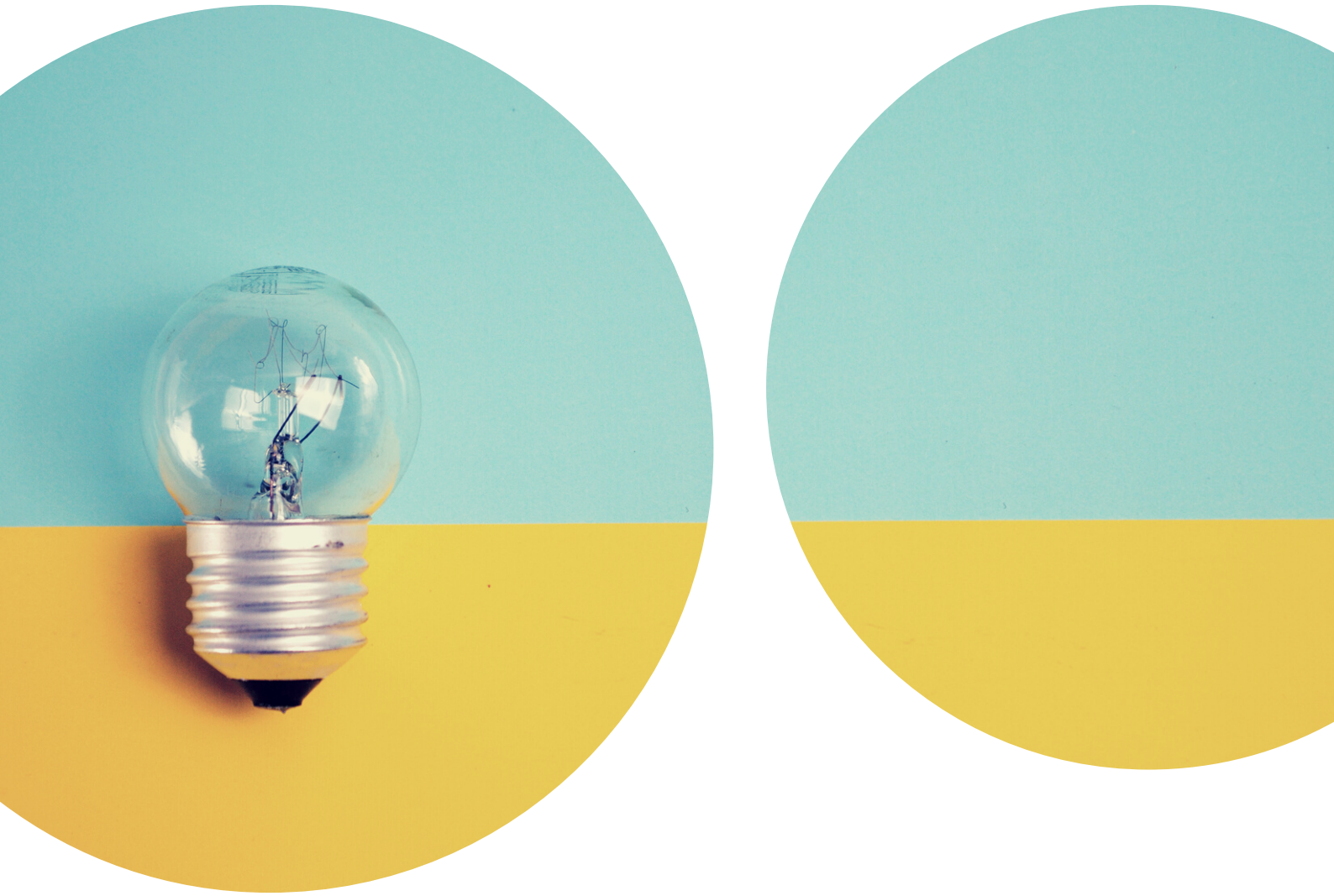
EASE - European Commission Innovation Fund Workshop

GHG Emission Calculation Methodology in the Innovation Fund

Brussels, March 2020



Introduction

The Innovation Fund is the European Union's upcoming funding programme for the demonstration of innovative low-carbon technologies. The Innovation Fund is a key funding instrument for delivering the European Union's commitments under the Paris Agreement. Energy Storage, a key enabler of the energy transition, will be one of the solutions this Fund will focus on.

On 5 February 2020 EASE, together, with the European Commission, organised a workshop to highlight how storage can contribute to its Vision of a Climate Neutral Europe by 2050. On 19 March 2020, EASE organised a follow-up technical online workshop on the Greenhouse Gas (GHG) emissions savings methodology for the European Union's Innovation Fund. This methodology will play a key role in the project selection process. EASE and its members believe the proposed methodology can be significantly improved: the formulas must appropriately value energy storage's contribution to decarbonisation.

Mr Jakob Wachsmuth, Senior Researcher at Fraunhofer ISI, presented the proposed methodology to EASE members and selected representatives of the energy storage sector who had the possibility to directly engage in a discussion with the two actors behind its elaboration: the European Commission and Fraunhofer.

Several aspects of the GHG emissions savings methodology were touched upon during the workshop, but the discussion mainly revolved around three points. First, the energy storage services considered by the Fund methodology, an important subject as some key applications risk being left out. Secondly, the additionality principle (i.e. that electricity inputs are only considered renewable if they are additional to the renewable electricity that would be consumed anyway) was also discussed: its role in the Innovation Fund and the matter of how a project can be consistent with such principle were considered - different answers would lead to different projects being selected. Finally, the matter of how to calculate GHG emission intensity of the grid was also debated. A formula leading to very high grid GHG emission intensity would risk, among other things, making energy storage's decarbonisation impact less significant, and might even render all electrolysis-based projects unfeasible.

Which energy storage services shall be taken into account by the Innovation Fund methodology?

As explained in the introduction, it is particularly relevant to discuss which services will be eligible for the Innovation Fund and which, vice versa, will not be taken into account. The GHG emissions calculation methodology currently foresees two sub-categories for energy storage:

- intra-daily electricity storage: i.e. storage units providing system services and/or taking part in intra-daily electricity markets;
- other energy storage: the remaining services.

For "intra-daily electricity storage", several service sub-categories are expected to be included. First, "services related to RES curtailment"; second, "stability services" (e.g. synchronous inertia); finally, "other services" (e.g. arbitrage).

For "other energy storage", it is foreseen that long-term electricity storage, storage of heat/cold, storage of hydrogen, production of e-fuels/RFNBOs, multiple outputs (electricity, heat, e-fuels) will all be included.
This categorisation is still being worked on by the European Commission, and may be subjected to changes. It was also underlined that in the selection procedure of the Innovation Fund, the evaluators will aim to create a balanced portfolio of projects across different categories.

The possible exclusion of some services, for instance Frequency Containment Reserves (FCR), was also proposed by the Commission and Fraunhofer. The rationale is that most of the FCR is done already by batteries in Europe, and including this service would not decarbonise the FCR provision any further. As well as this, the exclusion of "Black Start" services was debated: Mr Wachsmuth from Fraunhofer highlighted that it is very often provided together with other services and therefore its inclusion would lead to emission avoidance being incorrectly counted multiple times.

Instead of defining the acceptable services in advance, during the workshop discussion a few stakeholders put forward the proposal that the Innovation Fund could welcome all services rendered to industries covered by the ETS sector. This would mean that innovative services, such as RES powering shipping ferries through batteries, would be eligible. A decision on this topic was not reached, but the matter will be looked into by the Commission's Innovation team.

How important will the additionality principle be to the Innovation Fund?

The additionality principle will be an important requirement within the Innovation Fund selection process. Several additionality-related aspects were touched upon during the workshop:

- The Commission made clear that Guarantees of Origin (GoO) alone will not be sufficient to prove additionality;
- A project claiming renewable energy inputs will need to ensure that the same amount of renewable energy is added to the system. This would be done through the development of RES within the project, but also through a renewable Power Purchase Agreement (PPA);
- There was however no clarity yet on what types of PPAs (financial or physical) would be acceptable.

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The Commission also noted that the additional costs related to the procurement of renewable energy instead of non-renewable energy (i.e. regular grid electricity) in the reference scenario could be claimed as relevant costs, and would thus would be eligible for Innovation Fund coverage.

As part of the discussion on the additionality principle, the European Commission mentioned that renewable energy generation and consumption related to the project will not be counted towards national renewable energy targets.

How will the Greenhouse Gas emission intensity of the grid be calculated?

A key point of discussion in the Innovation Fund methodology revolves around which assumptions should be made on the energy mix and greenhouse gas intensity of the grid during the timescale of the project. Three timescales for the quantification of emissions are currently under evaluation: Today and 2030; Today and 2050; 2030 and 2050.

The 2030-2050 option would assume a lower GHG intensity in the grid, and it is the most appropriate option according to the European Commission and Fraunhofer. EASE welcomes this decision – it allows for storage projects to better demonstrate their decarbonisation potential. On an EU level, the 2030 emission intensity of the grid is estimated to be about 150 grams of CO2 per kWh (equal to 40 grams of CO2 per MJ). By 2050, the grid is assumed to be carbon neutral.

It was also debated whether national or EU GHG emissions factors for grid-based electricity should be used, or whether a weighted average of the two may be the solution. Fraunhofer and the Commission highlighted that all the options have significant advantages and disadvantages. The Commission stated that it is very unlikely that the national emissions factors will be considered; the chosen option will be an EU-wide average emission factor. This decision, combined with the choice of moving from historical emissions factors to 2030 one, shall allow energy storage projects to properly demonstrate their contribution in reducing GHG emissions.

The Commission clarified that the assessment of the GHG avoidance is done following the methodology agreed by experts (e.g. National Research Centres), and that evaluators selected by the Commission will carry out these assessments.

Conclusions

The workshop was fruitful and allowed EASE members and relevant stakeholders to provide a variety of inputs on the methodology. On top of the previously mentioned topics, the participants discussed the positive impact of storage in the further integration of renewable energy. Moreover, the key importance of sector coupling was touched upon: emissions savings through sector coupling is currently overlooked, and this is a significant shortcoming of the formula. Finally, the potentially excessive administrative burden placed on Innovation Fund applicants was also discussed: it is important to make the Fund mechanism as sound and streamlined as possible.

EASE and its members believe and hope that the feedback provided during the workshop will be taken up in the Innovation Fund methodology. At the moment, the methodology is not fully settled but, through a few specific changes, can be significantly improved.

This was not the end of EASE's collaboration with the European Commission and Fraunhofer on the Innovation Fund: the Association continues to provide inputs by testing the methodology and helping to refine relevant costs-related tools.

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