

Important Project of Common European Interest (IPCEI) on Microelectronics

Non-paper on "RDI of Major Innovative nature"

Disclaimer: this non-paper has been drafted for the sole purpose of facilitating discussions within the Microelectronic IPCEI Working Group. Statements and opinions given in this paper are tentative and do not necessarily represent the only possible interpretation of current EU legislation. This non-paper does not bind the Commission services and does not prejudice any future Commission assessment.

Hereinafter the reference to "the project" or "IPCEI Project" is to be understood as referring to all and any of the constituent technology fields carried out by each of the participating companies in case of an "integrated project" and/or to the integrated project itself, or as referring to the "single project" and its constituent technology fields within the meaning of the Communication

Main IPCEI Communication requirements

The IPEI Communication itself does not contain extensive clarifications on the required R&D&I content of an IPCEI project. However, it provides for the following condition

- Point 21: R&D&I projects must be of a major innovative nature or constitute an important added value in terms of R&D&I in the light of the state of the art in the sector concerned.
- Point 22: Projects comprising of industrial deployment must allow for the **development of a new product or service with high research and innovation content and/or the deployment of a fundamentally innovative production process**. Regular upgrades without an innovative dimension of existing facilities and the development of newer versions of existing products do not qualify as IPCEI.
- Point 28 (necessity of aid): The aid must not subsidise the costs of a project that an undertaking would anyhow incur and must not compensate for the normal business risk of an economic activity. Without the aid the project's realisation should be impossible, or it should be realised in a smaller size or scope or in a different manner that would significantly restrict its expected benefits
- Annex letter (g) and footnotes 1 and 2:
 - (g) In case of aid to a project of first industrial deployment, [...] as long as the **industrial deployment follows on from an R&D&I activity and itself contains a very important R&D&I component which constitutes an integral and necessary element for the successful implementation of the project**. [...]
 - Footnote 1 to the Annex: First industrial deployment refers to the **upscaling of pilot facilities, or to the first-in-kind equipment and facilities which cover the steps subsequent to the pilot line including the testing phase, but neither mass production nor commercial activities**.
 - Footnote 2 to the Annex: The first industrial deployment does not need to be carried out by the same entity that carried out the R&D&I activity, as long as the former acquires the rights to use the results from the previous R&D&I activity, and the R&D&I activity and the first industrial deployment **are both covered by the project** and are notified together.

Interpretation / Clarification

In the absence of specific definitions for R&D&I content of an IPCEI project in the IPCEI Communication, reference can be made to the previous decisional practice of the Commission in the area of State aid for R&D&I and, moreover, following the definitions and methodology as provided for by the 2014 RDI Framework (the "RDI Framework").

- An IPCEI project could include any of/combination of the types of research categories (fundamental research, industrial development and experimental development, as defined in para. 15 (m), (q) and (j) of the RDI Framework, respectively) and "research projects" (as defined in point 15 (cc) of the RDI Framework);
- The requirements for the research project to be of "major innovative nature" or constitute "an important added value in light of the state of the art in the sector concerned" suggest that they should be interpreted as going beyond the usual meanings of these terms within the case law in the field of State aid for R&D&I;
- Activities without major innovation component (such as regular updates of existing facilities or development of newer versions of existing products), mass production and commercial activities do not qualify as an IPCEI project;
- State of the art in the sector concerned is to be described by the notifying Member States in order to provide a reference point for the assessment of the innovative nature of the projects. It is also for the Member States to show how a project goes beyond the state of the art and to demonstrate its high research and innovation content and/or the fundamental innovativeness of the production processes¹;
- The requirements in para. 22 of the IPCEI Communication for high research and innovation content of the product to be developed and/or fundamentally innovative production process to be deployed should not be read as replacing the RDI Framework definitions on process or organisational innovation. Instead, one could interpret this as further clarification of the significance of the research and innovation embedded in the products and technologies to be created in the framework of an IPCEI project;
 - In this respect, other important positive elements of the new products and technologies to be developed should be taken into account, such as bringing forward an important evolution of the industrial sector concerned, likelihood to bring about a technological evolution in other industrial sectors where the potential use of these new products and technologies is to be envisaged, etc.
- Although it might be commonly true that high R&D&I content or fundamental novelty of the products and technologies would require considerable investments in R&D, it is important to note that the IPCEI Communication does not make reference to the size of the investments (as the Chapeau document refers to in section "The description of IPCEI"), but requires significant innovative nature of the results of the R&D performed within the project. Therefore it will be not enough to refer to the size of the investments in R&D, but instead it is necessary to demonstrate the major innovative nature and important going beyond of the state of the art in the sector concerned in order to satisfy the R&D&I requirements of the Communication.
- Where first industrial deployment (FID) activities are included in the project, this would be stemming from the nature of the products and/or technologies concerned (as required by point 22 of the IPCEI Communication by reference to their high R&D&I content and fundamentally innovative nature) and FID activities are subject to the following conditions:

¹ Some illustration of how state-of-the-art was invoked by the notifying Member States can be found, for instance, in SA 35902 (2013/N), SA 36392 (2014/N), etc. Please note that the references in the decisions to the state-of-the-art in the respective fields are the essence of the information provided by the Member States and therefore much shorter than the submissions. These cases could also serve as examples of how Member States have been presenting the notified R&D&I projects, together with any other case, for ex. SA 37743 (2013/N), etc.

- the products and/or technologies should be a result from a preceding R&D&I activity within the framework of the project (even if not necessarily performed by the same undertaking), and
 - they would require very important R&D to be done even after the pilot phase of the project, i.e. **the FID phase should contain a very important R&D component on its own**, and
 - said R&D in the FID phase should also be indispensable ("constitutes and integral and necessary element") for the successful implementation of the project, and
 - would not compensate for the normal business risk of an economic activity, and
 - FID indispensably precedes the mass production phase and does not cover it or commercial activities;
- The general criteria which identify R&D activities (see Frascati Manual Chapter 2)– novel, uncertain, creative, systematic, transferable and/or reproducible – apply to all R&D claimed to be performed within a project, including to the R&D component contained in the first industrial deployment activities.

Practical suggestions to consider

In order to ensure consistency with the decisional practice of the Commission in R&D&I State aid, it would be advisable to refer in submissions to terminology usually used in the R&D&I State aid domain, including, but not only, to research project, types of research activities, state of the art², etc.

Member States are invited to provide detailed descriptions and appropriate evidence for the state of the art in the sector concerned and explain how the R&D&I activities of participating companies (in the 5 technology fields) bring about important added value in going beyond the state of the art, are of major innovative nature, how are the new products or services of high research and innovation content and/or the production processes are fundamentally innovative. The technical descriptions and details of these are best placed in the 5 technology field documents. The chapeau document should also contain meaningful and appropriate summaries of the systemic synergies effect for the whole EU microelectronics industry, outlining how the research to be performed for each technological field and for the integrated project itself would go beyond the state of the art.

A "classical" presentation of R&D&I projects of the companies in the technology field documents (however maintaining the right balance between both the accuracy and volume of the presentations), as well as of the R&D&I contents of the FID (feed-back R&D, expected outcome, learning process) will be needed. Any company that has already received public support from Member States or EU in the same field, should ensure that the activities in the IPCEI are not the same as the ones that already received support, i.e. should provide sufficiently convincing information that the support under IPCEI does not cover the same R&D project and/or the same eligible costs for which it has already received public support (this can be ensured also by providing declarations by the companies that no cost, which is included in the eligible costs of their current IPCEI-constituent project has been included in the eligible costs of other publicly funded projects).

Member States are invited to provide a substantiated suggestion for an agreed between themselves **criterion for the cut-off between the FID-phase and commercial activities/mass production** and duly explain and substantiate the agreed approach. This should be done for the technology fields concerned by their notification, and an overall summary should be included in the chapeau. The participating companies working in each specific technology field will then implement these criteria. The expected feed-back R&D&I (see Frascati manual Chapter 2) which will take place during the FID phase, its outcome, as well as the learning process should also be described as part of the cut-off definition in the technology field documents or in the company level documents (only if containing

² See the above footnote

confidential information), substantiated to the best possible extent by companies' knowledge and expectations (e.g. based on their experience, fundamental novelty of the products to be developed and first-of-the-kind equipment to be deployed).

It should be recalled that the IPCEI communication includes FID into the eligible activities and costs of an IPCEI due to the very important R&D&I component which is embedded in FID itself and which is indispensable for the successful implementation of the project. Therefore, the indicators for the cut-off of FID should relate to the R&D&I to be completed during this phase and can not be related to marketing and sales / commercial activities or mass production. The indicators should reflect that the FID phase is kept to its minimum in referring to the R&D&I to be completed during this phase.

- In this respect, the criteria used should focus on the R&D&I challenges/elements that will be performed in order to reach the level of maturity (to be also described) expected at the end of the FID. Comparison to volume of mass production, critical number of wafer starts per customer per week/year, critical number of customers, etc., should be avoided and replaced with criteria which are R&D&I-related, e.g. process stability, critical number of defects, critical number of testing scenarios to be performed, etc.
- Moreover, in relation to the yield criterion suggested, the likely reasons for the difficulties related to ramping up yield in a R&D&I process development in FID-phase should be provided and justified.

Member States are therefore invited to complement the cut-off criteria with appropriate R&D&I targets / criteria related to the feedback R&D and learning process during the FID phase in order to demonstrate that the IPCEI Communication's requirements for the public support of FID are complied with.

Member States are reminded to ensure an appropriate process of gathering information from the undertakings for the purposes of preparing their notification in order to avoid antitrust concerns and strategic information (within the meaning of Art.101 TFEU and the Horizontal guidelines) is not exchanged between competitors. It should be noted that R&D data may in certain circumstances qualify as strategic information (not to be shared between undertakings). For reference, an excerpt from the Horizontal Guidelines³:

"86. The exchange between competitors of strategic data, that is to say, data that reduces strategic uncertainty in the market, is more likely to be caught by Article 101 than exchanges of other types of information. Sharing of strategic data can give rise to restrictive effects on competition because it reduces the parties' decision-making independence by decreasing their incentives to compete. Strategic information can be related to prices (for example, actual prices, discounts, increases, reductions or rebates), customer lists, production costs, quantities, turnovers, sales, capacities, qualities, marketing plans, risks, investments, technologies and R&D programmes and their results. Generally, information related to prices and quantities is the most strategic, followed by information about costs and demand. However, if companies compete with regard to R&D it is the technology data that may be the most strategic for competition. The strategic usefulness of data also depends on its aggregation and age, as well as the market context and frequency of the exchange."

For example, such strategic data might be: expected feed-back R&D&I and its outcome, to be performed during the FID phase, companies' plans and expectations, company documents, production, marketing and sales activities, target cost of ownership, critical number of customers,

³ Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, JO C 11/1 of 14 January 2011

low/medium volume of production in comparison to mass production, critical number of wafer starts per customer per week/year, etc.

For further guidance on antitrust issues please refer to the relevant non-paper.