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Revision of the state aid rules for research and development and innovation

ISSUES PAPER

This document does not represent an official position of the European Commission. It is a tool to explore the views of interested parties. The suggestions contained in this document do not prejudge the form or content of any future proposal by the European Commission.

Executive summary

In the context of the envisaged modernisation of the EU State aid policy ("SAM"), the Commission will review the Community Framework for state aid for research and development and innovation ("the R&D&I Framework" or "the Framework") and the relevant provisions of the General Block Exemption Regulation ("the GBER"). In line with the Europe 2020 objectives, the review seeks to support sustainable growth and contribute to the quality of public spending by discouraging aid that does not bring real added-value and distorts competition. A key priority set out in the Europe 2020 Strategy is to reach a level of R&D investment corresponding to 3% of GDP, and one of its flagship initiatives is the Innovation Union.

The present Issues Paper identifies the most relevant areas for reflection in the revision of the R&D&I Framework and outlines possible orientations for the future rules in this field. The paper is *inter alia* based on comments received in the public consultation and will serve as a basis for discussion in a workshop between the Commission services, Member States and other stakeholders.

(i) Adjustment of scope

In order to sufficiently cater for smart, sustainable and inclusive growth in line with the Europe 2020 strategy, and to make use of the experience gained by the Commission and Member States under the present R&D&I Framework, certain adjustments to its scope would appear necessary.

Firstly, the Framework provides some guidance on the presence of state aid in typical R&D&I situations (economic/non-economic activities, R&D collaboration and contractual R&D). In order to increase legal certainty, this guidance could be expanded and, where relevant, updated on the basis of recent case-law and decisional practice.

Secondly, the R&D&I Framework allows for state aid promoting the establishment of infrastructures that do not qualify as innovation clusters only to the extent that the aided activity is itself an R&D&I activity. The scope of the Framework could thus be widened, including by providing general guidance on the existence of aid for research infrastructures which are publicly funded, and setting appropriate compatibility criteria for aid to the establishment of infrastructures enabling future R&D activities.

Thirdly, the Framework sets out a definition of "research organisation" that is instrumental in defining which entities may not qualify as undertakings, since their activities are non-economic. It appears that this definition could be applied to comparable entities such as technology/knowledge transfer agencies and innovation intermediaries. Moreover, there seems to be a need for further guidance for situations where a research organisation performs both economic and non-economic activities.

Fourthly, in order to encourage the use of aid for important projects of common European interest the compatibility criteria for such aid could be set out in more detail in the R&D&I Framework. As regards proportionality of aid, it could therefore be envisaged to rely exclusively on a "funding gap" approach, with no use of maximum aid intensities.

Finally, the rules and compatibility conditions concerning innovation aid and aid for demonstration and pilot projects could also be reviewed: in particular, innovation aid measures (or at least some of them) could be merged into a new category of small amounts of aid, whilst the requirement to deduct revenues from a subsequent commercial use of demonstration and pilot projects could be removed from the definition of "experimental development". Depending on the scope of a possible consolidation of innovation aid measures, the current provisions and definitions could moreover be widened and streamlined.

(ii) Improvement of general architecture

With the exception of two innovation aid measures, all types of measures allowed by the R&D&I Framework are already covered by the GBER and are thus exempted from the notification obligation, unless they concern aid amounts exceeding certain thresholds for individual notification. Following an amendment of the Enabling Regulation, also the remaining two categories of innovation aid could be covered by the GBER. In this context, and with a view to ensure that state aid control remains effectively focused on the potentially most harmful cases, individual notification could however be required for new R&D aid to "regular" beneficiaries as soon as the cumulated amounts of aids granted to such beneficiaries reach a certain threshold.

(iii) Better design of compatibility rules

The analysis of a potential market failure could be strengthened by making more use of sectoral comparisons. To simplify the assessment and allow for faster decisions, the presence or absence of a market failure could be presumed in certain situations (e.g. absence of market failure where a similar project is carried out without state aid).

Also the substantive assessment of the incentive effect could benefit from more industry-specific elements. With respect to the formal requirements, it could in principle be presumed that there is no incentive effect for aid to projects that have started before the granting of the aid by the national authorities.

With respect to proportionality, in line with the horizontal approach to be followed in other state aid guidelines, a net extra costs approach could be introduced explicitly in the substantive assessment. In the specific case of demonstration and pilot projects, this would mean in particular that the current requirement for the deduction from the eligible costs of revenues generated from a subsequent commercial use would become redundant. The proportionality analysis could moreover be improved by introducing guidance on the appropriateness of the main aid instruments to tackle specific market failures.

In addition, the R&D&I Framework provides for the possibility of granting higher aid intensities to match the aid amount received for similar projects by competitors located outside of the EU. Although the existing matching clause has never been used, or even invoked, it could seem suitable to maintain the current provisions in order to address actual or potential distortions of international trade.

Finally, the analysis of negative effects of aid could be improved by devising specific guidance as to possible, built-in remedies for reducing distortions on the product market through a better design of aid measures. Furthermore, the negative effects induced by location decisions attributable to aid could be more explicitly addressed.

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ISSUES PAPER

1. INTRODUCTION

The internal market has been a major driver of growth in the EU in the last decades and is probably the best asset for Europe to overcome the current economic and financial crisis. State aid control is a cornerstone of the EU's internal market, an indispensable instrument to ensure that national support policies are driven towards the common European interest without unduly distorting competition.

The role of state aid control is to prohibit "bad aid" that distorts competition, wastes scarce resources and fragments the internal market, and to promote "good aid" that supports structural change, promotes efficiency, encourages research, pushes towards a greener economy and maintains incentives and rewards for innovation in competitive, dynamic and more integrated markets. At the same time, by requiring that national aid policies be effective, efficient and non-distortive, state aid control promotes better quality public finances. It can thus be a smart and inexpensive tool for helping Member States to "achieve more with less". In assessing whether aid is "good" and therefore compatible with the internal market, the Commission considers its negative and positive effects, and may authorise the aid subject to certain conditions being met.

In this context, the Commission adopted on 8 May 2012 a Communication setting out an ambitious modernisation of EU state aid policy[1], aimed at orienting scarce public funds towards growth-enhancing initiatives. To this effect, the Commission proposes three operational objectives:

- redirecting state aid towards initiatives that can efficiently and effectively support the achievement of the Europe 2020 growth objectives;
- prioritising scrutiny of those types of state aid which are potentially the most harmful to the internal market;
- simplifying rules and procedures to ensure faster decisions.

With the State Aid Modernisation (SAM) the Commission intends to support Member States in their design of aid measures that contribute to open, dynamic and competitive markets and thus best support growth. A set of key assessment criteria of compatibility, should promote aid measures that are both effective and efficient.

First of all, for state aid to contribute to growth, it should address a material and well-identified market failure. Aid should be directed towards value-added activities that the market does not adequately supply. For example, state aid to R&D has the potential to promote new and otherwise unrealised innovative projects, especially where it increases (rather than replaces) private funding.

[1] COM(2012) 209 final of 8.5.2012.

State aid should moreover have an incentive effect. Too often still, aid is provided in part to firms that would probably have undertaken the aided activity in any case. This risk would appear to be particularly high with "footloose" investments, which can lead to detrimental subsidy races, as well as with fiscal incentives that, while being easier to administer than other measures, may subsidise firms' current expenses without e.g. spurring new R&D and innovation.

State aid should also be an appropriate instrument to reach the desired market outcome at the least cost, and must thus be limited to the minimum necessary for private investors to undertake the relevant project. State aid control may promote the lessening of the cost of the public intervention for example by requiring that, in the case of successful publicly-funded R&D projects, a part of the ensuing revenues is shared with the Member State.

Last but not least, state aid should not lead to undue distortions of competition in the internal market, since strong competition is a crucial factor for the market-driven stimulation of investment in R&D&I.

2. EXPERIENCE WITH THE FRAMEWORK AND PREPARATION OF THE REVISION

The Community Framework for state aid for research and development and innovation[2] (hereafter "the R&D&I Framework" or "the Framework") is in force since 1 January 2007 as the successor of two previous frameworks of 1986 and 1996, and will expire by end 2013. Compared to previous texts, the novelties of the Framework mainly consisted in extending its scope to specific innovation activities, clearer provisions on public funding of research organisations and on aid to collaborative R&D projects and, most importantly, an entire chapter dedicated to the detailed assessment of large individual aid measures. The Framework was thus the first application of the refined economic approach advocated by the 2005 State Aid Action Plan[3]. It moreover constituted an important step forward in terms of the scope for Member States to grant compatible R&D&I aid, especially as from August 2008 when most of its provisions were included in the General Block Exemption Regulation[4] (hereafter "the GBER").

On the basis of the Framework, the Commission has to date approved more than 200 aid schemes, as well as some 50 individual aid measures subject to detailed assessment. Moreover, it has monitored a total of around 420 individual measures exceeding EUR 3 million of aid without falling under the duty for individual notification (transparency cases). At the same time, more than 470 aid measures have been implemented by Member States under the GBER. In turn, this has translated into a steady increase in R&D&I aid over the years, with its total amounting to some EUR 10.9 billion or 0.09% of EU GDP in 2010 (including EUR 1.1 billion under block exempted measures), which corresponds to circa 18% of total aid for industry and services.

As a first preparatory step for the revision of the Framework, the Commission issued a mid-term review of its application on 10 August 2011[5], followed by a wide-ranging public consultation on 20 December 2011. The public consultation was closed by end February

[2] OJ C 323 of 30.12.2006.
[3] COM(2005) 107 final of 7.6.2005.
[4] OJ L 214 of 9.8.2008.
[5] http://ec.europa.eu/competition/state_aid/legislation/rdi_mid_term_review_en.pdf.

2012 and resulted in 92 responses from Member States (23 plus Norway), industry (44), aid granting authorities (14), research organisations (4) and other stakeholders (6)[6].

Based on the general feedback received, it seems that the Framework has well served its purpose of supporting investment in R&D&I. In particular, the vast majority of respondents believe that the current rules are sufficient to cater for the basic needs of fostering R&D activities, and are generally satisfied with the current approach for assessing large individual projects (the balancing test). However, stakeholders also consider there would be a significant number of aspects which need to be revised, streamlined and clarified if the Framework is to continue fulfilling its role in promoting "better" R&D&I aid.

Current evidence on the other hand shows that public expenditure in R&D&I is not always as justified and targeted as it could be: the incentive effect is sometimes missing, especially for fiscal measures; some firms are structurally dependent on the availability of aid to stay in the market, also making more difficult for new firms to enter and grow; distortions of competition and subsidy races in some industries may occur. Transparency is limited and public evaluation of effectiveness and impact of aid on the internal market insufficient, especially for schemes. Moreover, in a context of budgetary constraint it is important that public subsidies are used efficiently and effectively.

In the light of the SAM's objectives, these aspects, together with other topical subjects identified through case practice and internal monitoring exercises, need to be reflected in the revision process and provide the starting point for the present proposals, which are put forward merely as possible elements for further reflection without prejudice to any final decision[7].

3. POLICY DEVELOPMENTS

As a key driver to achieve the objectives of smart, sustainable and inclusive growth, R&D is at the centre of the Europe 2020 strategy[8]. As stated in the Europe 2020 communication, Europe needs to focus on the impact and composition of research spending and to improve the conditions for private sector R&D in the EU. The key issue is thus how Member States should intervene to reach the objective of investing 3% of the EU GDP in R&D, and what should be the role of state aid rules in this respect. The Europe 2020 communication makes an explicit reference to the role of state aid policy by considering that it can *"actively and positively contribute […] by prompting and supporting initiatives for more innovative, efficient and greener technologies, while facilitating access to public support for investment, risk capital and funding for research and development"*. This notwithstanding, it is important to stress that state aid is only one element of R&D policies and that it currently concerns only a limited subset (less than 1/8) of public R&D expenditure. Moreover, evidence exists that macroeconomic stability, the eco-system (i.e. the conditions that allow to maximise rewards from R&D investments, including the institutional framework and the judicial system), the degree of exposure to international competition, and the level of

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6 Whilst Denmark, Malta, Portugal and Slovenia did not answer to the public consultation, Belgium has submitted the position of the Wallonia region. Submissions from "industry" include answers provided by companies, professional associations, sectoral organisations and technological clusters, "aid granting authorities" include national and regional agencies, as well as sub-national public authorities, and "other stakeholders" include NGOs, law firms, consultants and private persons. All submissions are available at http://ec.europa.eu/competition/consultations/2012_stateaid_rdi/index_en.html.

7 For the present purposes, and unless indicated otherwise, all references to the R&D&I Framework should be understood as including the analogous provisions of the GBER.

8 COM(2010) 2020 final of 3.3.2010.

competition including the absence of entry and exit barriers, are even more important factors to promote private R&D&I than the use of public subsidies.

On 30 November 2011, the Commission adopted the Horizon 2020 package[9] with a budget of EUR 80 billion for investment in R&D&I to help boost new growth and jobs. The programme will run from 2014 to 2020 and focus on three key objectives:

- strengthening the EU's position as a world leader in science;
- strengthening industrial leadership in innovation, including major investment in key technologies;
- helping address major societal challenges across six key themes (health, demographic change and well-being; food security, sustainable agriculture, marine and maritime research and the bio-economy; secure, clean and efficient energy; smart, green and integrated transport; climate action, resource efficiency and raw materials; and inclusive, innovative and secure societies).

Horizon 2020 will in particular be the key instrument implementing the Innovation Union[10], which, together with the communication on "An integrated industrial policy for the globalization era"[11], appears to be the Europe 2020 flagship initiative of most relevance for the revision of the R&D&I Framework.

The revision of the R&D&I Framework needs to ensure that it sufficiently caters for Europe 2020 objectives, including with regard to areas such as the promotion of demonstration and pilot projects, R&D infrastructures, and certain innovation activities. Following the logic of state aid rules, support in these areas must be provided in a manner that enhances overall economic efficiency with the least possible distortion of competition and effect on trade between Member States.

4. ADJUSTING THE FRAMEWORK'S SCOPE AND DEFINITIONS

4.1. State aid in typical R&D&I situations

As to the concept of state aid, the R&D&I Framework provides firstly for a generic definition of economic activities, in line with general state aid principles and case-law ("offering of goods and/or services on a given market"). Secondly, it explains whether state aid is present in typical R&D situations, such as when publicly funded research organisations and innovation intermediaries collaborate with industry.

Answers to the public consultation show that in general, the explanations provided by the Framework were useful, but that there is a need for more precise provisions that can cover a wider range of situations. In practice, complaints concerning alleged state aid in typical R&D situations also show that there is scope for increasing legal certainty.

Regardless of whether the specificities of the legal concept of state aid in typical R&D&I situations will be expounded in a separate Communication on the notion of aid or retained in the future Framework, the **concept of "non-economic activity"** in the R&D field, as well as

[9] COM(2011) 808 final, COM(2011) 809 final, COM(2011) 810 final, COM(2011) 811 final and COM(2011) 812 final of 30.11.2011.
[10] COM(2010) 546 final of 6.10.2010.
[11] COM(2010) 614 final of 28.10.2010.

the potential non-economic character of technology transfer activities could be explained in a clearer and more comprehensive way, in order to provide a maximum of legal certainty. In this context, it would seem fitting to provide explicit confirmation that education organised within the national educational system funded and supervised by the State is considered as a non-economic activity, in line with the Communication on services of general economic interest (SGEI)[12], case-law[13] and decisional practice[14], as well as consolidated guidance on the non-economic character of technology/knowledge transfer activities, which is currently included in both the main text of the Framework and unconnected footnotes. Such guidance could be used to identifying the possible economic character of technology/knowledge transfers but would however not allow any conclusion as to possible advantages to the recipient of such technology/knowledge.

In particular, the Framework should explain more clearly that any technology/knowledge transfer that is presumed as non-economic and is conducted by research organisations should concern technologies created by the transferring research organisation or by collaborating research organisations, within its/their primary non-economic activities, and that such transfer should be non-exclusive so that it corresponds with such organisation's primary objective of knowledge dissemination.

Analogous conditions could be established for the presumption of non-economic activities pursued in and with research infrastructures owned by research organisations (notwithstanding operation by a party that does not receive any advantage or by another research organisation). Such conditions should stipulate that the purpose and activities of the infrastructure concerned must be within the research organisation's field of activity (e.g. as set out in its mission, statutes, national legal basis), and that such infrastructure must be predominantly used for the research organisation's primary objectives including collaborative R&D. When undertakings may use the infrastructure, access must be granted on a non-exclusive basis.

At the same time, the borderline between provision of R&D services (contract research) and **R&D collaboration** should be delineated more precisely, in order to provide legal certainty and prevent the labelling of service arrangements as "collaborative". In particular, it could be considered to develop a definition of "collaborative R&D" requiring an adequate sharing of risks, as well as an adequate level of influence on the project. Such definition could take into account existing recommendations[15] and reflect more explicitly that collaborative R&D will typically be longer-term and more open-ended than R&D services, which normally involve a straightforward agreement to complete a well-defined task. At the same time, it could be explicitly required that the terms and conditions of a collaboration project, in particular as regards contributions to its costs, the sharing of risks and outcomes, the dissemination of results, allocation of intellectual property rights (IPR) and rights of first

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12 Section 2.1.5 of the SGEI Communication, with reference to sections 3.1.1 and 3.1.2 of the R&D&I Framework, OJ C 8 of 11.1.2012.

13 Judgment of the Court of 27.9.1988 in case C-263/1986, *Humble and Edel*, [1988] ECR p. 5365, points 9-10 and 15-18.

14 E.g. cases NN 54/2006, *Přerov logistics College* and N 343/2008, *Individual aid to the College of Nyíregyháza for the development of the Partium Knowledge Centre*.

15 E.g. European University Association et. al, *"Responsible Partnering – Guidelines for Collaborative research and Knowledge Transfer between Science and Industry"*, version 1.1, October 2009 (http://www.eua.be/Libraries/Publications_homepage_list/Responsible_Partnering_Guidelines_09.sflb.ashx) and Commission Recommendation on the management of intellectual property in knowledge transfer activities and Code of Practice for universities and other public research organisations, C(2008)1329 of 10.4.2008.

refusal, must be concluded prior to the start of the project, so that its risks/benefits cannot be allocated retroactively, to the advantage of industry.

The current difficulties in applying the concepts of **"market price"** or price that reflects "full costs plus a reasonable margin" in cases where a project is carried out by a research organisation on behalf of an undertaking, especially when they refer to one-off transactions for unique services, could be reduced by clarifying the notion of " reasonable margin". To this effect, use could be made of e.g. industrial benchmarks or top-ups on full costs of at least *[5]*% if economically justified, account being taken of the approach retained in the framework of Horizon 2020, in particular as regards the use of overhead flat rates and the method applicable in the absence of analytical accounting.

Regarding in particular the determination of a market price for IPR resulting from collaborative R&D, it would seem possible to presume this to be ensured in the case of a public, open and transparent competitive sale procedure, failing which a confirmation by an independent expert valuation could be sought. Alternatively, a market price could also be assumed when the research organisation can document that it effectively negotiated IPR in order to obtain the highest possible economic benefit, in consideration of its overall objectives[16].

Provisions could also be made to allow a right of first refusal for the collaborating undertaking(s) as regards IPR generated by (the) collaborating research organisation(s)[17] if such right is combined with the research organisation's right to solicit better offers so that the undertaking(s) would have to match its/their offer(s) accordingly. Such mechanism, to be assessed individually, could also be a transparent method for determining the market price and either avoiding or quantifying the advantage at the level of the undertaking(s) concerned.

Moreover, the conditions for excluding state aid through pre-commercial procurement (or "innovation procurement") of products and services could be detailed on the basis of the Commission's communication on pre-commercial procurement[18].

Possible line of reform:

Provide additional clarifications on the concept of "non-economic activities", including with regard to technology/knowledge transfers and the operation of research infrastructures owned by research organisations.

Develop a definition of "collaborative R&D", including critical terms and conditions of a collaboration project.

Possibly develop guidance as to what is considered a "reasonable margin" on top of full costs, and introduce criteria for the establishment of a market price for IPR.

Elaborate the presumption of absence of aid in R&D collaborations where transparent arrangements are in place for determining the market price of IPR.

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16 See case NN 68/2010, *Alleged State aid through a software-licensing agreement between Technical University Delft and Delftship B.V.*.

17 Such possibility is not covered by the current Framework's presumption of absence of aid, and hence is to be considered as an advantage to the concerned undertaking (e.g. case NN 65/2007, *Ludwig Boltzmann Institut für Krebsforschung*).

18 COM(2007) 799 final of 14.12.2007.

Possibly recall criteria for excluding the presence of state aid in pre-commercial procurement (or "innovation procurement)".

4.2. R&D infrastructures

The scope of aid for the establishment of R&D infrastructures, which are an essential building block of the Europe 2020 strategy, is currently limited to situations where either the development of the infrastructure itself constitutes an R&D activity or the aid is provided for innovation clusters, which points to the need to widen the scope of the Framework in order to sufficiently cater for e.g. the development of dual-use (economic and non-economic) research infrastructures.

Answers to the public consultation confirm firstly that the provision of, and investment in research infrastructures is an important policy objective for Member States, and secondly that publicly funded R&D infrastructures are used mainly for the following activities: independent research with a view to a wide dissemination of R&D results; collaborative research with undertakings, where results are shared by all partners; and contract research on behalf of undertakings, who typically own all IPR. At the same time, the public consultation has also shown that many Member States tend to incorrectly consider R&D infrastructure support as inherently free of state aid.

Without prejudging on the future Communication on the notion of aid, the specific features of R&D infrastructures, e.g. as defined by the ERIC Regulation[19], could in principle be addressed in the revised Framework.

As a general rule, to the extent that R&D infrastructures may be used for both economic and non-economic activities (even if the former are sometimes considered only at a relatively later stage, once the infrastructure has been built), both type of activities should continue to be clearly identifiable and separable, on the basis of analytical accounting methods and in line with the approach laid down in the current Framework to exclude potential cross-subsidisation of economic activities through public funding of non-economic ones.

In the specific case of **dual-use research infrastructures**, use could however be made of the criteria laid down in the "Infrastructure analytical grid n° 6 – research, development and innovation" annexed to a joint letter from Directorate-Generals Competition and Regional and Urban Policy to Member States[20]. In particular, it could thus be clarified that, subject to the fulfilment of a number of additional requirements, public funding of a research infrastructure needs not be notified for state aid clearance when the economic activities resulting from the use of such infrastructure remain ancillary in nature, i.e. are directly related and necessary for its operation or intrinsically linked with its main activity of independent research.

At the same time, it could also be made clear that normal state aid rules apply to all other cases of public funding for the construction and operation of research infrastructures, which will therefore be assessed with regard to their potential contribution to an objective of

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19 *"[F]acilities, resources and related services that are used by the scientific community to conduct top-level research in their respective fields and covers major scientific equipment or set of instruments; knowledge-based resources such as collections, archives or structured scientific information; enabling Information and Communication Technology-based infrastructures such as Grid, computing, software and communication, or any other entity of a unique nature essential to achieve excellence in research. Such infrastructures may be 'single-sited' or 'distributed' (an organised network of resources)"*, Council Regulation (EC) N° 723/2009 of 25.6.2009, OJ L 206 of 8.8.2009.

20 Ref. Ares(2012)934142 of 1.8.2012.

common interest and in the light of the specific market failure that they intend to address[21]. In this context, it could in particular be considered to allow aid for the construction of such infrastructures up to the amount that would otherwise be acceptable for subsequent R&D activities (e.g. industrial research or experimental development). Without prejudice to the possible definition of specific compatibility criteria, this could be sought for instance when the Member State concerned can provide a medium-term (e.g. 6 years) activity planning, and makes use of an appropriate aid instrument (e.g. loan or claw-back mechanism) in order to limit the aid to the minimum necessary.

Possible line of reform:

Possibly provide a definition of R&D infrastructures, and clarify rules applicable for dual-use infrastructures, in particular when economic activities remain ancillary in nature.

Provide for compatibility criteria applicable to aid for the establishment of research infrastructures that enable future R&D activities.

4.3. Research organisations

The current rules provide for a definition of research organisations[22], which is instrumental in defining which entities might not qualify as "undertakings" and therefore not fall under the scope of state aid control and largely revolves around categorising their main and "primary activities" as non-economic. At the same time, such definition is also instrumental in identifying e.g. collaborative R&D projects that are eligible for a bonus over basic aid intensities[23]. This notwithstanding, contributions submitted to the public consultation, as well as case practice and feedback received from stakeholders since the entry into force of the Framework suggest that the current definition and, more generally, provisions relating to research organisations would merit being reconsidered and further clarified.

Firstly, the **definition of "research organisation"** could be clarified in order to explicitly include comparable entities such as technology transfer agencies and innovation intermediaries, to the extent that their primary activities are predominantly non-economic and relate to the general dissemination of knowledge to which no undertakings have preferential access. In this context, it could moreover be clarified that when a research organisation provides R&D services to other research organisations with a view to the pursuit of non-economic activities, such provision is also to be considered as a non-economic activity.

Secondly, as is also the case for R&D infrastructures, many research organisations are at least to some extent depending on economic activities. Although nothing precludes a research organisation from pursuing economic activities and still comply with the Framework's definition, the present rules do not provide any guidance as to the extent of such activities beyond which an entity would lose its "research organisation" status[24]. It could therefore be envisaged to develop **safeguards** ensuring that any economic activities remain limited and contribute to general dissemination of knowledge, possibly accompanied by guidance on regular monitoring of compliance with the applicable definition, as well as

[21] At present, aid for research infrastructures that does not fall under the scope of the Framework (i.e. that does not constitute aid for a R&D project or innovation cluster) may be assessed on the basis of e.g. rules applying to national regional aid or directly under the Treaty.

[22] Section 2.2(d) of the R&D&I Framework.

[23] Section 5.1.3, paragraph (b)(ii) of the R&D&I Framework.

[24] See case C 35/2008, *State aid granted by France to the Institut Français du Pétrole*.

on measures to be taken in order to avoid the future predominance of economic activities (e.g. through spinning off)[25].

Moreover, the Framework clarifies that research organisations in principle benefit from state aid where they use public funding for their economic activities (such as supplying services to undertakings or engaging in contract research) but does not explain how research organisations would be treated in such cases. In this regard, it could be considered to make clear that any (investment or operating) aid for economic activities performed by research organisations is to be assessed under normal state aid rules, as is the case for final recipients of aid.

Finally, the Framework also identifies conditions under which there would be no state aid at the level of research organisations when they carry out economic activities (i.e. full passing on of the public funding to final users without any advantage to the research organisations)[26]. Such conditions would also merit being further detailed.

Possible line of reform:

Explicitly apply the definition of research organisations to comparable entities such as technology/knowledge transfer agencies and innovation intermediaries.

Possibly develop guidance on the maintenance of "research organisation" status in situations where both non-economic and economic activities are pursued, and include a reference to the compatibility assessment at the level of the research organisation.

4.4. Important projects of common European interest

The R&D&I Framework contains an explicit provision for aid to promote important projects of common European interest, on the grounds of Article 107(3)(b) TFEU. However, this provision has not been applied since the adoption of the Framework. In the public consultation, a number of stakeholders (mostly from industry) have therefore pleaded for a clearer approach to such projects, in particular those characterised by extensive industrial collaboration at a European scale, and absence of significant intra-EU competition and worldwide markets.

The current definition of an important project of common European interest[27], which may cover certain R&D projects as well as large R&D infrastructures, remains largely valid and does not seem to require any major adaptation.

As for their compatibility assessment, it can be argued that the necessary conditions to be met for being considered as "important projects of common European interest" will to a large extent ensure that aid for such projects effectively contributes to a common objective and addresses a real market failure. The demonstration of the incentive effect, appropriateness and proportionality of the aid would nevertheless remain key elements of the compatibility analysis, in the same way as under Article 107(3)(c). As regards proportionality in particular, it could nevertheless be envisaged to rely exclusively on a **"funding gap" approach** (in the meaning of limiting the aid to the amount strictly necessary to ensure an appropriate rate of return on investment), with no use of maximum

[25] In all cases, economic and non-economic activities would however need to continue being distinguished, and their costs and funding accounted for separately.

[26] Section 3.1.2 of the R&D&I Framework.

[27] Section 4 of the R&D&I Framework.

aid intensities. Subject to a case-by-case assessment, aid for important projects of common European interest would thus be authorised up to the level that proves necessary to overcome the proved market failures and uncertainties that hinder the deployment of such large-scale, cross-border projects, even if such level of aid would be above the maximum aid intensities otherwise allowed under the Framework.

Finally, it might be argued that the definition (or eligibility criteria) of such projects ensure to some extent that the negative effects of aid will be limited. However, depending on the specificities of each case it may be required to look more closely at distortions on the product market (e.g. in particular if beneficiaries are large players) as well as to any conditions attached to the granting of aid (such as openness and dissemination of results) that could alleviate concerns in that respect.

Possible line of reform:

Further detail the compatibility criteria for important projects of common European interest in the light of the principles applied under Article 107(3)(c), whilst explicitly basing the determination of applicable aid intensities on a "funding gap" analysis.

4.5. Other issues[28]

Amongst other issues, and subject to clarifications to be provided in other legal texts, it could be considered to give further guidance on how to determine the aid element stemming from the use of different aid instruments, such as equity investments, guarantees and repayable advances. The feasibility of usefully establishing a gross grant equivalent for e.g. repayable advances would however be contingent on the identification of a straightforward market-conform comparator.

Moreover, it would also seem appropriate to clearly expurgate the current definitions from any elements that are rather related to the establishment of compatibility conditions, in particular by defining "experimental development" activities without any reference to conditions referring to the subsequent commercial use of prototypes and pilot projects. At the same time, the current definitions of "fundamental research", "industrial research" and "experimental developmental" could be explicitly linked to the widely-used technological readiness levels (TRL) industrial categories[29].

5. GENERAL ARCHITECTURE OF THE RULES

Subject to compliance with the conditions laid down therein, the GBER exempted from the prior notification requirement the following categories of aid:

- aid for research and development projects;
- aid for technical feasibility studies;
- aid for IPR costs for SMEs;
- aid to young innovative enterprises;

[28] Possible changes in relation to innovation measures are discussed under section 7 below.

[29] E.g. by relying on a simpler differentiation between fundamental research (TRL 1), applied research (TRL 2-5) and demonstration projects (TRL 6-8).

- aid for innovation advisory services and for innovation support services;
- aid for the loan of highly qualified personnel;
- aid for research and development in the agricultural and fisheries sectors.

However, aid still needs to be notified above certain individual thresholds (e.g. EUR 7.5 million for experimental development), as well as for process and organisational innovation in services, and for innovation clusters.

According to answers received to the public consultation, the allowed aid intensities are generally perceived as appropriate. On the other hand, some Member States pointed to the need for a better alignment between conditions laid down in the Framework and the GBER (e.g. on eligible costs), and suggested enlarging the scope of application of the latter.

In this respect, it has however to be noticed that the possible **inclusion of new categories of aid in the GBER**, in particular innovation measures for large enterprises (e.g. for process and organisational innovation and for innovation clusters) will require a previous modification of the Enabling Regulation[30] which is expected to take place only at a later stage. At the same time, any increase of the current notification thresholds and/or inclusion of additional aid categories in the GBER should be accompanied by a move towards stricter control and better compliance at national level if they are to contribute to increasingly focus state aid control on the potentially most harmful cases whilst reducing the administrative burden on Member States. In this respect, it could for instance be envisaged to require individual notification of any new R&D aid to **"regular" beneficiaries** as soon as the cumulated amount of such aid granted to those beneficiaries reaches a certain threshold over a specified period of time, to verify the cumulative impact on competition and avoid aid dependency.

In principle, aid measures covered by the GBER would moreover not be included in the revised Framework, which would in this regard be limited to laying down the key compatibility criteria for a substantive assessment of large amounts of aid.

Possible line of reform:

Clearly separate the scope of the R&D&I Framework and of the GBER, so that the former only applies to individual aids that are subject to a substantive assessment (and, temporarily, to innovation measures that cannot be block-exempted).

Possibly provide for closer examination of the cumulative impact of aid to the same beneficiary.

6. KEY COMPATIBILITY CRITERIA FOR R&D PROJECTS

A key pillar of SAM is the identification and definition of common principles, or key compatibility criteria applicable to the assessment of all aid measures. Such horizontal principles will clarify how the Commission is to assess common features across the different guidelines and frameworks, and need be clearly aligned with the Europe 2020 growth strategy. To this effect, it will be crucial to ensure that state aid contributes to an objective of

[30] Council Regulation (EC) N° 994/98 of 7.5.1998, OJ L 142 of 14.5.1998.

common interest and has a clear incentive effect (no waste of money) without any unduly negative effects on competition.

At present, state aid for R&D&I can be declared compatible with the internal market where it addresses a market failure and proves necessary to increase R&D&I activities, provided that the ensuing distortion of competition and effect on trade are not contrary to the common interest. The underlying compatibility assessment is currently formalised as a "balancing test" comprising three steps:

- is the aid measure aimed at a well-defined objective of common interest?
- is the aid well designed to deliver the objective of common interest, i.e. does the proposed aid address the market failure or other objective?
  (i) is state aid an appropriate policy instrument?
  (ii) is there an incentive effect, i.e. does the aid change the behaviour of firms?
  (iii) is the aid measure proportional, i.e. could the same change in behaviour be obtained with less aid?
- are the distortions of competition and effect on trade limited, so that the overall balance is positive?

While the principles used in the current Framework remain valid, the new proposed, more proportionate assessment of aid subject to individual notification[31] will be structured differently and can represent a leap forward compared to the present approach, in particular by relying more explicitly on a series of principles that will act as necessary conditions ("filters"): if they are not met, this would in principle lead the Commission to conclude on the incompatibility of the aid following an opening of the formal investigation procedure. A balancing of the positive effects of the aid in terms of contribution to the objective of common interest, and of its negative effects on competition and trade would be undertaken only once all necessary conditions are met.

6.1. Objective of common interest and market failure

The R&D&I Framework defines the objective of common interest as promoting research and development and innovation in the EU. It aims at enhancing economic efficiency by tackling well defined market failures, in particular imperfect and asymmetric information, knowledge spillovers and coordination failures, which hamper the delivery of R&D&I.

Identifying the objective of common interest has not proven difficult in the case practice. However, the demonstration of the existence of a market failure has generated some difficulties, while it has proven of upmost importance. Indeed, the presence of a market failure is not only a necessary condition for approving aid, as its nature and magnitude should also frame the way Member States structure their interventions[32].

[31] Section 7 of the R&D&I Framework.

[32] For example, in the case of a coordination failure the aid should be limited to providing the necessary stimulus to collaboration between e.g. a heterogeneous group of companies, thereby leading them to effectively participate in a specific R&D project and share its risks and benefits; however, in such cases the analysis of the incentive effect at the level of the main beneficiary has to take into account this

In the revised Framework, the same two principles (contribution to an objective of common interest and presence of a market failure) will be necessary conditions to be met.

6.1.1. Demonstration of a market failure

As mentioned above, the R&D&I Framework identifies three main market failures that could typically be of relevance. This notwithstanding, it has to be demonstrated in each case that state aid addresses an actual market failure: for example, the fact that an activity has positive effects (externalities) which are not fully appropriated by market participants does not automatically lead to the conclusion that there is a market failure (in the form of knowledge spillovers). It is only where the Member State demonstrates that those elements affect a project's profitability to such extent that it would not be undertaken (neither by the firm in question nor by another firm), that there can be question of market failure.

In general, Member States should therefore be encouraged to rely on **sectoral comparison**s (possibly with benchmarks) as a means to possibly identify a concrete market failure. For example, coordination failures could be more easily established if it is shown that collaboration is usually absent in a particular field or industry.

6.1.2. Presumption of absence/presence of a market failure

Where a given R&D project leads to duplication of research it is unlikely that aid increases efficiency by addressing a specific market failure: in particular, if similar projects are being undertaken in the market without the support of state aid, this is normally a strong indicator that the aid does not address a market failure. In situations where there are material and objective differences between the project in question and similar projects undertaken by the market in the absence of aid[33] (or where the aided project provides significant incremental benefits), the presence of a market failure may however not be excluded *a priori* and could therefore be assessed in detail, on the basis of independent technical expertise and sectoral comparisons provided by the Member State.

On the other hand, to the extent that the relevant selection process takes their contribution to an objective of common interest and the need to address a market failure into account, it would seem possible to consider that aid granted to projects directly financed by the EU under centralised management, e.g. supported under Horizon 2020 or undertaken in the context of the ENIAC and ARTEMIS Joint Undertakings[34], effectively address a well-identified market failure[35].

Possible line of reform:

Encourage further reliance on sectoral comparisons (e.g. benchmarks).

Introduce a rebuttable presumption of absence of a market failure where there are similar projects in the market, which have been or are being undertaken without aid.

heterogeneity, and a simple look at profitability elements may not provide an accurate picture of the positive effects of the aid.

33 Similarity between projects must be assessed in the light of the objective pursued and may therefore be understood either in terms of final outcome of a R&D project or in terms of the relevant research path.

34 Respectively, Council Regulations (EC) N° 72/2008 and 74/2008 of 20.12.2007, OJ L 30 of 4.2.2008.

35 Projects financed with EU resources that are invested by the Member States exercising their own discretion (such as under the EU Structural Funds) would however not benefit from such presumption.

Introduce a presumption of presence of a market failure for aid granted to projects directly financed by the EU under centralised management.

6.2. Incentive effect

Under the current R&D&I Framework, the incentive effect is a central element of the balancing test. The requirements for its demonstration however vary with the aid amount and/or size of the beneficiary. For smaller amounts (below the individual notification threshold), the demonstration of the incentive effect is of a rather formal nature for SMEs, i.e. the incentive effect is presumed if the aid application takes place before the start of works, whilst for large companies a verification based on a set of indicators (increase in scope, speed, size, amount spent) is warranted. For larger aid amounts (above the individual notification threshold), a substantive analysis is moreover carried out, which mainly relies on the identification of a counterfactual scenario, the evaluation of the profitability of the envisaged project, and the assessment of its risks.

Under the revised rules, the demonstration of the incentive effect of the aid will remain a central and necessary compatibility condition. In that respect, the relevance of the current formal criterion will be examined. Also, the type of information needed for the substantive demonstration of the incentive will be revised to ensure that it strikes the right balance between the need to cater for sector-specific conditions and the need to ensure an objective and coherent assessment across cases.

6.2.1. Formal criterion

The current formal criterion for demonstrating the incentive effect mainly raises the question of whether requiring that the aid application occurs before the start of the works is sufficient to presume the incentive effect of those aids that will not be subject to a substantive assessment: it can indeed be argued that aid cannot be deemed to change the behaviour of a company (i.e. having an incentive effect) if such company actually starts working on an R&D project before having received confirmation that it will benefit from state aid. In this respect, it therefore seems preferable to require that the works on the aided project do not start before the decision by the relevant public authority to grant the aid[36].

In addition, in the application form[37], the aid beneficiary should provide information on the project and on what would have happened in the absence of aid. For large enterprises, documentary evidence should be provided to the granting authority, which should carry out a credibility check.

In the specific case of automatic fiscal aid schemes, where in the absence of a formal aid granting decision the "start of works" criterion cannot be applied, it could in particular be clarified that, in absence of independent evaluation studies[38], the incentive effect can only be presumed for incremental measures which, as opposed to volume-based or mixed ones, only relate to expenditures incurred over a specific baseline in order to encourage an increase in R&D&I activities.

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[36] The "granting of the aid" means the decision by which the public authority commits to the disbursement of the aid, if need be subject to the Commission's approval.

[37] To this purpose, the GBER would include a standard application form to be filled in by all beneficiaries of block exempted schemes.

[38] Section 5.1.6 of the R&D&I Framework.

Possible line of reform:

Strengthen the formal requirements in order to presume that aid has an incentive effect, by requiring that the project does not start before the aid granting decision.

6.2.2. Substantive analysis of the incentive effect

Insofar as a credible counterfactual (including its absence) can be identified, the profitability of the R&D project becomes a central element in the substantive analysis of the incentive effect of the aid, especially when the identified market failure is asymmetry of information (e.g. non availability of funding from the market). In practice, the projects' internal rate of return (IRR) and net present value (NPV) have been the indicators most frequently used in assessing profitability, albeit regularly complemented by other criteria since profitability indicators are often not used by companies in their internal evaluation of alternative R&D projects. In this context, technological risks have in particular been taken into account either by incorporating a risk premium into the WACC of the aid beneficiary or using its standard WACC associated with probability scenarios, preferably benchmarked by historical data (using high level of occurrences and reasonable assumptions).

When assessing the profitability of a R&D project it would moreover be useful to devise guidance on the degree of importance to be ascribed to factors such as its IRR and NPV (e.g. as compared to more qualitative information), the importance of the aid as a risk-sharing cushion (especially when significant up-front investments create liquidity pressures at an early stage of the project), the relevance of individual strategies and idiosyncrasies (e.g. when a beneficiary absolutely excludes financing a specific project through equity in spite of having the means to do it) or the strategic implications of postponing an otherwise necessary development.

To the extent that the analysis of the incentive effect aims at ascertaining whether state aid changes the behaviour of a given company, its specific constraints and business models need to continue being reflected in the analysis, including through a plausibility check of the assumptions used in the business plans (based on e.g. internal documents). However, a company's financial choices (e.g. with regard to maintaining a certain liquidity buffer or limiting exposure to high-risk R&D investments) and strategic orientation are better understood in the light of **common practice** in the relevant industry. With a view to ensuring the right balance between taking into account the specificities of a company and the need to establish the existence of an incentive effect on an objective basis, and in the absence of any operational test to determine the private value of a R&D project, it would therefore seem particularly important to obtain appropriate information (including representative financial indicators) on the sector in which the aid beneficiary is active.

Possible line of reform:

Require supporting the substantive analysis of the incentive effect with company-specific but also industry-specific elements.

6.3. Proportionality and appropriateness of the aid

The analysis of the proportionality and appropriateness of the aid, including its limitation to the minimum necessary, mainly rests on two elements: determination of the eligible costs and consideration of the aid instrument (not only compared to non-state aid means, but also with regard to other aid instruments).

6.3.1. Proportionality

With respect to proportionality, the R&D&I Framework defines the eligible costs and the maximum aid intensities beyond which aid is generally considered as not being proportional, differentiated according to the nature of the research to be undertaken[39]. In the context of a substantive (or detailed) assessment of R&D projects, such aid intensities currently act as a cap, but are not sufficient to ensure that aid is minimised to what is strictly necessary for the beneficiary to overcome the market failure in question and undertake the aided project. Whilst the fact that the aid intensity has been set below the maximum allowable levels and that an appropriate aid instrument has been envisaged have in practice been regarded as positive elements in this respect, ensuring that the aid amount is limited to the minimum, which incidentally is of utmost importance to ensure a better use of public resources, has until now been sought *inter alia* by an analysis of the beneficiary's business plan.

As case practice has shown, in order to ensure that aid is limited to the minimum necessary, the analysis of the proportionality of aid needs however to be more closely linked to the assessment of its incentive effect, so that it is only the actual increase in the level of R&D activities that is supported, as opposed to the entire R&D project. In practice, this means that the project should be compared with a realistic counterfactual (account being taken not only of their respective costs, but also benefits and risks) over its lifetime, taking into account the industry and market practice, and that only **net extra costs** would be eligible for aid.

A net extra costs approach is in particular warranted when there is a clear overlap between the aided project and the counterfactual (e.g. when there is a choice between undertaking a specific project with or without a specific feature or work package, or when the aid merely leads to speeding up its completion), or when the beneficiary company faces a clear choice between undertaking an aided project and undertaking an alternative one without aid. In such cases, the aid should be limited to the amount needed to ensure that the expected profitability of the project matches the expected profitability of its counterfactual, or that the beneficiary's financial exposure is reduced to the one incurred under the counterfactual.

For other cases (e.g. where the counterfactual project would be of a different nature than the aided project or where the counterfactual is that no project would be carried out), an alternative approach could be to compare the project's expected return with the company's WACC or a representative hurdle rate[40]. In such cases, aid would only be allowed up to the amount necessary to make the project profitable (above WACC or hurdle rate, taking into account its risks)[41].

Possible line of reform:

Introduce an explicit net extra costs approach for aid which is subject to a substantive assessment.

[39] E.g. lower aid intensities apply for projects that are closer to the market, whilst bonuses are foreseen for SMEs and collaborative research.

[40] To the extent that the beneficiary company's WACC largely depends from its equity/debt ratio, the use of a representative hurdle rate (i.e. the minimum return a company/sector would expect for similar projects) would have the advantage of not being determined by the aid beneficiary itself.

[41] The traditional approach of limiting the aid to a maximum percentage of total eligible costs would remain applicable as such for all cases not requiring a substantive assessment (below the notification threshold), whilst continuing to act as a cap for aid subject to a substantive assessment.

6.3.2. Appropriate aid instrument

Under the current rules for substantive assessment, it needs to be established whether state aid for a R&D project is an appropriate instrument, or whether the same increase in the level of R&D could have been achieved through other, less distortive means (e.g. regulation or general tax measures). As mentioned above, in its analysis of proportionality, the Commission however also considers, as a positive element, whether the envisaged aid instrument is *per se* appropriate.

As has been confirmed in the public consultation, Member States most commonly use grants or tax incentives to support R&D&I. Although such instruments seem to be appropriate in a large number of cases, they may not the most suitable for all types of situations. The use of an appropriate aid instrument in order to correct a certain type of market failure, and the justification advanced by the Member State for its specific choice could become an explicit requirement in the substantive assessment of aid. In this respect, more guidance on the use of different state aid instruments could be introduced in the revised Framework. This guidance should in principle take into account the type of market failure to be addressed (and its impact on e.g. risks, liquidity and profitability) as well as the type of research at stake[42], and would signal which instruments are able to ensure the achievement of the objective at the least cost.

Possible line of reform:

Provide guidance on the appropriateness of the use of the main aid instruments (grants, loans, repayable advances) in order to address a specific market failure.

6.3.3. Demonstration and pilot projects

Contrary to its predecessors, the current Framework already allows for aid to demonstration and pilot projects, which the Commission has so far assessed in particular in the field of green energy technology. In line with the applicable definition of experimental development, it is currently nonetheless required that any revenues stemming from the subsequent commercial use of a demonstration or pilot project be deducted *ex ante* from its eligible costs[43].

In the public consultation, a significant number of stakeholders considered that the present rules may not sufficiently take into account the particularities of those breakthrough technologies addressing major societal challenges, which usually require a high degree of collaboration between different types of actors from several Member States, and pointed to the need to counter the tendency towards a decline in the industrial deployment of cutting-edge innovations in the EU that has been identified *inter alia* in the 2011 Innovation Union Scoreboard[44].

In this respect, a clear separation of definitions and compatibility conditions, together with the possible wider use of TRL industrial categories and the explicit introduction of a net extra costs approach (as envisaged under sections 4.5 and 6.3.1 above) would appear to sufficiently cater for concerns raised by stakeholders and ensure that the substantive

[42] For example, a grant could be deemed appropriate for fundamental research where the risks are particularly high with no prospects of revenues, whilst for experimental development a repayable advance might be more appropriate.

[43] Section 2.2(g), second paragraph, of the R&D&I Framework.

[44] http://ec.europa.eu/enterprise/policies/innovation/files/ius-2011_en.pdf.

assessment of the proportionality and appropriateness of aid for demonstration and pilot projects is conducted in an apposite manner: in particular, to the extent that any expected revenues from such projects will explicitly be accounted for in the relevant business plans, there seems to be no need to continue requiring them to be deducted from the eligible costs[45]. At most, in view of the uncertainties that usually characterise the prospective industrial deployment of demonstration and pilot projects, it could eventually be envisaged to complement the net extra costs approach by encouraging the setting-up of appropriate claw-back or reimbursement mechanisms, ensuring that financial gains from an unexpected positive deviation between actual and forecasted commercial revenues is shared with the Member State.

In order to ensure that demonstration or pilot projects are not actually developed mainly for productive purposes with very limited levels of R&D, it could moreover be considered to require that those projects be characterised by a sufficient level of novelty and possibly are "first of a kind"[46].

Possible line of reform:

Clearly separate definitions and compatibility conditions by abandoning the requirement for *ex ante* deduction of revenues from the eligible costs of demonstration and pilot projects.

Possibly complement the net extra costs approach by an *ex post* mechanism that takes into account the actual profitability of demonstration and pilot projects.

6.3.4. International dimension

Distortions of international trade and competition due to subsidies granted outside the EU are addressed by the current Framework's "matching clause"[47]. Pursuant to that clause, aid for R&D projects may exceed the otherwise permitted ceilings if competitors located outside the EU receive aid of an equivalent intensity for similar activities.

The R&D&I Framework is the only secondary state aid law that contains such clause. It has to date never been invoked, neither under the current Framework nor under the preceding Framework of 1996, where it had been introduced for the first time. Although this element cannot in itself be seen as a clear indication of the redundancy of the matching clause, expert reports also suggest that state subsidies are not a determining factor for location decisions[48].

In the context of the public consultation, some respondents have however underlined the potential importance of the matching clause as an instrument to underpin EU's global competitiveness, and pointed to some of its possible shortcomings: in general, the standard of proof allegedly required is considered too difficult to meet, mainly due to the confidential

[45] For aid that is not subject to a substantive assessment (e.g. granted under the GBER and remaining below notification thresholds) the period during which revenues from the subsequent commercial use of demonstration and pilot projects have to be taken into account could be limited to e.g. five years.

[46] A possibility would be to develop an approach comparable to the one currently used under section 3.2.1 of the Framework on state aid for shipbuilding (OJ C 364 of 14.12.2011), whereby aid is limited to "*the industrial application of innovative products and processes, that is to say, technologically new or substantially improved products and processes when compared to the state of the art that exists in the Union, which carry a risk of technological or industrial failure*".

[47] Section 5.1.7 of the R&D&I Framework.

[48] E.g. OECD, *"Government R&D funding and company behaviour – measuring behavioural additionality"*, 2006. To the extent that R&D&I activities are arguably subject to different location considerations than manufacturing activities (or productive investment in general), the practical reach of the matching clause for R&D projects should normally be quite limited.

nature of the information requested (non-disclosure clauses in third-countries' aid agreements). With the aim to facilitate meeting such standard of proof, some stakeholders therefore advocated the establishment of a monitoring system (or "observatory") run by the Commission, to collect data on global markets and trade, on state subsidies granted abroad, and on the potential necessity to apply the matching clause in certain sectors.

In this regard, it can first of all be noticed that the current wording of the matching clause does not impose any specific conditions or practical limitations. Indeed, to successfully invoke the clause, the Member State concerned needs only "*if at all possible"* to *"provide the Commission with sufficient information to enable it to assess the situation",* failing which the Commission *"may also base its decision on circumstantial evidence*". Any move towards relaxation of the current standard of proof could thus result in the approval of otherwise incompatible aid (e.g. not limited to the minimum necessary), and possibly induce long-term negative effects, in particular by leading to subsidy races at the global level and windfall profits for mobile investors. In turn, this might affect territorial cohesion within the EU, as richer regions would be in a better position to outbid poorer ones with matching aid.

Secondly, Member States have in general confirmed in the public consultation that the currently maximum aid intensities are appropriate, and moreover indicated that aid granted for R&D projects in most cases remain significantly below the allowed maxima. These elements seem to rather indicate that the present rules sufficiently cater for the international dimension by allowing for some margin to "match" aid within the limits of the Framework.

Finally, whilst in view of the above it would at first view seem suitable to maintain the current provisions, it has to noticed in this context that the matching clause as such may well conflict with WTO law and be incompatible with the EU's obligations under Article 32.1 of the Agreement on Subsides and Countervailing Measures, in particular since the expiry of its Article 8.2 that defined certain types of assistance for R&D activities as non-actionable subsidies[49]. For this reason, the possible maintenance of the clause should in principle be subject to a proper verification of its compatibility with WTO law.

6.4. Negative effects

The current Framework identifies the main negative effects of R&D aid by referring to distortions on the product market, location effects and effects on trade flows within the internal market. Whilst the definition of eligible costs, aid intensities and eligible aid categories already aim at reducing those negative effects, the characteristics of the aid beneficiary and the relevant markets, as well as the design of the aid, are also taken into account in a substantive assessment.

The negative effects identified in the Framework remain valid. However, the revised rules should provide more guidance in terms of the type of negative effects that are so significant that they can never be outweighed by positive effects ("black list"), as well as with regard to the most appropriate design of R&D aid.

6.4.1. Distortions on the product market

The difficulties of assessing possible market distortions are compounded by the recurrent need to perform an analysis of multiple markets (which are sometimes geographically segmented), especially since R&D projects tend to translate into development of new

[49] E.g. Flett et al., *"The Relationship between WTO subsidies and EU State aid law"*, in "EC State aid law", Chap. 21, p. 442-467.

technologies and thus entirely new market opportunities. In case practice, the main reasons for a positive outcome have been a limited market share of the beneficiary, the existence of countervailing buyer power, the potential for developing competing end-products in a market with significant growth potential, and the presence of high exit barriers that lock-in competitors in alternative R&D paths with high up-front investments.

In order to limit expected distortions on the product market (e.g. owing either to the specificities of the aid beneficiary or the structure of the relevant market), it is however important that Member States design their aid measures in a way that alleviates these negative effects. Thus being, the Commission is e.g. less likely to have concerns as regards the risk of maintaining or increasing market power if aid granted to a major player is subject to conditions facilitating licensing of IPR or, more generally, dissemination of knowledge. In the same vein, concerns regarding the distortion of dynamic incentives to invest may be alleviated if aid granted for the development of test platforms foresees open access and wide dissemination of the research's results. Conversely, aids granted to "regular" beneficiaries are more likely to raise concerns with regard to distortions of dynamic incentives to invest and maintenance of inefficient market structures.

Possible line of reform:

Devise specific guidance as to possible, built-in remedies for reducing distortions on the product market through a better design of aid measures.

6.4.2. Location effects and impact on the internal market

The current Framework already excludes undertakings in difficulty from its scope of application, and explicitly states that there can be no restrictions in terms of exploitation of R&D&I results in other Member States.

While in principle the location effects of an aid should systematically be considered in the context of a substantive assessment, significant concerns in this regard do not seem much likely to arise for individual R&D projects, whose location is to a large extent determined by the availability of the required knowledge pool (such as skilled researchers and infrastructure). Under these circumstances, it would seem sufficient to concentrate on those cases where there is evidence that the aid beneficiary has considered alternative locations[50].

This notwithstanding, since an aid measure cannot be approved if is discriminatory to an extent not justified by its state aid character, in particular when it contravenes to the four fundamental freedoms (e.g. by imposing undue territorial restrictions), it could moreover be considered to further clarify which types of restrictions are not acceptable, e.g. in terms of selection of beneficiaries[51], subcontracting[52] and location of the project[53].

At the same time, it would seem useful to identify situations that would typically contribute to strengthening the internal market or *a contrario* lead to its partitioning. Aid measures that promote cross-border cooperation could thus be explicitly singled out as examples of aid that enhances the internal market.

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50 See section 5.2.2.4 of the Environmental aid guidelines, OJ C 82 of 1.4.2008.

51 In particular those which go beyond limiting the aid measure to companies with their legal domicile or establishment/operational site in the country/region concerned.

52 No restriction would be allowed in terms of subcontracting to carry out the project.

53 E.g. requiring that the aided R&D activity is carried out exclusively in the country/region concerned.

Possible line of reform:

Explicitly address the negative effects induced by location decisions in those cases where there are potential concerns in this regard.

Clarify what the respect of the fundamental freedoms entails for R&D aid, whilst maintaining the exclusion of firms on difficulty from the scope of the Framework.

6.5. Balancing positive and negative effects

In the context of a substantive assessment, the compliance with the principles described above should be sufficient to conclude on the aid compatibility. A further balancing exercise, whereby the positive effects of the aid are weighed against its negative effects, will not be necessary unless in exceptional circumstances.

7. INNOVATION SUPPORT MEASURES

The innovation measures covered by the current Framework refer to: (a) aid for industrial property right costs for SMEs; (b) aid for young innovative enterprises; (c) aid for process and organisational innovation in services; (d) aid for innovation advisory services and for innovation support services; (e) aid for the loan of highly qualified personnel; and (f) aid for innovation clusters. With the exception of process and organisational innovation, as well as innovation clusters, these aid measures apply exclusively to SMEs and have therefore also been included in the GBER. However, in spite of its outstanding importance as one of the key objectives of the Europe 2020 strategy, the use of innovation aid has so far been rather limited. Given that innovation plays a key role with regard to competitiveness, growth and job creation, it must be ensured that aid for such purposes can be granted in situations where there is a market failure, albeit keeping in mind that the most important way of stimulating innovation is by fostering effective competition.

In the public consultation most stakeholders expressed concerns that the allowed innovation aid measures may be too restrictive in scope, as well as in application (e.g. limitations in eligible costs, eligible beneficiaries, time-lines and aid levels). A tendency for using a number of small and rather limited forms of innovation aid has, according to some stakeholders, led to increased bureaucracy at the level of both aid granting agencies and beneficiaries of such aid. For those reasons several Member States appear instead to use *de minimis* aid in order to support innovation activities and some of them therefore invite the Commission to increase the *de minimis* threshold to at least EUR 400,000.

Taking this into consideration, it could be considered combining several (or all) innovation measures into one new category of **"small amounts of compatible aid for innovation"** that explicitly provides for specific types of non-technological innovation, and setting the maximum allowed aid amount at a certain ceiling per beneficiary under the GBER. Granting such a new category of aid instead of using a number of more fragmented instruments would in principle ease the administrative burden of Member States and make the rules easier for beneficiaries to understand[54].

[54] For instance, an aid beneficiary could be granted for different eligible costs EUR 200,000 under the *de minimis* rules and another EUR 200,000 under the new category of innovation aid.

Possible line of reform:

Possibly develop one single set of compatibility rules covering a wide range of innovation measures, which could replace all or some of the existing measures.

Depending on the scope of a possible consolidation of innovation aid (including by merging analogous aid measures across different state aid rules), it may however be necessary to adjust and/or streamline the current requirements of innovation aid with a view to enhance their effectiveness and ensure that the applicable rules give sufficient leeway for Member States to support innovation, whilst increasing the necessary transparency of aid and facilitating the assessment of its incentive effect. More specifically, for each of the currently existing measures the following aspects could thus be discussed:

(a) Industrial property rights costs: Aid is allowed for supporting SMEs IPR costs[55] at the same aid intensities that apply to the research activities which first led to the IPR concerned. Whilst the rationale for applying bonuses to aid for IPR costs seems questionable[56], a number of Member States and stakeholders argued in the public consultation that the rules on aid intensities should be changed: presently, it seems difficult to set the correct aid intensity with certainty, since this requires determining exactly from which type of research stems the knowledge subject to IPR results. To the extent the division of IPR arising from industrial research and experimental development activities is not clear, it could thus be considered to standardise the aid intensities, e.g. at 50%[57].

Possible line of reform:

Standardise the aid intensity for IPR costs, while discontinuing the use of bonuses.

(b) Young innovative enterprises: Small innovative enterprises, which have existed for less than six years, can obtain state aid up to EUR 1 million (EUR 1.25 million or EUR 1.5 million in assisted regions). Such aid can only be provided once to the same beneficiary, and may only be cumulated with other types of aid than R&D&I aid and risk capital aid after a period of three years from the granting of the young innovative enterprise aid. With respect to the definition of young innovative enterprises, it was argued in the public consultation that the age of an enterprise (if retained as a criterion) could be based either on its registration date or the date of the hiring of its first employee. To the extent that such aid is not linked to any specific expenditure, some stakeholders considered that the cumulation provisions could be clarified with a view to accepting that the beneficiary receives other types of aid provided that this does not lead to exceeding the applicable maximum aid amounts.

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55 Eligible costs are: costs for preparation, filing, prosecution and renewal of IPR application before the right is granted, translation costs incurred in order to obtain the grant or validation of the right in other legal jurisdictions; costs of defending the validity of the right during the official prosecution of the application and possible opposition proceedings, even if such costs occur after the right is granted.

56 The use of a "dissemination bonus" seems irreconcilable with IPR, size-related handicaps are automatically taken into account since this type of aid only can be granted to SMEs, and there seems to be no economic justification for collaboration bonuses insofar as registration of IRP is fully separable from the collaborative or non-collaborative nature of the underlying research activity.

57 The same logic could apply to aid for technical feasibility studies, which are not discussed here because it does not relate to innovation but rather to R&D projects. In this case, it could moreover be considered to extend the scope of aid to all costs that are strictly necessary for a preliminary determination and documentation of the technical viability of the relevant R&D project, with the exclusion of costs relating to the assessment of its commercial viability as well as of marketing costs.

Possible line of reform:

Base the firm's age on the date of registration of the enterprise (deducting any periods when the enterprise has been dormant) and allow cumulation whenever the aid for young innovative enterprises and any other state aid do not exceed the applicable aid ceiling, whilst possibly abandoning the distinction between assisted and non-assisted regions.

(c) Process and organisational innovation: Process and organisational innovation[58] can be supported if *inter alia* the following conditions are fulfilled: *(i)* organisational innovation must be related to information and communication technologies (ICT); *(ii)* the innovation must be formulated as a project whose result must be the development of a standard/business model/methodology/concept, which can be systematically reproduced; *(iii)* the innovation must be new or substantially improved compared to the state of the art in its industry in the EU; and *(iv)* the innovation must entail a clear degree of risk. The applicable maximum aid intensities are 15% for large enterprises (if collaborating with SMEs), 25% for medium-sized enterprises and 35% for small enterprises, and eligible costs are the same as for R&D projects. In the case of organisational innovation, it could be argued that it is no more appropriate to limit the aid to the area of ICT. At the same time, the territorial scope of the relevant innovations could also be discussed with a view to possibly allow aid for innovations that go beyond the state of the art in a particular Member State, region or industry. As to the requirement that large companies need to collaborate with a SME in order to benefit from the aid there seems however to be no reason for abandoning it; since it is questionable that large companies suffer from any significant market failure in this respect, their eligibility for this type of aid could moreover be reconsidered.

Possible line of reform:

Widen the scope of aid for organisational innovation in order not focus only on ICT, and possibly allow aid for innovations that go beyond the state of the art in a particular Member State, region or industry, whilst maintaining the current limitations for large companies or excluding them from aid.

(d) Innovation advisory and support services: An aid amount up to maximum EUR 200,000 can be provided to SMEs' costs for innovation advisory services[59] and innovation support services[60], provided that such services are bought at market price (or at full costs plus a reasonable margin). Member States can currently choose between granting the aid directly to the SMEs and letting the users address the provider of their choice ("voucher system") or provide up-front finance to service providers and entrust them to pass on the aid via reduced prices. However, in the latter case and in view of recent case-law[61], it is questionable to exclude that the service providers benefit at least

[58] "Process innovation" means the implementation of a new or significantly improved production or delivery method (including significant changes in techniques, equipment and/or software); "organisational innovation" means the implementation of a new organisational method in the undertaking's business practise, workplace organisation or external relations.

[59] The following costs are eligible: costs for management consulting; technological assistance; technology transfer services; training; consultancy for acquisition, protection and trade in IPR and for licensing agreements; and consultancy on the use of standards.

[60] The following costs are eligible: costs for office space; data banks; technical libraries; market research; use of laboratory; quality labelling, and testing and certification.

[61] Joint cases T-455/08, *Flughafen Leipzig-Halle GmbH and Mitteldeutsche Flughafen AG* v *Commission* and T-443/08, *Freistaat Sachsen and Land Sachsen-Anhalt* v *Commission*.

indirectly from the aid. In order to ensure that any (indirect) advantage to the service providers is limited to the minimum, the measure should therefore be open to all intermediaries which satisfy the necessary objective and transparent conditions, or implemented by means of a public tender. Moreover, the amount of finance made available up-front to service providers should be limited, both in time and with regard to their normal activities, and possibly foresee a claw-back clause if it has not been fully passed on to final users within a certain period of time (e.g. maximum five years)[62]. Finally, internal costs (borne by the concerned SMEs) that complement costs of service providers could also be considered eligible.

Possible line of reform:

Introduce a requirement of objective and transparent selection of service providers entrusted to passing aid on to the final beneficiaries.

(e) Loan of highly qualified personnel: Aid for the loan of highly qualified personnel seconded from a research organisation or a large enterprise to a newly created R&D&I function in a SME is allowed at an aid intensity of 50% of the personnel costs for borrowing and employing the relevant staff and for a maximum period of three years. The definition of highly qualified personnel is currently limited to researchers, engineers, designers and marketing managers with tertiary education degree and at least five years of relevant professional experience. A significant numbers of stakeholders argue that this definition is too narrow and traditional, and should be extended to other categories of tertiary education, such as IPR specialists, project leaders and lawyers, whose competence can be vital for this type of projects. Also, a possible extension of aid to the hiring of highly qualified personnel and/or temporary staff exchanges (e.g. as in Marie Curie fellowships) could be discussed.

Possible line of reform:

Widen the definition of "highly qualified personnel".

(f) Innovation clusters: Investment and/or operating aid can be provided to the legal entity operating an innovation cluster[63]. With respect to its scope, it has been argued *inter alia* in the public consultation that the legal structure of the undertakings participating in a cluster is irrelevant and the text should in a clearer manner show that also other organisations than enterprises and research organisations (e.g. NGOs, non-for-profit organisations, associations) can participate in a cluster, in the same vein as for ERDF interventions[64]. Moreover, there seems to be no particular justification for requiring a specialisation of a cluster on the basis of a certain sector or territory: innovation clusters may be active over Member States' borders and promote R&D&I from other points of view than a field of activity, e.g. digital services. The decisive aspect in this regard

[62] See case N 3010/2010, *Green Labs*. Alternatively, the service providers could jointly invoice the beneficiary and the Member State and get reimbursed on the basis of individual services having been effectively provided. This could, however, be an administratively burdensome procedure as service providers would need to provide advance and clear information about the aid element included in their services to any potential client.

[63] "Innovation clusters" are currently defined as groupings of independent undertakings (innovative start-ups, small, medium and large undertakings as well as research organisations) operating in a particular sector and region and designed to stimulate innovative activity by promoting intensive interactions, sharing of facilities and exchange of knowledge and expertise and by contributing effectively to technology transfer, networking and information dissemination among the undertakings in the cluster.

[64] COM(2011) 614 final of 6.10.2011.

could instead be that the innovation cluster is an open one, with a fixed structure that is built on common knowledge.

Provided that a cluster is open-access and uses cost-based fees, investment aid of up to 15% of eligible costs[65] can be provided to promote the setting-up, expansion and animation of innovation clusters. In addition, regional and SME bonuses are allowed. Several Member States and stakeholders consider that such aid level is too low given that clusters/networks often contribute to several common objectives and are a privileged means to disseminate knowledge. At the same time, some of them also indicate that regional bonuses can be abolished, since aid for regional purposes is allowed under other state aid rules.

Operating aid for cluster animation can be provided for a period of five years where the aid intensity is either degressive in a linear manner (from 100 % to zero), or limited to 50% of the eligible costs[66]. Some Member States argue that the current provisions should be simplified and made more flexible by establishing the maximum aid intensity and allowing aid granting authorities to spread the aid in the most appropriate manner over a maximum period of years (e.g. 75% over five years or 50% over ten years), possibly subject to mid-term evaluation. Alternatively, it could be considered to abandon the limitation in time and impose a limitation of annual financing instead. However, since the depreciation time could quite long at least for some of the facilities concerned, this would mean a considerable delay in the incentive for clusters' to fully reflect costs in the prices charged to final users.

At the same time, to the extent that degressity of operating aid may lead clusters to progressively specialise in large companies (which are most likely to be able to afford market prices), it could be considered to allow different financing rates for different types of clusters, according to the proportion of "first-user" companies, thus taking account of the life cycle of participating SMEs. In this context, it could also be considered whether preferential support needs to be envisaged for non-geographical (e.g. virtual) clusters, possibly engaged in cross-border or transnational collaboration.

Possible line of reform:

Possibly remove the connection with a certain region and sector, and allow other forms of collaboration, whilst providing for the distribution of operating aid in a more flexible manner, subject to a regular assessment of its efficiency and appropriateness.

65 Eligible costs are costs for training facilities, research centres, research infrastructure, laboratory and testing facilities, and broadband network infrastructures.

66 Eligible costs are personnel and administrative costs relating to marketing of the cluster to recruit new members; management of the cluster's open-access facilities and; organisation of training programmes, and workshops and conferences for knowledge sharing and networking.