, allow full EU-wide competition, and increase **customer choice**.

***Continent-wide** electricity through a coherent European approach*

Europe's energy and climate challenges can only be solved by **European – or even global – policies,** not incoherent national measures. Such policies should complement, not contradict each other: coherent and integrated approaches reduce costs. This will encourage **effective investment to** ensure a sustainable and reliable electricity supply for Europe's businesses and consumers.

EURELECTRIC. Electricity for Europe.

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KEY MESSAGES

- **Innovation in the power sector depends on a full set of enablers**: a vibrant private sector incentivised by competition and entrepreneurship, functioning Research, Development and Demonstration that is effectively linked to the rest of the innovation process (Deployment and Commercialisation), an 'enabling market setting' to underpin the business case for deployment, and a set of wider enablers, including strong competition, effective regulation, and supporting infrastructure.

- **The European Commission should make sure that the different state aid instruments for innovation are coherent.** The State Aid Modernisation Package is composed of different instruments: Research & Development & Innovation (RDI) Guidelines, Environmental and Energy Guidelines (EAEG) and General Block Exemption Regulation (GBER). These rules need to complement each other. The scope of the guidelines and the GBER as well as the links between them should be clearly expressed. Together they should cover the whole innovation value chain: from basic research to first commercial-scale projects up to widespread deployment of technologies.

- **EURELECTRIC proposes to increase the state intensities for demonstration projects.** Demonstration and early deployment are indispensable parts of the power sector innovation chain. Not only does demonstration enable real-world validation of emerging R&D findings, but when integrated within an effective overall innovation policy, it is also a crucial step towards commercialisation and subsequent widespread deployment.

- **EURELECTRIC believes that the discrepancies in aid intensity between the three first phases of the innovation value chain (Research, Development and Demonstration) should be removed.** There should be only limited or no differences in aid intensities between the categories of fundamental research, industrial research and experimental development. The different financial thresholds for notification should also be limited.

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Introduction

The European power sector is strongly committed to research and innovation. EURELECTRIC believes that Research, Development and Deployment (RD&D) support, when well designed, is the most efficient and least distortive means of bringing immature technologies closer to the market. At the same time the innovation process is important to develop incremental improvements to mature technologies.

A strong focus on RD&D support needs to ensure learning effects with new technologies. The precise measures to be taken for the full innovation value chain – from inception to market uptake – have to be put under closer scrutiny. A stable and incentivising RD&D framework, with the correct level and type of support at each phase of development, is thus key to deliver on to the successful commercialisation of technologies.

The Commission should therefore take a comprehensive look at the full innovation value chain and take the state aid modernisation (SAM) process as an opportunity to propel energy innovation further. The revised Research, Development and Innovation (RDI) Framework is an integral part of the Commission's SAM package, which also includes the Guidelines on Environmental and Energy Aid (EAEG) and the General Block Exemption Rules (GBER). EURELECTRIC believes that, in light of the SAM initiative objectives, it will be important to ensure consistency across the guidelines and block exemptions in order to ensure to address the full innovation chain and to further improve compatibility.

This response starts with outlining how innovation in the power sector in general should be supported, followed by our main issues with regards to the draft RDI guidelines and our detailed comments to some of the paragraphs.

Research, Development and Deployment (RD&D) in the power sector: what kind of support does it require?

Policy acting on innovation in the power sector goes beyond traditional innovation policy domain of research, development and demonstration support. Four categories of policy are all highly significant to enable innovation:

- **R&D and demonstration funding**: The first three stages (Research, Development and Demonstration) of the innovation cycle require policies which support research in the technology so that it can be developed and demonstrated: "*technology push measures*".

  In addition, incremental improvements to existing mature technologies through Research and Development also happen in this phase. These R&D efforts are often done to better answer the steadily evolving challenges of the electricity markets and grids, societal and environmental expectations[1].

[1] Examples of such improvements can include the dynamic operation of flexible thermal units to solutions to make hydropower turbines more fish-friendly.

The range of policies that are used to support (Direct R&D grants, R&D risk-sharing and loans, R&D tax credits and Demonstration funding) should clearly fall under the remit of the Research, Development and Innovation Guidelines.

- **Support for deployment and commercialisation**: Equally important policy impetus for innovation comes through support for bringing innovations to the markets. It enables innovation beyond the point of demonstration – through commercialisation technologies and opportunities for new business models. The final steps of the innovation cycle thus require policies which "*pull*" technologies into the market once they have been demonstrated and early commercial market uptake is taking place.

  The tools used in these phases differ from the previous phases (Research, Development and Demonstration), and have to be chosen for delivering now on a market pull. The logic of support switches thus from a support to a 'single project' to the concern of creating a 'market'.
  Examples of mechanisms to create the necessary 'enabling market setting' include product-to-market support, subsidised production (like Green certificates, Feed-In-Premium, etc.), and the allocation of public procurement projects to products that would not win on current commercial criteria alone. There also are much more specific types of intervention, such as public financial or other support for small and medium enterprises (SMEs), or publicly funded facilities similar to private venture capital.

  This transition between demonstration and commercialization is also the one where most money is potentially stranded because of inefficient or rigid support mechanisms, and the current renewables support reform discussions illustrates this clearly. The emphasis on near-term deployment has driven high cost increases over the past years. The norm in demand-side policy has been very significant early deployment at high cost, even when costs were falling fast. The cost to consumers to achieve innovation has been correspondingly high. An innovation-driven approach would instead dictate targeted deployment to maintain the pace of cost reduction, saving large-scale deployment for later phases once costs have fallen. Furthermore, most freeriding takes place in this phase too – which can never be entirely avoided, but at least limited to an acceptable level.

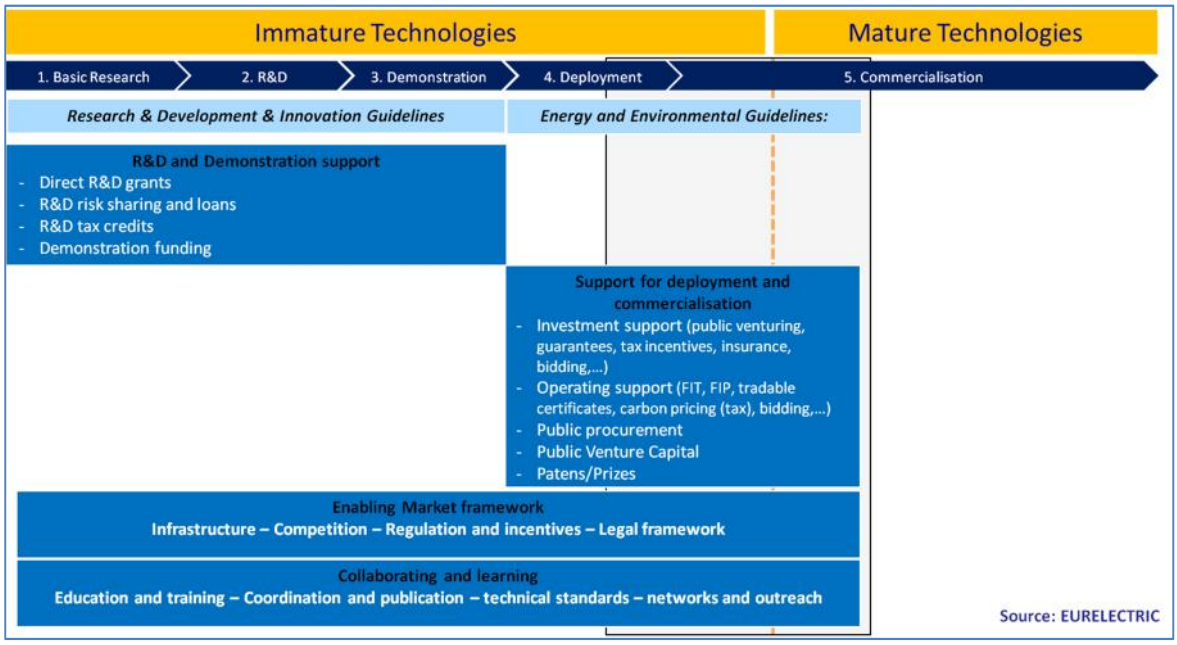
  The range of policy tools to support deployment and commercialisation fall under the remit of the Energy and Environmental State Aid Guidelines. For EURELECTRIC's recommendations on the type and level of support needed for this phase of the innovation process, we refer to our response on these guidelines.

- **An enabling market framework:** The third major category of policy arises from the recognition that innovation requires a broad set of additional enablers to be effective. This includes stimulating functioning competition (e.g. Third Internal Energy Market Package) to provide incentives to explore and deploy new business models, products, or processes. It also includes public infrastructure (e.g. Connecting European Facility), and a legal and regulatory system conducive to entrepreneurship.

- **Collaborating and learning**: A final major policy category consists of a number of cross-cutting initiatives that policymakers can put in place to enable networks through which innovation takes place. One is ensuring that the necessary talent pool is available through education and training. Coordinating research and ensuring adequate resources for collaborations also can be powerful promoters of innovation, as can coordination of

technical standards and measures to ensure access to data and findings that enable further innovation.
The main vehicles on a EU level are the Strategic Energy Technology plan, the European Energy Research Alliance and the InnoEnergy Knowledge and Innovation community complemented by other collaboration mechanisms which are also covered by the Research, Development and Innovation Guidelines.

The following figure maps the different supporting policy tools on the innovation value chain leading from immature to mature:



In sum, innovation in the power sector depends on a full set of enablers: a vibrant private sector incentivised by competition and entrepreneurship, functioning RD&D that is effectively linked to the rest of the innovation process, an 'enabling market setting' to underpin the business case for deployment, and a set of wider enablers, including strong competition, effective regulation, and supporting infrastructure.

Main issues of EURELECTRIC's response

1. **The European Commission should make sure that the different state aid instruments are coherent**

The different state aid instruments (RDI, EAEG and GBER) that are part of the State Aid Modernisation Package need to complete each other and the scope of the guidelines and the GBER as well as the links between them should be clearly expressed. They should cover the whole innovation value chain up from inception to the first commercial scale projects up to the wide spread deployment of technologies.

But currently the linkage between the RDI guidelines and the EAEG is not sufficiently developed- where does demonstration end and first commercial scale deployment start? The draft

framework states that 'experimental development' may include the "development of a commercially usable prototype or pilot which is necessarily the final commercial product and which is too expensive to produce for it to be used only for demonstration and validation purposes'. This clearly overlaps with, for example, the notion of 'first commercial scale projects' as defined by the EAEG. So the level playing field with regard to pilot and demonstration plants is currently unclear and Member States could have difficulties in assessing under which guidelines to notify. In other words the requirements and definition outlined are not clear.

In this regard it is also important to define what can be considered as a pilot and demonstration facility, especially with regard to how far one can go in bridging the 'transition towards commercialisation' and to keep an eye on the support possibilities in the Member States. A disconnection between demonstration and market uptake means that promising technologies do not make it to the market. It should be clear what type of support mechanisms can be used to help the best-performing companies bridge this so- called "Valley of Death".

Clarification and an improved cross-reference to the RDI guidelines in the EAEG are therefore required.

2. **Increase the aid intensities for demonstration projects because demonstration is the neglected part of the innovation chain today**

Demonstration and first deployment (what is defined as 'experimental development' in the guidelines) are indispensable parts of the power sector innovation chain. The gap between small-scale pilot performance and real-world deployment is greater than in many other sectors, making demonstration a critical bottleneck in the overall innovation process. Not only does demonstration enable real-world validation of emerging R&D findings, but when integrated within an effective overall innovation policy, it also is a crucial step towards commercialisation and subsequent widespread deployment.

Despite its importance, demonstration is often at risk of neglect, also in the draft rules. Moreover, demonstration is highly risky for individual private companies to undertake – in view of long amortisation periods for assets, large CAPEX for individual projects, and long development cycles for key technologies. Although typically carried out by commercial companies, the case for public support rests on the same principle as support for R&D, i.e., that the demonstration activity results in benefits (knowledge about the validity of initial R&D findings in real-world applications) that benefit society at large, whereas the private benefits may not outweigh the risks and costs incurred by companies.

Private actors thus often lack a business case to undertake demonstration projects, especially at scale, making public support a necessity. The EURELECTRIC innovation action plan[2] outlined that in the last five years EU-level funding had already taken significant steps towards a greater concentration of resources on demonstration, with power sector funds under FP7 split nearly half-and-half. Also the new EU Framework Programme Horizon 2020 is putting greater emphasis on demonstration. However, at the Member State level (and thus the large majority (some 80%) of total funding, the share devoted to demonstration is far smaller, at 15%. Also Member States should design their RD&D programmes accordingly, to ensure demonstration receives the attention it requires.

[2] Utilities : Powerhouses of innovation – A EURELECTRIC Innovation Action Plan, May 2013

Member States should thus set the aspiration to double the 15% share of national RD&D support currently allocated to demonstration, to avoid creating an innovation bottleneck. Therefore, we recommend that in order for the EU to give a clear and coherent message the value in the mentioned table in Annex II should be increased. Especially the maximum percentage for experimental developments (since this includes also pilots and demonstrations) should be clearly higher for all types of enterprises – at least 50 % for large undertakings.

3. Remove the aid intensity discrepancies between the three first phases (Research, Development and Demonstration) of the innovation value chain

The assumption underlying the State aid rules for RDI that activities closer to the market have a higher potential of inducing distortions of competition and therefore should be subject to higher scrutiny is not always the case. It is also not true that these activities are supposed to involve less risk and attract private funding more easily, certainly not in the power sector.

However these assumptions are deterministic for many of the characteristics of RDI Framework like for the aid intensities as well as for the thresholds for individual notification which are lower for R&D-activities closer to the market. As the deployment of innovation often takes place in an interactive model rather than a linear model, EURELECTRIC suggest revising the related differences in aid intensities between fundamental research, industrial research and experimental development and financial thresholds. We consider to reducing the differences in aid intensity and/or making the thresholds for individual notification equal.

EURELECTRIC's proposal on the maximum aid intensities (Annex II):

Aid for R&D and Demonstration projects			
	Small enterprise[3]	**Medium-sized enterprise**	**Large enterprise**
Fundamental research	100%	100%	100%
Industrial research	70%	60%	50%
Subject to collaboration/ dissemination of results	80%	75%	65%
Experimental development	~~45%~~ 70%	~~35%~~ 60%	~~25%~~ 50%
Subject to collaboration/ dissemination of results	~~60%~~ 80%	~~50%~~ 75%	~~40%~~ 65%

[3] This category should also include 'micro-enterprises', which are companies with a number of employees smaller than nine persons and of which the total annual turnover and balance sheet total does not exceed two million euros.

Detailed Comments article by article

Section 4: Aid to promote projects of common European interest

It should be clearly expressed that in cases of the projects of common European interest the Commission may authorise aid at higher rates. Also it should be clear what kind of projects may be considered of common European interest, since the Commission opted for a separate consultation for this issue.

- *Suggested amendment – section 4. COMPATIBILITY OF AID UNDER ARTICLE 107(3)(B) OF THE TREATY*

When the aid is considered to be compatible with the common market in accordance with Article 107(3)(b) of the Treaty, the Commission may authorise aid at higher rates than otherwise laid down in these Guidelines.

Paragraph 37: Ex-post evaluation application is to be narrowed down and specified without shattering investor confidence

Usually, the EC authorizes aid schemes up to 10 years. Nevertheless, for the "overall balance" of "certain categories" of aids the EC announces that could limit the authorisation to only "4 years or less" with an obligation to re-notify the request to expand the time period. Such limitation could lead to decision of renouncing to the investment for companies not able to face the uncertainties on the risk of not recovering the investments.

In general we think that these Guidelines should not shatter investors' confidence, rather giving them a clear and predictable framework also in terms of timing (short, medium and long term perspectives). The EC should therefore narrow down the case of application of the 4 years authorization, limiting this possibility to cases of operating aids where the investment decision has been already implemented e.g. support to CCS projects already implemented.

> Suggested amendment - par. (37) and section 6:

(37) The overall balance of certain categories of schemes implying operating aids may further be made subject to a requirement of ex post evaluation as described in section 6. In such limited cases, the Commission may evaluate to limit the duration of those schemes (normally to four years ~~or less~~) with a possibility to re-notify their prolongation afterwards but without any prejudice to investor confidence.

Paragraph 73-76: Maximum aid intensities

We regret the fact that maximum aid intensities remain unchanged comparing to the current guidelines. Concerning the experimental development projects, we consider that it should be doubled (50% of maximum aid intensity). As outlined above, experimental development is among one of the most important steps during the maturation of innovative projects because it implements the real results of industrial research and develops a pre-production prototype.

EURELECTRIC pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability

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