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Mid-Term Review of the R&D&I Framework

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1. INTRODUCTION

Promoting Research and Development and Innovation (hereafter "R&D&I") is an important objective of common interest.

The Europe 2020 strategy puts R&D&I at its heart with the objective of achieving an overall R&D spending of 3% of the GDP. In particular, the Commission Communication "EU 2020" indicates that there is a clear need to improve the conditions for private R&D in the EU. The R&D spending in Europe is below 2%, compared to 2.6% in the US and 3.4% in Japan, mainly as a result of lower levels of private investment.

The "Innovation Union" is one of the seven flagships announced in the Europe 2020 Strategy. It aims at improving conditions and access to finance for research and innovation, to ensure that innovative ideas can be turned into products and services that create growth and jobs. At the same time, it underlines the need for behavioural changes which are needed to tackle the major societal challenges (such as climate change) and strengthening our leadership in key technologies.

The Community Framework for State aid for Research and Development and Innovation (hereafter the "R&D&I Framework")¹ set out the conditions Member States should respect when granting aid to promote R&D&I.

The current R&D&I Framework is in force since 1 January 2007. Most of its provisions have been included in the General Block Exemption Regulation² (GBER) which entered into force in August 2008.

Although the R&D&I Framework will be applicable until 31 December 2013, it foresees a mid-term review three years after its entry into force.

In this context, it should be noted that the current rules were designed to cover more than just technological R&D&I. Therefore, they do not prevent or hinder support in favour of new and emerging forms of R&D&I activities.

The present mid-term review should be seen as an opportunity to take stock of the application of the R&D&I Framework and start reflecting on the contribution of the R&D&I State aid rules to the EU innovation goals in order to further promote private investment in R&D, smarter public investment and overall innovation.

In the following, the experience developed so far has been reviewed and a number of issues that have arisen have been addressed with a view to providing Member States businesses and other stakeholders with greater clarity on the application of the present rules. The document also identifies possible practical adjustments to be

¹ Official Journal C 323, 30.12.2006, p. 1.

² Official Journal L 214, 9.8.2008, p. 3.

considered for the revision of the Framework in 2013. In parallel, a broader reflection will be launched on the future R&D&I State aid policy, including on wider and more substantive issues such as aid effectiveness, architecture and proportionality of the rules, enforcement, innovative financial instruments and other amendments to support the Commission policy in addressing impediments (structural or otherwise) that are hindering improvements in the EU's research and innovation performance. To this effect a public questionnaire will be addressed to Member States and stakeholders after the summer.

2. CONTEXT AND MAIN FEATURES OF THE R&D&I FRAMEWORK

State aid rules are only one element of R&D&I policies³. R&D&I can be encouraged by Member States by adopting certain policy initiatives (for instance, promoting knowledge partnerships and strengthening links between education, business, research and innovation) or by adopting general measures applicable to all companies on their territories which, in principle, fall outside the scope of the State aid rules.

In addition, many R&D&I measures do not qualify as State aid (e.g. public financing of non-economic R&D&I activities by research organisations, R&D commissioned from firms by public authorities according to market conditions and R&D tax incentives available to all enterprises). Aid to R&D&I is, therefore, only one of the various tools to the "Innovation Union".

In this respect, the gross domestic public expenditure on R&D as percentage of GDP in 2009 for EUR 27 amounted to 0,64%, while the R&D aid as percentage of GDP amounted to 0,09%⁴.

State aid to R&D&I shall be compatible with the internal market if the aid can be expected to lead to additional R&D&I and if the ensuing distortion of competition is not contrary to the common interest. The aim of the R&D&I Framework is to ensure this objective and to make easier for Member States to better target the aid to the relevant market failures. State aid must lead to the recipient of aid changing its behaviour so that it increases its level of R&D&I projects or activities (either an increase in the total R&D budget of the company including the State aid or in the company's own financial effort).

The Framework was a major step forward in terms of the number of possibilities for Member States to grant aid and in terms of the process for their assessment based on a review proportionate to the potential distortive impact. In fact, the average expenditure in State aid for R&D&I increased during the period 2007-2009 (8,758 million EUR) in comparison with the period 2004-2006 (6,277 million EUR)⁵.

From a geographical point of view, the Member States with the highest average expenditure on R&D&I during the period 2007-2009 were DE (2,240 million EUR),

³ Data from the State aid Scoreboard indicate that State aid to R&D accounts for only 11% of the overall public expenditure on R&D.

⁴ DG COMP 2010 State aid Autumn Scoreboard. State of play 31.12.2009.

⁵ DG COMP 2010 State aid Autumn Scoreboard. State of play 31.12.2009. Data for EU 27.

FR (1,919 million EUR), ES (994 million EUR) and IT (802 million EUR)⁶. Member States with the lowest expenditure were CY, LV and MT with 1 million EUR respectively. As regards public expenditure on R&D&I as percentage of GDP, the Member States with the highest percentage in 2009 were Austria, Sweden, Finland and France⁷.

The R&D&I Framework moved away from an assessment based on the linear distinction of the different stages of research activities, introduced the notion of innovation aid and strengthened the economic assessment of State aid measures for R&D&I, according to their potential distortive impact. A *standard assessment* was foreseen for measures which satisfy the conditions set out in Chapter 5 of the Framework, including a demonstration of the incentive effect and necessity for aid, whilst a *detailed assessment* was required for larger cases to cater for a higher risk of distortion of competition.

With a view to further simplifying the granting of R&D&I aid, in 2008 large part of the Framework was included in the GBER (in particular all the section on R&D projects subject to a standard assessment and most innovation measures), thereby making possible for Member States to support R&D&I investments without prior notification to the Commission. In 2009, in value terms more than 9% of aid to R&D&I was granted under block exempted measures.⁸ Regular monitoring exercises carried out by DG Competition ensure an effective *ex-post* State aid control of block exempted schemes.

3. EXPERIENCE FROM PRACTICE

From the entry into force of the R&D&I Framework on 1st January 2007 until end-2010, the Commission has approved 181 aid schemes (including 9 non-aid decisions), of which 118 pure R&D schemes, 18 innovation oriented schemes and 45 mixed measures, pursuing both R&D and innovation objectives.

Over the same period, the Commission has also approved 46 individual or ad hoc aid R&D measures (including 2 non-aid measures), of which 39 after detailed assessment and involving a total of more than EUR 2 billion of State aid. Two further measures have been withdrawn, one during preliminary examination and another after the opening of the investigation procedure.

In addition to relevant case practice, Commission consultation forums such as the High-Level Expert Group on Key Enabling Technologies⁹ have commented upon and highlighted certain problems relating to the R&D&I State aid framework, in particular for sectors which are subject to fast investment decisions due to rapid innovation cycles or to high investments responding to societal challenges. The results of their work, such as an application of project of European common interest to Key Enabling Technologies, will be discussed in the future revision of the Framework in 2013.

⁶ DG COMP 2010 State aid Autumn Scoreboard. State of play 31.12.2009.

⁷ DG COMP State aid Autumn Scoreboard.

⁸ DG COMP 2010 Autumn Scoreboard, State of play 31.12.2009.

⁹ http://ec.europa.eu/enterprise/hlg_kets.htm

3.1. Detailed assessment

The detailed assessment of large R&D projects concerns cases where aid is above EUR 7.5 million per project per company in the case of experimental development projects, EUR 10 million in the case of industrial research and EUR 20 million for fundamental research projects.

The detailed assessment is the first application of the refined economic approach in State aid legislation and translates the balancing test explicitly introduced by the State Aid Action Plan (SAAP) for the specific objective of R&D.¹⁰ It balances the positive and the negative effects that State aid has on R&D and competition, with a view to ensuring that the measure is in the common EU interest.

On the positive side, it requires the demonstration by the Member State that the aid addresses a market failure (e.g. a characteristic of the market that makes the market not function efficiently), such as the presence of knowledge spillover effects from R&D that are not sufficiently taken into account by individual market players, imperfect and asymmetric information hampering R&D financing or coordination failures among market participants. Second, it requires that the aid is an appropriate instrument, that there are no alternative measures involving no aid (e.g. general R&D measures) that are equally effective but less distortive. Third, it requires that the Member State demonstrates that the aid has an incentive effect for the aid beneficiary, e.g. the company does more R&D than it would have done in the absence of aid (in the no-aid counterfactual). Beyond the basic indicators on increased R&D spending and personnel, the elements taken into account in this counterfactual analysis include the specification of the intended change, an assessment of the level of profitability, an assessment of the amount invested and of the cash-flow for the project including its time path and the level of risk involved. Finally, the assessment of proportionality takes into account the selection process and the minimisation of the aid to the amount necessary (in practice with the type of instrument linked to the type of market failure).

On the negative side, the analysis of distortion of competition and trade looks at whether the R&D aid distorts dynamic incentives (in particular, the incentives of other players in the market to continue to do R&D), creates or maintains positions of market power or maintains an inefficient market structure (e.g. by artificially supporting the market presence of the firm in the market).

The Commission has gathered significant experience in the implementation of the detailed economic assessment on large individual cases. Although the Commission has opened some formal investigation procedures on the grounds of preliminary doubts about the proportionality and necessity of the aid,¹¹ the vast majority of such individual assessments resulted in a decision by which the Commission declared not

¹⁰ In 2005, the Commission announced its State-aid action plan, to give new impetus to the Lisbon Strategy for growth and jobs; European Commission, State aid action plan - Less and better targeted State aid: a roadmap for State aid reform 2005–2009 (Consultation document); 7.6.2005, COM (2005) 107 final.

¹¹ Commission Decisions of 21.10.2008 on case C 9/2007 (ex N 608/2006), *Industria de Turbo Propulsores*, and of 17.6.2009 on case C 33/2008 (ex N 732/2007), *Volvo Aero Corporation*. The doubts raised by the Commission were allayed during the formal investigation mainly by means of modification of the aid instrument and/or reduction of the envisaged aid amount.

to raise objections to the measure, without having opened the formal investigation procedure. This notwithstanding, the detailed economic assessment has led to significant materially different results in a number of cases, as compared to the original design of the measure. In particular, following the Commission's assessment, several adaptations were introduced by Member States during the preliminary investigation, including limitation of eligible costs, application of more stringent conditions for reimbursable advances and the introduction of clear commitments on dissemination of knowledge and access to intellectual property rights. In a single case, the notification has been withdrawn by the Member State concerned.

The potential for distorting dynamic incentives in the market is a central concern in the assessment of aid for R&D projects aimed at the development of new technologies and thus entirely new market opportunities. The Commission has focused on ensuring that the aided projects are sufficiently differentiated from projects financed by the market itself, that the projects' results are widely disseminated, including through open standards, and do not unduly hinder the possible emergence of alternative technologies. At the same time, it can be noticed that none of the cases assessed so far has raised very serious concerns about possible distortions of competition (including the strengthening of the competitive position of companies with large market shares), even if usually an analysis of multiple and sometimes geographically segmented markets was required.

The overall duration of large R&D cases has been close to the average of all State aid cases and has remained at about the same level as before the introduction of the new Framework, even if the economic assessment is complex and requires more detailed technical information which has not always been easily available at the level of the public administration granting the aid (as evidenced by the high frequency of requests for extension of deadlines for submitting such information). The application of the balancing test and the detailed criteria to carry it out is believed to have resulted in a 'guiding function' (*'effet structurant'*) for Member States to design better-targeted large individual R&D aid.

In this context, it can be noticed that the nature of the relevant market failure typically structures the type of intervention envisaged by Member States as well as its subsequent design with a view to ensure an appropriate incentive effect of the aid. For instance, in case of significant externalities, the aid usually aims at increasing the level of profitability of the project to levels acceptable to the company. In case of coordination failures, the aid aims at allowing some companies to participate in a given project or enabling an otherwise heterogeneous group to collaborate in R&D activities that do not necessarily fall under each participant core's competencies. In those cases, the analysis of the incentive effect at the level of the main beneficiary has to take into account such heterogeneity, and a simple consideration of the project's profitability prospects (e.g. by comparison with the counterfactual scenario) may not provide a full and accurate picture insofar as the increased risk from coordination is not taken into account. When the main market failure is asymmetry of information (e.g. non availability of funding from the market due to misconception regarding the magnitude of the risks involved in a particular project), the assessment of the incentive effect has to look at the profitability aspects so as to evaluate the credibility of the claim that funding cannot be found.

The large individual cases assessed so far concerned R&D domains as diverse as advanced nanosubstrates, engine components and new composite materials for airplanes structures, intelligent energy management, automatic processing of multimedia data, high fields magnetic resonance imaging, CMOS derivative processes for system-on-chip technologies, fuel cell power modules and new methods for the production of biofuels.

As regards the R&D&I-activities and the type of beneficiary for which State aid has been granted, available data¹² for the period 2007-2011 suggest that the largest proportion of funding was for activities in the domains of aeronautics (29%), microelectronics (21%), energy (14%), biotechnology (11%), automotive (11%) and ICT (9%). Activities in the other domains (e.g. transport, food, other) share in the rest. 80% of total R&D&I-State aid was for the development of key enabling technologies such as micro and nanoelectronics, advanced materials, industrial biotechnologies, advanced manufacturing systems and, to a lesser extent, nanotechnologies. Large enterprises absorbed approx. 90% of larger R&D&I-State aid and SME's received the remaining approx. 10%. As supported R&D-activities in one particular sector might have cross-sectoral and collaborative elements, their results might also be beneficial for other sectors. There were no requests by aid applicants to apply the matching clause, under which circumstances they would prove or demonstrate that a competitor has received a higher aid intensity than permissible under R&D State aid rules for a comparable project in a third country.

Available data show large variations between Member States and seem to reflect each Member States' industrial landscape and its corresponding R&D&I-priorities. As available data on larger aid amount, by nature, rather give insight in R&D-funding to large enterprises, they cannot fully reflect aid to SME's, which often absorb smaller amounts of aid. Further, available data cannot show a clear picture of the actual use of overall resources that had been allocated to aid schemes when they were established and notified. Consequently, such data do not shed light on the level of difficulties in the implementation of aid schemes, either.

3.2. GBER

As to R&D measures put in force under the GBER, there were 99 schemes providing aid for fundamental research, 299 for industrial research and 290 for experimental development. The GBER was also used for measures relating to innovation, 107 of which referred to industrial property rights for SMEs, 54 to young innovative enterprises, 78 to innovation advisory and support services and 39 to the loan of highly qualified personnel.

Nevertheless, the total amount of R&D&I aid granted through block exempted measures is still relatively low - EUR 977 million granted in 2009 – when compared

¹² Data on individual aid above EUR 3 million; data were gathered, firstly, from large individual cases subject to the notification obligation, and secondly from information sheets provided by Member States, on aid above EUR 3 million and granted under R&D&I-aid schemes. Information sheets are required i.e. to carry out an impact assessment of the R&D&I-Framework 3 years after its entry into force, pursuant to point 10.1.3 thereof. They, however, cannot provide full insight into the actual structure and implementation of R&D&I-aid schemes.

with the total amount of aid awarded under the GBER for industry and services in 2009 – EUR 10 831 million¹³.

3.3. Transparency cases

Until end 2010, the Commission has recorded a total of 192 "transparency" cases, i.e. individual R&D aid measures granted on the basis of approved or block exempted aid schemes, which exceed EUR 3 million without however falling under the duty for individual notification.

The Commission requested supplementary information in about 1/3 of such cases, which involve some EUR 1.2 billion of State aid, mostly with a view to clarifying the granting conditions and the calculation of aid intensities, as well as the severability of several R&D projects undertaken by the same beneficiaries. The vast majority of such aid (over 80% of the total) has been granted by France, Germany, Ireland and Spain for projects undertaken in the aeronautics, biotechnology, energy, ICT and automotive sectors, and has in a significant number of cases (more than 20%) been directed to SMEs.

3.4. Conclusions

In general, case practice has shown that the current Framework has so far constituted a useful instrument for well-targeted public support. As confirmed by the number of aid schemes approved and block exempted, Member States have developed significant experience with stable rules, whose application has not given rise so far to any formal complaint and which has allowed them to design measures that are best directed to their needs and choices of R&D&I policy mix.

It has nevertheless appeared that the possibilities offered by the R&D&I Framework and the GBER have not been utilised by Member States to their full extent. The exact reasons for this phenomenon will be investigated in the preparatory work of the revision of the Framework in 2013. In particular, on an average basis, Member States appear to remain below the maximum aid intensities allowed by the current rules, possibly in view of budgetary constraints. The impact of the innovation measures (which feature in about 2/3 of all approved R&D&I schemes) may also require closer scrutiny in view of their relatively recent introduction and their introduction into the scope of the GBER in 2008. It appears in this respect that uncertainty regarding the applicable rules (e.g. regarding what constitutes an innovation measure eligible for support) might in some cases have played a role in Member States's reluctance to fully exhaust the R&D&I Framework.

At the same time, it should be noted that a significant proportion of R&D activities, especially multi-annual projects and aid schemes based on calls for proposals, may require long-term planning. There may therefore be a significant time lag between the definition of the rules, their translation into national schemes and their implementation through individual aid measures.

Given the importance of promoting R&D&I as a key objective of common interest, it is important to review the experience gained in applying the R&D&I Framework in

¹³ DG COMP 2010 Autumn State aid Scoreboard 2010.

preparation for a revision of the Framework in 2013, taking also into account the impact of the financial and economic crisis, the Europe 2020 strategy, the compatibility of the present framework with the Innovation Union Flagship concept of innovation, the increasingly important role of key enabling technologies and pilot lines¹⁴, and the evolution in practice and needs.

4. INTERPRETATION ISSUES ARISING FROM CASE EXPERIENCE

During its first years of application the R&D&I Framework has led to a number of questions of interpretation from stakeholders, which have typically been dealt with bilaterally in an informal manner in the context of individual decisions or, mostly, implementation of block exempted schemes. With a view to preparing the Framework's revision in 2013 some issues have been identified as meriting clarification (the list is not exhaustive and the remaining issues will be raised in the discussions on the future revision of the Framework in 2013):

(1) Collaboration of undertakings and research organisations

Point 3.2.2(3) of the Framework requires that any contribution of the participating undertakings to the costs of the research organisation shall be deducted from compensation equivalent to the market price received by the research organisation for the intellectual property rights which result from its activity.

In this regard, it is the absolute amount that should be deducted, including where appropriate the value of non-financial contributions (e.g. work packages or background knowledge), and not the relative contribution (expressed as percentage). Moreover, insofar as the text reads "contribution to the costs of the research organisation", the deduction does not refer to the contribution of the participating company to the costs of the project and own costs can therefore not be deducted.

(2) Bonuses for industrial research and experimental development

Point 5.1.3(b)(i) of the Framework allows for an additional 15 percentage points bonus provided that the project involves cross-border collaboration in at least two Member States. With regard to projects involving one Member State and one third country, the said bonus could also be allowed in case of collaboration with countries that are EEA members.

Moreover, in order to qualify for this bonus it is sufficient to fulfil the conditions established in point 5.1.3 (b) (i), (ii) or (iii), without any cumulation requirement.

These clarifications are also applicable to the GBER provisions.

(3) Aid for young innovative enterprises

Point 5.4 of the Framework allows aid for young innovative enterprises up to EUR 1 million (EUR 1.5 million or EUR 1.25 million for regions eligible respectively under Article 87(3)(a) and 87(3)(c) of the EC Treaty – now Articles 107(3)(a) and

¹⁴ See the Commission proposal for the Financial Framework 2014-2020, a budget for Europe 2020 COM(2011)500.

107(3)(c) TFEU). The beneficiary may receive the aid only once during the period in which it qualifies as a young innovative enterprise.

However, in practice, it is irrelevant that the beneficiary receives the aid in successive tranches as long as the undertaking qualifies as young innovative enterprise.

(4) Aid for the loan of highly qualified personnel

Point 5.7 of the Framework allows aid for the loan of highly qualified personnel but it does not indicate whether any compensation to the lending organisation for lending the personnel is eligible.

Such compensation is eligible to the extent it is part of the borrowing personnel costs and as long as it is borne by the borrowing SME and based on a market price.

(5) R&D&I project definition

The Framework does not contain a definition of 'R&D project'. Therefore, in some cases it was necessary to provide additional clarification as regards the notion of an R&D project, mainly to avoid circumvention of the notification thresholds and/or rules on the incentive effect by artificially splitting a given project.¹⁵

A R&D project, regardless of whether it is pursued independently or in collaboration, should include clear objectives, activities to be carried out to achieve those objectives (including their expected costs) and concrete deliverables to identify outcomes of the research activities and compare them with the relevant objectives. To this purpose, it seems particularly necessary to ensure that the integrity and uniqueness of a project is respected (e.g. in the sense that it must be separable from any other project, both cost-wise and time-wise, as well as risk-wise) and that the aid beneficiary should normally have a track record ensuring it can carry out and manage the proposed R&D project.

Questions have also been raised on the interpretation of an 'innovation' project. Based on existing case law and practical experience, further clarification will be addressed in the upcoming review. Moreover, interpretation of the definition of 'project of European interest' will be a topic in the future discussions on the Framework.

4.1. Update of references

Since the adoption of the Framework, some amendments have taken place in other parts of the State aid regulatory framework. In particular, an update of the Reference rate Communication has taken place¹⁶. Therefore the reference contained in footnote (33) of the Framework should be understood as referring to the new communication.

¹⁵ See e.g. paragraph 78 of Commission decision of 21.3.2011 in case N 301/2010 *Green Labs DK*.

¹⁶ Communication from the Commission on the revision of the method for setting the reference and discount rates (OJ C 14, 19.1.2008, p.6)

5. INNOVATION SHIPBUILDING PROVISIONS

The Framework on State aid to shipbuilding¹⁷ contains specific provisions on innovation aid to the shipbuilding industry. This Shipbuilding Framework is currently under revision in view of its expiry on 31 December 2011. The Commission currently proposes (a public consultation is ongoing until 15 September 2011) to prolong the innovation aid rules under the Shipbuilding Framework until 31 December 2013. After this date the Commission envisages, at this stage, including the provisions on innovation aid in the future version of the R&D&I Framework.

6. CONCLUDING REMARKS

The Commission services inform Member States, stakeholders and interested parties that a wide-ranging consultation will be launched in autumn 2011 with a view to preparing the revision of the R&D&I Framework in 2013.

¹⁷ Official Journal C 317, 30.12.2003, pages 11-14.