



EUROPEAN COMMISSION

Brussels, 19.12.2013

**Paper of the services of DG Competition containing a draft
Framework for state aid for research and development and innovation**

(Text with EEA relevance)

*This document does not represent an official position of the European Commission.
Some provisions, such as those that reflect analogous rules laid down in the draft General
block exemption Regulation or relate to important projects of common European interest, are
still under consideration and therefore remain subject to change.*

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INTRODUCTION

1. In order to prevent state subsidies from distorting competition in the internal market and affecting trade between Member States in a way which goes contrary to the common interest, Article 107(1) of the Treaty on the Functioning of the European Union ('the Treaty') lays down the principle that state aid is prohibited. In certain cases, however, such aid may be compatible with the internal market on the basis of Articles 107(2) and 107(3) of the Treaty.
2. Promoting research and development and innovation ('R&D&I') is an important Union objective laid down in Article 179 of the Treaty, which stipulates that "[t]he Union shall have the objective of strengthening the scientific and technological bases by achieving a European research area in which researchers, scientific knowledge and technology circulate freely, and encouraging it to become more competitive, including in its industry, while promoting all the research activities deemed necessary (...)". Articles 180 to 190 of the Treaty determine the activities to be carried out in that respect and the scope and implementation of the multiannual framework programme.
3. The Europe 2020 strategy¹ identifies research and development ('R&D') as a key driver to achieve the objectives of smart, sustainable and inclusive growth. To that effect, the Commission set out the headline target according to which 3 % of the Union's gross domestic product ('GDP') should be invested in R&D by 2020. In order to foster progress in the field of R&D&I, the Europe 2020 strategy in particular puts forward the "Innovation Union" flagship initiative² aiming at improving framework conditions and access to finance for research and innovation in order to ensure that innovative ideas can be turned into products and services that create growth and jobs³. The Europe 2020 communication highlighted that state aid policy 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*".
4. Whereas it is generally accepted that competitive markets tend to bring about efficient results in terms of prices, output and use of resources, in the presence of market failures⁴ State intervention might improve the functioning of markets and, thereby, contribute to smart, sustainable and inclusive growth. In the context of R&D&I, market failures could arise for instance because market actors do not normally take into account the (positive) externalities that ensue on other actors in the economy, and therefore engage in a level of R&D&I activities which is too low from the point of view of society. Likewise, R&D&I projects might suffer from insufficient access to finance (due to asymmetric information) or from coordination

¹ COM(2010) 2020 final of 3.3.2010.

² COM(2010) 546 final of 6.10.2010.

³ Overall R&D expenditure within the Union (of which roughly 2/3 is public and 1/3 private) stood at 2.03 % of GDP in 2011, an increase of 0.21 percentage points since 2005 (EUROSTAT Statistics on headline indicators: http://epp.eurostat.ec.europa.eu/portal/page/portal/europe_2020_indicators/headline_indicators). Even if private expenditure in R&D as a share of GDP has slightly increased since 2008, there are however large differences between Member States, industrial sectors and individual actors (European Commission, "Research and Innovation performance in EU Member States and Associated Countries 2013").

⁴ The term "market failure" refers to situations in which markets, where left to their own devices, are unlikely to produce efficient outcomes.

problems among firms. Therefore, state aid for R&D&I can be compatible with the internal market where it can be expected to alleviate a market failure in promoting the execution of an important project of common European interest or facilitating the development of certain economic activities, and the ensuing distortion of competition and trade is not contrary to the common interest, which the Commission mainly equates with economic efficiency in the Union for the purposes of this framework.

5. Aid for R&D&I will primarily be justified on the basis of Articles 107(3)(b) and 107(3)(c) of the Treaty, according to which the Commission may consider compatible with the internal market state aid to promote the execution of an important project of common European interest or to facilitate the development of certain economic activities within the Union, where such aid does not adversely affect trading conditions to an extent which goes contrary to the common interest.
6. In the Communication on state aid modernisation⁵, the Commission announced three objectives pursued through the modernisation of state aid control:
 - (a) fostering sustainable, smart and inclusive growth in a competitive internal market;
 - (b) focusing *ex ante* scrutiny on cases with the biggest impact on the internal market while strengthening the cooperation with Member States in state aid enforcement;
 - (c) streamlining the rules and providing for faster decisions.
7. In particular, the Communication called for a common approach in the revision of the different guidelines and frameworks based on strengthening the internal market, promoting more effectiveness in public spending through a better contribution by state aid to the objectives of common interest, and exercising greater scrutiny on the incentive effect, on limiting the aid to the minimum, and on the potential negative effects of the aid on competition and trade. The compatibility conditions set out in this framework are based on such common approach and are applicable to notified aid schemes and individual aid.

1. SCOPE OF APPLICATION AND DEFINITIONS

1.1. Scope of application

8. This framework applies to state aid for R&D&I in all sectors governed by the Treaty⁶. It therefore applies also to those sectors which are subject to specific Union rules on state aid, unless such rules provide otherwise.

⁵ COM(2012) 209 final of 8.5.2012.

⁶ Following the expiry of the Framework on state aid to shipbuilding (OJ C 364, 14.12.2011, p. 9), aid for innovation for shipbuilding, ship repair or ship conversion may continue to be granted under the substantive conditions and up to the maximum aid intensities laid down in this framework for experimental development activities, provided that it relates to the first industrial application of innovative products and processes, that is to say, technologically new or substantially improved products and processes when compared to the existing state of the art in the shipbuilding industry within the Union, which carry a risk of technological or industrial failure. Innovative products will continue to refer either to a new class of vessel as defined by the first vessel of a potential series of ships (prototype) or to innovative parts of a vessel, which can be isolated from the vessel as a separate element; innovative processes will continue to refer to the development and implementation of new processes regarding production, management, logistic or engineering areas; innovative products and processes will continue to include improvements in the

9. Union funding centrally managed by the Commission, either directly or indirectly (that is to say by the European Commission, by its executive agencies, by Joint Undertakings established on the basis of Articles 185 and 187 of the Treaty, or by any other implementing bodies where the Union funding is not directly or indirectly under the control of Member States)⁷, does not constitute state aid. Where such Union funding is combined with other public funding, only the latter will be considered for determining whether notification thresholds and maximum aid intensities are respected⁸ or, in the context of this framework, be subject to a compatibility assessment.
10. Aid for R&D&I for firms in difficulty, as defined for the purposes of this framework by the Community guidelines on state aid for rescuing and restructuring firms in difficulty⁹, as amended or replaced, is excluded from the scope of this framework.
11. When assessing R&D&I aid in favour of a beneficiary that is subject to an outstanding recovery order following a previous Commission decision declaring an aid illegal and incompatible with the internal market, the Commission will take account of the amount of aid still to be recovered¹⁰.

1.2. Aid measures covered by the framework

12. The Commission has identified a series of R&D&I measures for which state aid may, under specific conditions, be compatible with Articles 107(3)(b) or 107(3)(c) of the Treaty:
 - (a) ***aid for R&D projects*** where the aided part of the research project falls within the categories of fundamental research and applied research, of which the latter can be divided into industrial research and experimental development¹¹. Such aid is mainly targeted at the market failure related to positive externalities (knowledge spill-overs), but may also address a market failure caused by imperfect and asymmetric information or (mainly in collaboration projects) a coordination failure;
 - (b) ***aid for feasibility studies*** related to R&D projects, which aims at overcoming the market failure primarily related to imperfect and asymmetric information;
 - (c) ***aid for the construction and upgrade of research infrastructures***, which mainly addresses the market failure stemming from coordination difficulties. High-quality research infrastructures are increasingly necessary for ground-breaking research and innovation, as they attract global talent and are essential for information and communication technologies and key enabling technologies¹²;
 - (d) ***aid for innovation activities***, which is mainly targeted at market failures related to positive externalities (knowledge spill-overs), coordination difficulties and,

environmental field related to quality and performance, such as optimising fuel consumption, emissions from engines, waste and safety.

⁷ Such as Horizon 2020 or COSME.

⁸ See [recital 26 and Article 9.1 of the General block exemption Regulation].

⁹ OJ L 244, 1.10.2004, p. 2, as prolonged by OJ C 156, 9.7.2009, p. 3 and OJ C 296, 2.10.2012, p. 3.

¹⁰ See joint Cases T-244/93 and T-486/93, *TWD Textilwerke Deggendorf GmbH v Commission of the European Communities*, [1995] ECR II-02265.

¹¹ The Commission considers that it is useful to maintain different categories of R&D activities regardless of the fact that those activities may follow an interactive model rather than a linear model.

¹² Key enabling technologies are defined and identified in COM(2012) 341 final of 26.6.2012.

to a lesser extent, asymmetric information. With respect to small and medium-sized enterprises ('SMEs') such innovation aid may be granted for obtaining, validating and defending patents and other intangible assets, for the secondment of highly qualified personnel, and for acquiring innovation advisory and support services. Moreover, in order to encourage large enterprises to collaborate with SMEs in process and organisational innovation activities, the costs incurred by both SMEs and large enterprises for such activities may also be supported;

- (e) ***aid for innovation clusters***, which aims at tackling market failures linked with coordination problems hampering the development of clusters, or limiting the interactions and knowledge flows within clusters. State aid could contribute to solve this problem, first by supporting the investment in open and shared infrastructures for innovation clusters, and second by supporting the operation of clusters for the enhancement of collaboration, networking and learning.

- 13. In principle, Member States must notify R&D&I aid pursuant to Article 108(3) of the Treaty, with the exception of measures that fulfil the conditions laid down in a block exemption Regulation adopted by the Commission pursuant to Article 1 of Council Regulation (EU) No 733/2013 of 22 July 2013 amending Regulation (EC) No 994/98 on the application of Articles 92 and 93 of the Treaty establishing the European Community to certain categories of horizontal state aid¹³.
- 14. This framework provides the compatibility criteria for R&D&I aid schemes and individual aid which are subject to the notification obligation pursuant to Article 108(3) of the Treaty.

1.3. Definitions

- 15. For the purposes of this framework, the following definitions apply:
 - (a) **'ad hoc aid'** means aid not awarded on the basis of an aid scheme;
 - (b) **'aid'** means any measure fulfilling all the criteria laid down in Article 107(1) of the Treaty;
 - (c) **'aid intensity'** means the gross aid amount expressed as a percentage of the project's eligible costs, before any deduction of tax or other charge. Where aid is awarded in a form other than a grant, the aid amount is the grant equivalent of the aid. Aid payable in several instalments is discounted to its value at the moment of granting. The interest rate to be used for discounting purposes and for calculating the aid amount in a soft loan is the discount rate¹⁴ applicable at the time of grant. The aid intensity is calculated per beneficiary;
 - (d) **'aid scheme'** means any act on the basis of which, without further implementing measures being required, individual aid may be awarded to undertakings defined therein in a general and abstract manner and any act on the basis of which aid which is not linked to a specific project may be awarded to one or several undertakings;
 - (e) **'applied research'** means industrial research, experimental development, or any combination of both;

¹³ OJ L 204, 31.7.2013, p. 11.

¹⁴ See the 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, or any legal act replacing that Communication.

- (f) **'arm's length'** means that the conditions of the transaction between the contracting parties do not differ from those which would be stipulated between independent enterprises and contain no element of collusion. The setting up of an open, transparent and unconditional tender procedure for the transaction is considered as meeting the arm's length principle;
- (g) **'commercial procurement'** means the purchase of research services of which all benefits accrue exclusively to the contracting authority or contracting entity, and which it may use in the conduct of its own affairs on condition that it fully remunerates them;
- (h) **'date of award of the aid'** means the date when the legal right to receive the aid is conferred on the beneficiary under the applicable national legal regime;
- (i) **'effective collaboration'** means collaboration to exchange knowledge or technology, or to achieve a common objective based on the division of labour where the parties jointly define the scope of the collaborative project and share its risks and outputs. Subcontracting is not considered to be effective collaboration;
- (j) **'experimental development'** means acquiring, combining, shaping and using existing scientific, technological, business and other relevant knowledge and skills with the aim of developing new or improved products, processes or services. This may also include, for example, activities aiming at the conceptual definition, planning and documentation of new products, processes or services. Experimental development may comprise prototyping, demonstrating, piloting, testing and validation of new or improved products, processes or services in environments representative of real life operating conditions where the primary objective is to make further technical improvements on products, processes or services that are not substantially set. This may include the development of a commercially usable prototype or pilot which is necessarily the final commercial product and which is too expensive to produce for it to be used only for demonstration and validation purposes. Experimental development does not include routine or periodic changes made to existing products, production lines, manufacturing processes, services and other operations in progress, even if those changes may represent improvements¹⁵;
- (k) **'feasibility study'** means the evaluation and analysis of the potential of a project, which aims at supporting the process of decision making by objectively and rationally uncovering its strengths and weaknesses, opportunities and threats, as well as identifying the resources required to carry it through and ultimately its prospects for success;
- (l) **'full allocation'** means that the research organisation, research infrastructure or public purchaser enjoys the full economic benefit of intellectual property rights by retaining the right to dispose of them in the most absolute manner, particularly the right of ownership and the right to license. This may also be the case fulfilled where the research organisation or research infrastructure (respectively, public purchaser) decides to conclude further contracts concerning those rights, including licensing them to a collaboration partner (respectively, undertakings).

¹⁵ Experimental development usually corresponds to Technology Readiness Levels 5-8.

- (m) **'fundamental research'** means experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any direct commercial application or use in view¹⁶;
- (n) **'gross grant equivalent'** means the discounted value of the aid expressed as a percentage of the discounted value of the eligible costs, as calculated on the date of award of the aid on the basis of the applicable discount rate;
- (o) **'highly qualified personnel'** means staff having a tertiary education degree and at least 5 years of relevant professional experience which may also include doctoral training;
- (p) **'individual aid'** means aid granted to a specific undertaking and includes *ad hoc* aid and aid awarded on the basis of an aid scheme;
- (q) **'industrial research'** means the planned research or critical investigation aimed at the acquisition of new knowledge and skills for developing new products, processes or services or for bringing about a significant improvement in existing products, processes or services. It comprises the creation of components parts to complex systems, and may include the construction of prototypes in a laboratory environment or in an environment with simulated interfaces to existing systems as well as of small scale pilot lines to test and validate the manufacturing method performance, when necessary for the industrial research and notably for generic technology validation¹⁷;
- (r) **'innovation advisory services'** means consultancy, assistance and training in the fields of knowledge transfer, acquisition, protection and exploitation of intangible assets, use of standards and regulations embedding them;
- (s) **'innovation clusters'** means structures or organised groups of independent undertakings (such as innovative start-ups, small, medium and large undertakings, as well as research and knowledge dissemination organisations, non-for-profit organisations and other related economic actors) designed to stimulate innovative activity by promoting sharing of facilities and exchange of knowledge and expertise and by contributing effectively to knowledge transfer, networking, information dissemination and collaboration among the undertakings and other organisations in the cluster;
- (t) **'innovation support services'** means the provision of office space, data banks, libraries, market research, laboratories, quality labelling, testing and certification for the purpose of developing more effective products, processes or services;
- (u) **'intangible assets'** means assets acquired through a transfer of technology such as patent rights, licences, know-how or other intellectual property;
- (v) **'knowledge transfer'** means any process which has the aim of acquiring, collecting and sharing explicit and tacit knowledge, including skills and competence in both economic and non-economic activities such as research collaborations, consultancy, licensing, spin-off creation, publication and mobility of researchers and other personnel involved in those activities. Besides scientific and technological knowledge, knowledge transfer includes

¹⁶ Fundamental research usually corresponds to Technology Readiness Level 1.

¹⁷ Industrial research usually corresponds to Technology Readiness Levels 2-4.

other kinds of knowledge such as knowledge on the use of standards and regulations embedding them and on conditions of real life operating environments and methods for organisational innovation, as well as management of knowledge related to identifying, acquiring, protecting, defending and exploiting intangible assets;

- (w) **'large enterprises'** means undertakings which do not fall within the definition of small and medium-sized enterprises;
- (x) **'net extra costs'** means the difference between the expected net present values of the aided project or activity and the counterfactual investment. Where the counterfactual consists in the absence of an alternative project, the net extra costs of the aided project correspond to its net present value;
- (y) **'organisational innovation'** means the implementation of a new organisational method in an undertaking's business practices, workplace organisation or external relations, excluding changes that are based on organisational methods already in use, changes in management strategy, mergers and acquisitions, ceasing to use a process, simple capital replacement or extension, changes resulting purely from changes in factor prices, customisation, localisation, regular, seasonal and other cyclical changes and trading of new or significantly improved products;
- (z) **'personnel costs'** means the cost of researchers, technicians and other supporting staff to the extent employed on the relevant project or activity;
- (aa) **'pre-commercial procurement'** means the purchase of research services where the contracting authority or contracting entity does not take all the risks, results and benefits for use in the conduct of its own affairs, but shares them with the providers under market conditions. The contract, the object of which falls within one or several categories of research and development defined in this framework, is of limited duration. With the exception of prototypes or a limited set of first test items, the purchase of products or services developed under a pre-commercial procurement contract must not be an object of that same contract;
- (bb) **'process innovation'** means the implementation of a new or significantly improved production or delivery method (including significant changes in techniques, equipment or software), excluding minor changes or improvements, increases in production or service capabilities through the addition of manufacturing or logistical systems which are very similar to those already in use, ceasing to use a process, simple capital replacement or extension, changes resulting purely from changes in factor prices, customisation, localisation, regular, seasonal and other cyclical changes and trading of new or significantly improved products;
- (cc) **'R&D project'** means an operation that includes activities spanning over one or several categories of research and development defined in this framework, and that is intended to accomplish an indivisible task of a precise economic, scientific or technical nature with clearly pre-defined goals. A R&D project may consist of several work packages, activities or services, and includes clear objectives, activities to be carried out to achieve those objectives (including their expected costs), and concrete deliverables to identify the outcomes of those activities and compare them with the relevant objectives. When two or more R&D projects are not clearly separable from each other and in particular

when they do not have independent probabilities of technological success, they are considered as a single project.

- (dd) '**repayable advance**' means a loan for a project which is paid in one or more instalments and the conditions for the reimbursement of which depend on the outcome of the project;
- (ee) '**research and knowledge dissemination organisation**' or 'research organisation' means an entity (such as universities or research institutes, technology transfer agencies, innovation intermediaries, research-oriented physical or virtual collaborative entities), irrespective of its legal status (organised under public or private law) or way of financing, whose primary goal is to independently conduct fundamental research, industrial research or experimental development or to widely disseminate the results of such activities by way of teaching, publication or knowledge transfer. Where such entity also pursues economic activities, the financing, the costs and the revenues of those economic activities must be accounted for separately. Undertakings that can exert influence upon such an entity, in the quality of, for example, shareholders or members, may not enjoy a preferential access to its research capacities or to the results generated by it;
- (ff) '**research infrastructure**' means facilities, resources and related services that are used by the scientific community to conduct 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 conduct research. Such infrastructures may be 'single-sited' or 'distributed' (an organised network of resources)¹⁸;
- (gg) '**secondment**' means temporary employment of staff by a beneficiary with the right to return to the previous employer;
- (hh) '**small and medium-sized enterprises**' or 'SMEs', 'small enterprises' and 'medium-sized enterprises' means undertakings fulfilling the criteria laid down in Commission recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises¹⁹;
- (ii) '**start of works**' or 'start of the project' means either the start of R&D&I activities, or the first irrevocable agreement between the beneficiary and contractors to conduct the project, whichever comes first. Preparatory works such as obtaining permits and conducting preliminary feasibility studies are not considered as start of works;
- (jj) '**tangible assets**' means assets consisting of land, buildings and plant, machinery and equipment.

¹⁸ See Article 2(a) of Council Regulation (EC) N° 723/2009 of 25.6.2009 on the Community legal framework for a European Research Infrastructure Consortium (ERIC), OJ L 206, 8.8.2009, p. 1.

¹⁹ OJ L 124, 20.5.2003, p. 36.

2. STATE AID WITHIN THE MEANING OF ARTICLE 107(1) OF THE TREATY

16. Generally, any funding meeting the criteria of Article 107(1) of the Treaty will be considered to be state aid. Whilst the Commission notice on the notion of state aid²⁰ sets out the general principles applicable in this regard, situations typically arising in the field of R&D&I activities are considered in this Section.

2.1. **Research and knowledge dissemination organisations and research infrastructures as recipients of state aid**

17. Pursuant to general state aid principles, research and knowledge dissemination organisations ('research organisations') and research infrastructures are recipients of state aid if their public funding fulfils all conditions of Article 107(1) of the Treaty. As explained in the notice on the notion of state aid, and in accordance with the case-law of the Court of Justice, the beneficiary must, as a pre-requisite, qualify as an undertaking, but that qualification does not depend upon its legal status, that is to say whether it is organised under public or private law, or its economic nature, that is to say whether it is profit-making or not. Rather, what is decisive for that qualification as an undertaking is whether it carries out an economic activity consisting of offering goods or services on a given market²¹.

2.1.1. *Public funding of non-economic activities*

18. Where the same entity carries out activities of both economic and non-economic nature, the public funding of the non-economic activities will not fall under Article 107(1) of the Treaty if the two kinds of activities and their costs, funding and revenues can be clearly separated so that cross-subsidisation of the economic activity is effectively avoided. Evidence of due allocation of costs, funding and revenues can consist of annual financial statements of the relevant entity.

19. The Commission considers that the following activities are generally of a non-economic character:

- (a) primary activities of research organisations and research infrastructures, in particular:
 - education for more and better skilled human resources. In line with case-law²² and decisional practice²³, and as explained in the notice on the notion of state aid and the SGEI Communication²⁴, public education organised within the national educational system, predominantly or entirely funded by the State and supervised by the State is considered as a non-economic activity²⁵;

²⁰ [...].

²¹ Case 118/85, *Commission v. Italy* [1987] ECR 2599, paragraph 7; Case C-35/96 *Commission v. Italy* [1998] ECR I-3851, CNSD, paragraph 36; Case C-309/99, *Wouters* [2002] ECR I-1577 paragraph 46.

²² Judgment of the Court of 27.9.1988 in case C263/86, *Humble and Edel*, E.C.R. 1988, p.5365, paragraphs 9-10; 15-18; Judgment of the Court of 7.12.1993. – *Wirth*, ECR 1993 p. 06447, paragraph 15.

²³ See for instance cases NN54/2006, *Přerov logistics College*, and N 343/2008, *Individual aid to the College of Nyíregyháza for the development of the Partium Knowledge Centre*.

²⁴ See recitals 26-29 of the SGEI Communication, OJ C 8, 11.1.2012, p. 4.

²⁵ Workforce training, in the sense of state aid rules for training aid, does not qualify as a non-economic primary activity of research organisations.

- independent R&D for more knowledge and better understanding, including collaborative R&D where the research organisation or research infrastructure engages in effective collaboration²⁶;
 - wide dissemination of research results on a non-exclusive and non-discriminatory basis;
- (b) knowledge transfer activities, where they are conducted either by a department or a subsidiary of the research organisation or research infrastructure or jointly with, or on behalf of other such entities, and where all income from those activities is reinvested in the primary activities of the research organisation or research infrastructure. The non-economic nature of those activities is not prejudiced by contracting the provision of corresponding services to third parties by way of open tenders.
20. Where a research organisation or research infrastructure is used for both economic and non-economic activities, public funding falls under state aid rules only insofar as it covers costs linked to the economic activities²⁷. Where the research organisation or research infrastructure is used almost exclusively for a non-economic activity, all of it may fall outside state aid rules, even if it is also used for a purely ancillary economic activity, that is to say an activity which is directly related to and necessary for its operation or intrinsically linked to its main non-economic use, and is limited in scope. For the purposes of this framework, the Commission will consider that economic activities are limited in scope where resources allocated each year to such activities do not exceed 15 % of the entity's overall annual budget.
- 2.1.2. *Public funding of economic activities*
21. Where research organisations or research infrastructures perform economic activities, such as providing access to infrastructures by renting them out to undertakings, supplying services to undertakings or performing contract research, public funding of those economic activities will generally be considered state aid.
22. However, the Commission will not consider the research organisation or research infrastructure to be a beneficiary of state aid if it acts as a mere intermediary passing on to the final recipients the totality of the public funding and any advantage acquired through such funding. This is generally the case where:
- (a) both the public funding and the advantage acquired through such funding are quantifiable and demonstrable, and there is an appropriate mechanism which ensures that they are fully passed on to the final recipients, for example through reduced prices;
 - (b) no further advantage is granted to the intermediary because it is either selected through an open tender procedure or the public funding is available to all entities which satisfy the necessary objective conditions, so that customers as final recipients are entitled to acquire equivalent services from any relevant intermediary.

²⁶ Provision of R&D services and R&D carried out on behalf of undertakings are not considered as independent R&D.

²⁷ Where a research organisation or research infrastructure is both publicly and privately funded, the Commission will therefore consider this to be the case where the share of public funding exceeds the share of non-economic activities.

23. For aid to the final recipients, normal state aid rules apply.
- 2.2. **Indirect state aid to undertakings through public funded research and knowledge dissemination organisations and research infrastructures**
24. The question of whether and under which conditions undertakings obtain an advantage within the meaning of Article 107(1) of the Treaty in cases of contract research or research services provided by a research organisation or research infrastructure, as well as in cases of collaboration with a research organisation or research infrastructure must be answered in accordance with general state aid principles. To this purpose, as explained in the notice on the notion of state aid, it may in particular have to be assessed whether the behaviour of the research organisation or research infrastructure can be attributed to the State²⁸.
- 2.2.1. *Research on behalf of undertakings (contract research or research services)*
25. Where a research organisation or research infrastructure performs contract research or provides a research service to an undertaking, which typically specifies the terms and conditions of the contract, owns the results of the research activities and carries the risk of failure, no state aid will usually be passed to the undertaking if the research organisation or research infrastructure receive payment of an adequate remuneration for their services, particularly where one of the following conditions is fulfilled:
- (a) the research organisation or research infrastructure provides its service at market price²⁹, or
 - (b) where there is no market price, the research organisation or research infrastructure provides its service at a price which:
 - reflects the full costs of the service plus a margin established by reference to margins commonly applied by undertakings for the service concerned, or
 - is the result of arm's length negotiations where the research organisation or research infrastructure, in its service provider capacity, negotiates in order to obtain the maximum economic benefit at the moment when the contract is concluded and covers at least its marginal costs.
26. Where the ownership of, or access rights to intellectual property rights ('IPR') are transferred to the research organisation or research infrastructure, their market value may be deducted from the price payable for the services concerned.
- 2.2.2. *Collaboration with undertakings*
27. A project is considered to be a collaboration project where at least two independent partners participate in its design, contribute to its implementation and share the related financial, technological, scientific and other risks as well as its results. 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, access to

²⁸ See case C-482/99, *France v. Commission*, 16 May 2002, *Stardust Marine*.

²⁹ Where the research organisation or research infrastructure provides a research service or carries out contract research for the first time on behalf of an undertaking, on a trial basis and during a clearly limited period of time, the Commission will normally consider the price charged as a market price where that research service or contract research is unique and it can be shown that there is no market for it.

and allocation of IPR, must be concluded prior to the start of the project³⁰. Contract research and provision of research services are not considered forms of collaboration.

28. Where collaboration projects are carried out jointly by undertakings and research organisations or research infrastructures, the Commission considers that no indirect state aid is granted to the participating undertakings through those entities due to favourable conditions of the collaboration if one of the following conditions is fulfilled:
- (a) the participating undertakings bear the full cost of the project, or
 - (b) the results which do not give rise to IPR may be widely disseminated and any IPR resulting from the activities of research organisations or research infrastructures are fully allocated to those entities, or
 - (c) any IPR resulting from the project, as well as related access rights are allocated to the different collaboration partners in a manner which adequately reflects their work packages, contributions and respective interests, or
 - (d) the research organisations or research infrastructures receive a compensation equivalent to the market price for the IPR which result from their activities and which are transferred to the participating undertakings. The absolute amount of the value of any contribution, both financial and non-financial, of the participating undertakings to the costs of the research organisations or research infrastructures' activities that resulted in the IPR concerned, may be deducted from that compensation.
29. For the purpose of point 28(d), the Commission will consider that the compensation received is equivalent to the market price if it enables the research organisations or research infrastructures concerned to enjoy the full economic benefit of those rights, particularly where one of the following conditions is fulfilled:
- (a) the amount of the compensation has been established by means of a public, open and transparent competitive sale procedure, or
 - (b) an independent expert valuation confirms that the price is equivalent to the market price, or
 - (c) the research organisation or research infrastructure, as seller, can demonstrate that it effectively negotiated the compensation, at arm's length conditions, in order to obtain the maximum economic benefit at the moment when the contract is concluded, while considering of its overall objectives, or
 - (d) in cases where the collaboration agreement provides the collaborating undertaking with a right of first refusal as regards IPR generated by the collaborating research organisations or research infrastructures, where that right is combined with those entities' right to solicit more economically advantageous offers from third parties so that the collaborating undertaking has to match its offer accordingly.
30. If none of the conditions in point 29 are fulfilled, the full value of the contribution of the research organisations or research infrastructures to the project will be considered as aid to the collaborating undertakings, to which normal state aid rules apply.

³⁰ This does not include definite agreements on the market value of resulting IPR and the value of contributions to the project.

2.3. Public procurement of research services

31. Public purchasers may procure research services from undertakings, through both commercial procurement and pre-commercial procurement procedures.
32. As long as an open tender procedure for the public procurement is carried out in accordance with the applicable directives³¹, the Commission will generally consider that no state aid within the meaning of Article 107(1) of the Treaty is granted to the undertakings delivering the relevant research services³².
33. In the absence of an open tender procedure, in particular in the case of pre-commercial procurement³³, the Commission will consider that no state aid is granted to undertakings where the price paid for the relevant services fully reflects the market value of the benefits received by the public purchaser and the risks taken by the participating undertaking, in particular where all of the following conditions are fulfilled:
 - (a) the selection procedure is open, transparent, non-discriminatory and unconditional, and is based on objective selection and award criteria specified in advance of the bidding procedure,
 - (b) the envisaged contractual arrangements describing all rights and obligations of the parties are made available beforehand to all interested bidders,
 - (c) the pre-commercial procurement does not give the provider any preferential treatment in the supply of the final product or service to a public purchaser in the Member State concerned³⁴, and
 - (d) one of the following conditions is fulfilled:
 - all results which do not give rise to IPR may be widely disseminated, for example through publication, teaching or contribution to standardisation bodies in a way that allows other undertakings to reproduce them, and any IPR are fully allocated to the public purchaser, or
 - the service provider to which results giving rise to IPR are allocated is obliged to grant the public purchaser unlimited access to those results free of charge, and to grant access to third parties, for example by way of non-exclusive licenses, under market conditions.
34. Where the conditions in point 33 are not fulfilled, Member States may rely on an individual assessment of the terms of the contract between the public purchaser and the undertaking, without prejudice to its general obligation to notify R&D&I aid pursuant to Article 108(3) of the Treaty.

³¹ See Article 1(11)(a) of Directive 2004/18/EC and Article 1(9)(a) of Directive 2004/17/EC. Likewise, in the case of a restricted procedure within the meaning of Articles 1(11)(b) and 1(9)(b) of those Directives, the Commission will also consider that no state aid is granted to undertakings, unless interested providers are prevented from tendering without valid reasons.

³² This will also be the case where public purchasers procure innovative solutions resulting from a preceding R&D procurement, or non-R&D goods and services whose capacities include a performance level requiring a product, process or organisational innovation.

³³ See the Communication from the Commission - Pre-commercial Procurement: driving innovation to ensure sustainable high quality public services in Europe, COM(2007) 799 final of 14.12.2007.

³⁴ Without prejudice to those procurement procedures and contracts that cover both the development and the subsequent purchase of products, works and services.

3. COMMON ASSESSMENT PRINCIPLES

35. To assess whether a notified aid measure can be considered compatible with the internal market, the Commission generally analyses whether the design of the aid measure ensures that the positive impact of the aid towards an objective of common interest exceeds its potential negative effects on trade and competition.
36. The Communication on state aid modernisation of 8 May 2012 called for the identification and definition of common principles applicable to the assessment of compatibility of all the aid measures carried out by the Commission. For this purpose, the Commission will consider an aid measure compatible with the Treaty only if it satisfies each of the following criteria:
- (a) *contribution to a well-defined objective of common interest*: a state aid measure must aim at an objective of common interest in accordance with Article 107(3) of the Treaty (section 5.1).
 - (b) *need for State intervention*: a state aid measure must be targeted towards a situation where aid can bring about a material improvement that the market cannot deliver itself, for example by remedying a market failure or addressing an equity or cohesion concern (section 5.2).
 - (c) *appropriateness of the aid measure*: the proposed aid measure must be an appropriate policy instrument to address the objective of common interest (section 5.3).
 - (d) *incentive effect*: the aid must change the behaviour of the undertaking(s) concerned in such a way that it engages in additional activity, which it would not carry out without the aid or would carry out in a restricted or different manner or location (section 5.4).
 - (e) *proportionality of the aid (aid to the minimum)*: the amount and intensity of the aid must be limited to the minimum needed to induce the additional investment or activity by the undertaking(s) concerned (section 5.5).
 - (f) *avoidance of undue negative effects on competition and trade between Member States*: the negative effects of aid must be sufficiently limited, so that the overall balance of the measure is positive (section 5.6).
 - (g) *transparency of aid*: Member States, the Commission, economic operators, and the public, must have easy access to all relevant acts and to pertinent information about the aid awarded thereunder (section 5.7).
37. The overall balance of certain categories of aid schemes may further be made subject to a requirement of *ex post* evaluation as described in Section 6. In such cases, the Commission may limit the duration of those schemes (normally to four years or less) with a possibility to re-notify their prolongation afterwards.
38. If a state aid measure or the conditions attached to it (including its financing method when it forms an integral part of the measure) entail a non-severable violation of EU law, the aid cannot be declared compatible with the internal market³⁵.

³⁵ See for instance Case C-156/98 *Germany v Commission* [2000] ECR I-6857, paragraph 78 and Case C-333/07 *Régie Networks v Rhone Alpes Bourgogne* [2008] ECR I-10807, paragraphs 94-116.

39. In assessing the compatibility of any individual aid with the internal market, the Commission will take account of any proceedings concerning infringement to Articles 101 or 102 of the Treaty which may concern the beneficiary of the aid and which may be relevant for its assessment under Article 107(3) of the Treaty³⁶.

4. COMPATIBILITY OF AID UNDER ARTICLE 107(3)(B) OF THE TREATY

[The precise definition of important projects of common European interest and modalities for their compatibility assessment will be subject to a separate communication, for which the public consultation will be launched shortly.]

5. COMPATIBILITY OF AID UNDER ARTICLE 107(3)(C) OF THE TREATY

40. State aid for R&D&I can be found compatible with the internal market within the meaning of Article 107(3)(c) of the Treaty where, on the basis of the common assessment principles set out in Section 3, it leads to increased R&D&I activities without adversely affecting trading conditions in a way which goes contrary to the common interest.
41. In this Section, the Commission clarifies how it will apply those common assessment principles and, where applicable, lays down specific conditions for aid schemes and additional ones for individual aid.

5.1. Contribution to a well-defined objective of common interest

5.1.1. General conditions

42. The general objective of R&D&I aid is the promotion of R&D&I in the Union. In doing so, R&D&I aid should contribute to the achievement of the Europe 2020 strategy of delivering smart, sustainable and inclusive growth.
43. Member States considering granting state aid for R&D&I, must precisely define the objective pursued, and in particular explain how the measure intends to promote R&D&I.
44. With respect to aid schemes, the Commission takes a favourable view of notifications of aid measures which are an integral part of a comprehensive national programme or action plan to stimulate R&D&I activities, and are supported by rigorous evaluations of similar past aid measures demonstrating their effectiveness.
45. With respect to state aid which is awarded for projects or activities that are also financed by the Union, either directly or indirectly (that is to say by the Commission, by its executive agencies, by Joint Undertakings established on the basis of Articles 185 and 187 of the Treaty, or by any other implementing bodies where the Union funding is not directly or indirectly under the control of Member States), the Commission will consider that the contribution to a well-defined objective of common interest has been established.

5.1.2. Additional conditions for individual aid

46. To demonstrate that individual aid subject to the notification obligation ('notifiable individual aid') contributes to an increased level of R&D&I activities, Member States

³⁶ See Case C-225/91 *Matra v Commission*, [1993] ECR I-3203, paragraph 42.

may use the following indicators, together with other relevant quantitative or qualitative elements:

- (a) *increase in project size*: increase in the total project costs (without a decrease in spending by the aid beneficiary when compared to the situation without aid); increase in the number of people assigned to R&D&I activities;
- (b) *increase in scope*: increase in the number of the expected deliverables of the project; increase in the level of ambition of the project evidenced by a higher probability of a scientific or technological break-through or a higher risk of failure (notably linked to the long-term nature of the project and uncertainty about its results);
- (c) *increase in speed*: the completion of the project requires less time when compared to the completion time necessary for the same project carried out without aid;
- (d) *increase in total amount spent*: increase in total R&D&I spending by the aid beneficiary, in absolute terms or as a proportion of turnover; changes in the committed budget for the project (without a corresponding decrease in the budget allocated to other projects).

47. In order to conclude that the aid contributes to increasing the level of R&D&I in the Union, the Commission will consider not only the net increase of R&D&I carried out by the undertaking, but also the contribution of the aid to the overall increase of R&D&I spending in the sector concerned, as well as to the improvement of the Union situation with regard to R&D&I in the international context. A favourable view will be taken regarding aid measures, for which a publicly available *ex post* evaluation of their contribution to the common interest is envisaged.

5.2. Need for State intervention

5.2.1. General conditions

48. As explained in Section 3, state aid may be necessary to increase R&D&I in the Union in a situation where the market, on its own, fails to deliver an efficient outcome. In order to assess whether state aid is effective in reaching the objective of common interest, it is first necessary to diagnose the problem, which needs to be addressed. State aid should be targeted towards situations where it can bring about a material improvement that the market cannot deliver on its own. Member States should explain how the aid measure can effectively mitigate the market failure associated with reaching the objective of common interest without that aid.

49. R&D&I takes place through a series of activities, which are usually upstream to a number of product markets, and which exploit available R&D&I capabilities to develop new or improved products, services and processes in those product markets or completely new ones, thereby fostering growth in the economy. However, given the available R&D&I capabilities, market failures may be an obstacle to reaching the optimal output and may lead to an inefficient outcome for the following reasons:

- **positive externalities/knowledge spill-overs**: R&D&I often generate benefits for society in the form of positive spill-over effects, for example knowledge spill-overs or enhanced opportunities for other economic actors to develop complementary products and services. However, if left to the market, a number of projects might have an unattractive rate of return from a private perspective, although they would be beneficial for society, because profit seeking undertakings

cannot sufficiently appropriate the benefits of their actions when deciding about the amount of R&D&I they should undertake. State aid may therefore contribute to implementing projects which result in an overall societal or economic benefit and which would otherwise not be pursued.

However, neither are all benefits of R&D&I activities externalities, nor does the presence of externalities alone automatically mean that state aid is compatible with the internal market. In general, consumers are willing to pay for the direct benefit of new products and services while firms can appropriate the benefits from their investment through other existing instruments, such as IPR. In some cases, however, these means are imperfect and leave a residual market failure that may be corrected by state aid. For instance, as is often argued for fundamental research, it may be difficult to exclude others from gaining access to the results of some activities, which might therefore have a public good character. On the other hand, more specific knowledge related to production can often be well protected, for example through patents, allowing the inventor to reap a higher return on the invention;

- **imperfect and asymmetric information:** R&D&I activities are characterised by a high degree of uncertainty. Under certain circumstances, due to imperfect and asymmetric information, private investors may be reluctant to finance valuable projects and highly-qualified personnel may be unaware of recruitment possibilities in innovative undertakings. As a result, the allocation of human and financial resources may not be adequate and valuable projects for the society or the economy may not be carried out.

In certain cases, imperfect and asymmetric information may also hamper access to finance. However, imperfect information and the presence of risk do not automatically justify the need for state aid. Projects with lower private returns on investments not being financed can very well be a sign of market efficiency. Moreover, risk is part of every business activity and is not a market failure in itself. However, in a context of asymmetric information, risk may exacerbate financing problems;

- **coordination and network failures:** the ability of undertakings to coordinate with each other or interact to deliver R&D&I may be impaired for various reasons, including difficulties in coordinating among a large number of collaboration partners where some of them have diverging interests, problems in designing contracts, and difficulties in coordinating collaboration due for example to sensitive information being shared.

5.2.2. *Additional conditions for individual aid*

50. Whilst certain market failures may hamper the overall level of R&D&I in the Union, not all undertakings and sectors in the economy are affected by those market failures to the same extent. Consequently, for notifiable individual aid, Member States should provide adequate information about whether the aid addresses a general market failure regarding R&D&I in the Union, or a specific market failure regarding, for example, a particular sector or line of business.
51. Depending on the specific market failure to be addressed, the Commission will take into consideration the following elements:

- **knowledge spill-overs:** level of knowledge dissemination envisaged; specificity of the knowledge created; availability of IPR protection; degree of complementarity with other products and services;
 - **imperfect and asymmetric information:** level of risk and complexity of R&D&I activities; need for external finance; characteristics of the aid beneficiary regarding access to external finance;
 - **coordination failures:** number of collaborating undertakings; intensity of collaboration; diverging interest between collaborating partners; problems in designing contracts; problems to coordinate collaboration.
52. In its analysis of an alleged market failure the Commission will in particular take into account any available sectoral comparisons and other studies, which should be provided by the Member State concerned.
53. When notifying investment or operating aid for clusters, Member States must provide information on the planned or expected technological specialisation of the innovation cluster, existing regional potential and presence of clusters in the Union with similar purposes.
54. With respect to state aid which is awarded for projects or activities that are also financed by the Union, either directly or indirectly (that is to say by the Commission, by its executive agencies, by Joint Undertakings established on the basis of Articles 185 and 187 of the Treaty, or by any other implementing bodies where the Union funding is not directly or indirectly under the control of Member States), the Commission will consider that the need for State intervention has been established.
55. On the other hand, where state aid is awarded for projects or activities which, with respect to technological content, level of risk and size, are similar to those already delivered within the Union at market conditions, the Commission will in principle presume that no market failure is present and will require further evidence and justification for the need for State intervention.

5.3. Appropriateness of the aid measure

5.3.1. *Appropriateness among alternative policy instruments*

56. State aid is not the only policy instrument available to Member States to promote R&D&I activities. It is important to keep in mind that there may be other, better placed instruments such as demand-side measures involving regulation, public procurement or standardisation, as well as increase in funding of public research and education and general tax measures³⁷. The appropriateness of a policy instrument in a given situation is normally linked to the nature of the problem that is being addressed. For instance, reducing market barriers may be more appropriate than state aid to deal with a new entrant's difficulty to appropriate R&D&I results. Increased investment in education may be more appropriate to deal with a lack of qualified personnel than granting state aid.
57. Aid for R&D&I can be authorised under Article 107(3)(c) of the Treaty when it is necessary to achieve an objective of common interest, as an exception to the general prohibition of state aid. An important element in this respect is therefore whether and to what extent aid for R&D&I can be considered an appropriate instrument to

³⁷ See the Commission notice on the application of the state aid rules to measures relating to direct business taxation (OJ C 384, 10.12.1998, p. 3) [*or notice on the notion of aid*].

increase R&D&I activities, given that other less distortive instruments may achieve the same results.

58. In its compatibility analysis, the Commission will take particular account of any impact assessment of the proposed measure carried out by the Member State concerned. Measures, for which Member States have considered other policy options and for which the advantages of using a selective instrument such as state aid are established and submitted to the Commission, are considered to constitute an appropriate instrument.
59. With respect to state aid which is awarded for projects or activities that are also financed by the Union, either directly or indirectly (that is to say by the Commission, by its executive agencies, by Joint Undertakings established on the basis of Articles 185 and 187 of the Treaty, or by any other implementing bodies where the Union funding is not directly or indirectly under the control of Member States), the Commission will consider that the appropriateness of the aid measure has been established.

5.3.2. *Appropriateness among different aid instruments*

60. State aid for R&D&I can be awarded in various forms. Member States should therefore ensure that the aid is awarded in the form that is likely to generate the least distortions of competition and trade. In this respect, where the aid is awarded in forms that provide a direct pecuniary advantage (such as direct grants, exemptions or reductions in taxes or other compulsory charges, or the supply of land, goods or services at favourable prices), the Member State concerned must include an analysis of other options and explain why or how other potentially less distortive forms of aid such as repayable advances or forms of aid that are based on debt or equity instruments (such as state guarantees, the purchase of a share-holding or an alternative provision of debt or capital on favourable terms) are less appropriate.
61. The choice of the aid instrument should be made in view of the market failure which it seeks to address. For instance, where the underlying market failure is a problem of access to external debt finance due to asymmetric information, Member States should normally resort to aid in the form of liquidity support, such as a loan or guarantee, rather than a grant. Where it is also necessary to provide the firm with a certain degree of risk sharing, a repayable advance should normally be the aid instrument of choice. In particular, where aid is granted in a form other than liquidity support or a repayable advance for activities that are close to the market, Member States must justify the appropriateness of the chosen instrument for tackling the specific market failure in question.

5.4. Incentive effect

5.4.1. *General conditions*

62. R&D&I aid can only be found compatible with the internal market if it has an incentive effect. An incentive effect occurs where the aid changes the behaviour of an undertaking in such a way that it engages in additional activities, which it would not carry out or it would carry out in a restricted or different manner without the aid. The aid must however not subsidise the costs of an activity that an undertaking would anyhow incur and must not compensate for the normal business risk of an economic activity.

63. The Commission considers that aid does not present an incentive for the beneficiary wherever work on the relevant R&D&I activity³⁸ has already started prior to the aid application by the beneficiary to the national authorities³⁹. Where works start before the aid application is submitted by the beneficiary to the national authorities, the project will not be eligible for aid.
64. The aid application must include at least the applicant's name and size, a description of the project, including its location and start and end dates, the amount of aid needed to carry it out, and a list of eligible costs.
65. On the basis of evaluation studies⁴⁰ provided by Member States, the Commission may consider that R&D&I fiscal aid schemes have an incentive effect by stimulating higher R&D&I spending by undertakings.

5.4.2. *Additional conditions for individual aid*

66. For notifiable individual aid, Member States must demonstrate to the Commission that the aid has an incentive effect and therefore need to provide clear evidence that the aid has a positive impact on the decision of the undertaking to pursue R&D&I activities which would otherwise not have been pursued. To enable the Commission to carry out a comprehensive assessment of the aid measure in question, the Member State concerned must provide not only information concerning the aided project but also, to the extent possible, a comprehensive description of what would have happened or could reasonably have been expected to happen without aid, that is to say the counterfactual scenario, which may consist in the absence of an alternative project or relate to an alternative project that is wholly or partly carried out outside the Union.
67. In its analysis, the Commission will take into consideration the following elements:
- **specification of intended change:** the change in behaviour which is expected to result from state aid, that is to say whether a new project is triggered, or the size, scope or speed of a project is enhanced, has to be well specified;
 - **counterfactual analysis:** the change of behaviour has to be identified by comparing what would be the expected outcome and level of intended activity be with and without aid. The difference between the two scenarios shows the impact of the aid measure and its incentive effect;
 - **level of profitability:** where a project would not, in itself, be profitable to undertake for a private undertaking, but would generate important benefits for society, it is more likely that the aid has an incentive effect;
 - **amount of investment and timeframe of cash flows:** a high start-up investment, a low level of appropriable cash flows and a significant fraction of

³⁸ If the aid application is for an R&D project, this does not exclude that the potential beneficiary would have already carried out feasibility studies which are not covered by the request for aid.

³⁹ In the case of aid granted under an automatic fiscal scheme, this means that such scheme should have been adopted before any work on the aided project or activity starts.

⁴⁰ Even though this may not be possible *ex ante* for a newly introduced fiscal state aid measure, Member States will be expected to provide evaluation studies on the incentive effect of their own fiscal measures (so that planned or intended methodologies for *ex post* evaluations should normally be part of the design of such measures). In the absence of any evaluation studies, the incentive effect of fiscal aid schemes may be presumed only for incremental measures.

the cash flow arising in the very far future or in a very uncertain manner, will be considered positive elements in assessing the incentive effect;

- **level of risk involved:** the assessment of risk will in particular take into account the irreversibility of the investment, the probability of commercial failure, the risk that the project will be less productive than expected, the risk that the project undermines other activities of the aid beneficiary and the risk that the project costs undermine its financial viability.
68. Member States are in particular invited to rely on board documents, risk assessments, financial reports, internal business plans, expert opinions and other studies related to the project under assessment. Documents containing information on demand forecasts, cost forecasts, financial forecasts, documents that are submitted to an investment committee and that describe in detail various investment scenarios, or documents provided to financial institutions could help Member States demonstrate the incentive effect.
69. In order to ensure that the incentive effect is established on an objective basis, the Commission may in its assessment compare company-specific data with data concerning the industry in which the aid beneficiary is active. In particular, Member States should where possible provide industry-specific data demonstrating that the company's counterfactual scenario, its required level of profitability and its expected cash-flows are reasonable.
70. In that context, the level of profitability can be evaluated by reference to methodologies which are demonstrably used by the beneficiary company or are standard practice in the particular industry concerned, and which may include methods for evaluating the net present value of the project (NPV)⁴¹, the internal rate of return (IRR)⁴² or the average return on capital employed (ROCE).
71. If the aid does not change the behaviour of the beneficiary by stimulating additional R&D&I activities, it has no positive effects in terms of promoting R&D&I in the Union. Therefore, aid will not be considered compatible with the internal market in cases where it appears that the same activities could and would be pursued even without the aid.

5.5. Proportionality of the aid

5.5.1. General conditions

72. For any R&D&I aid to be considered proportional, its amount must be limited to the minimum needed for carrying out the aided activity.

5.5.1.1. Maximum aid intensities

73. In order to ensure that the level of aid is proportionate to the market failures which it intends to address, the aid must be determined in relation to a predefined set of eligible costs and limited to a certain proportion of those eligible costs (aid intensity). The aid intensity must be established for each beneficiary of aid, including in a collaboration project.

⁴¹ The net present value of a project is the difference between the positive and negative cash flows over the lifetime of the investment, discounted to their current value (using the cost of capital).

⁴² The IRR is not based on accounting earnings in a given year, but takes into account the stream of future cash flows that the investor expects to receive over the entire lifetime of the investment. It is defined as the discount rate for which the NPV of a stream of cash flows equals zero.

74. To ensure predictability and a level playing field, the Commission applies maximum aid intensities for R&D&I aid, which are established on the basis of three criteria: (i) the closeness of the aid to the market, as a proxy for its expected negative effects and the need for it, taking into account the potential higher revenues that can be expected from the aided activities; (ii) the size of the beneficiary as a proxy for the more acute difficulties generally faced by smaller companies to finance a risky project; and (iii) the acuteness of the market failure, such as the expected externalities in terms of dissemination of knowledge. Therefore, aid intensities should generally be lower for activities linked to development and innovation than for research activities.
75. The eligible costs for each aid measure covered by this framework are laid down in Annex I. When an R&D project encompasses different tasks, each eligible task must fall under the categories of fundamental research, industrial research or experimental development⁴³. When classifying different activities according to the relevant category, the Commission will refer to its own practice as well as to the specific examples and explanations provided in the OECD Frascati Manual⁴⁴.
76. The maximum aid intensities generally applicable to all eligible R&D&I measures are laid down in Annex II⁴⁵.
77. In the case of state aid for a project being carried out in collaboration between research organisations and undertakings, the combination of direct public support and, where they constitute aid, contributions from research organisations to the same project may not exceed the applicable aid intensities for each benefiting undertaking.

5.5.1.2. Repayable advances

78. If a Member State grants a repayable advance which qualifies as state aid within the meaning of Article 107(1) of the Treaty, the rules laid down in this section apply.
79. Where a Member State can demonstrate, on the basis of a valid methodology based on sufficient verifiable data, that it is possible to calculate the gross grant equivalent of a repayable advance, it may notify an aid scheme and the associated methodology to the Commission. If the Commission accepts the methodology and deems the scheme compatible, the aid may be granted on the basis of the gross grant equivalent of the repayable advance, up to the aid intensities laid down in Annex II.
80. In all other cases, the repayable advance is expressed as a percentage of the eligible costs and may exceed the applicable maximum aid intensities by 10 percentage points, provided that the following conditions are fulfilled:
- (a) in case of a successful outcome, the measure must provide that the advance is repaid with an interest rate not less than the discount rate resulting from the

⁴³ This qualification does not necessarily need to follow a chronological approach, moving sequentially over time from fundamental research to activities closer to the market. Accordingly, nothing will prevent the Commission from classifying a task which is carried out at a later stage of a project as industrial research, while finding that an activity carried out at an earlier stage constitutes experimental development or is not research at all.

⁴⁴ The Measurement of Scientific and Technological Activities, Proposed Standard Practice for Surveys on Research and Experimental Development, Frascati Manual, Organisation for Economic Co-operation and Development, 2002, as amended or replaced.

⁴⁵ Without prejudice to specific provisions applying to aid for research and development in the agricultural and fisheries sectors, as laid down in a block exemption Regulation.

application of the Communication from the Commission on the revision of method for setting the reference and discount rates⁴⁶;

- (b) in case of a success exceeding the outcome defined as successful, the Member State concerned should request payments beyond repayment of the advance amount including interest according to the applicable discount rate;
- (c) in case the project fails, the advance does not have to be fully repaid. In case of partial success, the repayment should be proportional to the degree of success achieved.

81. For the Commission to assess the measure, it must include detailed provisions on the repayment in case of success, which clearly define what will be considered as a successful outcome, on the basis of reasonable and prudent hypothesis.

5.5.1.3. Fiscal measures

82. The aid intensity of an R&D&I fiscal aid measure can be calculated either on the basis of individual projects or, at the level of an undertaking, as the ratio between the overall tax relief and the sum of all eligible R&D&I costs incurred in a period not exceeding three consecutive fiscal years. In the latter case, the R&D&I fiscal aid measure may apply without distinction to all eligible activities, but must not exceed the applicable aid intensity for experimental development⁴⁷.

5.5.1.4. Cumulation of aid

83. Aid may be awarded concurrently under several aid schemes or cumulated with *ad hoc* aid, provided that the total amount of state aid for an activity or project does not exceed the limits fixed by the aid ceilings laid down in this framework. As recalled in point 9, Union funding centrally managed by the Commission, either directly or indirectly, does not constitute state aid and should not be taken into account. Where such Union funding is combined with other public funding, the total amount of public funding granted in relation to the same eligible costs must however not exceed the maximum funding rate(s) laid down in the applicable European regulations.

84. Where the expenditure eligible for R&D&I aid is potentially eligible in whole or in part also for aid for other purposes, the overlapping portion will be subject to the most favourable ceiling under any of the relevant rules.

85. Aid for R&D&I may not be cumulated with *de minimis* support in respect of the same eligible costs if that would result in an aid intensity exceeding those laid down in this framework.

5.5.2. Additional conditions for individual aid

86. For notifiable individual aid, mere compliance with a set of predefined maximum aid intensities is not sufficient to ensure proportionality.

87. As a general rule, notifiable individual aid will be considered to be limited to the minimum only if the aid amount does not exceed the net extra costs of implementing the R&D&I activities concerned, compared to the counterfactual project that would be undertaken in the absence of aid. In order to establish the net extra costs, the Commission will compare the expected net present values of the investment in the

⁴⁶ OJ C 14, 19.1.2008, p. 6.

⁴⁷ Conversely, where a fiscal aid measure distinguishes between different R&D categories, the relevant aid intensities must not be exceeded.

aided project and the counterfactual project, account being taken of the probabilities of different business scenarios occurring⁴⁸. All relevant expected costs and benefits must be taken into account over the lifetime of the project, including the costs and revenues stemming from the results of the R&D&I activities.

88. In the absence of an alternative project, the Commission will verify whether the aid amount exceeds the minimum necessary for the aided project to be sufficiently profitable, for example by increasing its IRR beyond the sector or firm specific benchmark or hurdle rate. When those benchmarks are not readily available, normal rates of return required by the beneficiary company in other R&D&I projects, the cost of capital of the company as a whole or returns commonly observed in the industry concerned may be used for this purpose.
89. Where aid is granted for R&D projects or for the construction or upgrade of research infrastructures and where the Commission can establish, on the basis of its assessment of the net extra costs, that the aid is strictly limited to the minimum necessary, higher maximum aid intensities than those laid down in Annex II may be allowed, up to the levels set out in the following table.

	Small enterprise	Medium-sized enterprise	Large enterprise
Aid for R&D projects			
Fundamental research	100 %	100 %	100 %
Applied research	80 %	70 %	60 %
- subject to collaboration between undertakings (for large undertakings cross-border or with at least one SME) or between an undertaking and a research organisation; or - subject to dissemination of results	90 %	80 %	70 %
Aid for the construction and upgrade of research infrastructures	60 %	60 %	60 %

90. In order to demonstrate that aid is limited to the minimum necessary, Member States must explain how the aid amount has been established. Documentation and calculations used for the analysis of the incentive effect can also be used to assess whether the aid is proportionate. Insofar as the identified need for aid relates mainly to difficulties in attracting debt finance from the market, rather than to a lack of profitability, a particularly apt way to ensure that the aid is kept to the minimum may be to provide it in the form of a loan, guarantee or repayable advance instead of a non-repayable form, such as a grant.
91. Where there are multiple potential candidates for undertaking the aided activity, the proportionality requirement is more likely to be met if the aid is awarded on the basis of transparent, objective and non-discriminatory criteria.

⁴⁸ In the particular case where aid merely allows for an increase in the speed of completion of the project, the comparison should mostly reflect the different timelines in terms of cash flows and delayed entry in the market.

92. In order to address actual or potential direct or indirect distortions of international trade, and under the condition that aid is kept to the minimum necessary, higher intensities than generally permissible under this framework may be authorised if, directly or indirectly, competitors located outside the Union have received in the last three years or are going to receive aid of an equivalent intensity for similar projects⁴⁹. Where possible, the Member State concerned will provide the Commission with sufficient information to enable it to assess the situation, in particular the need to take account of the competitive advantage enjoyed by a third country competitor. Where the Commission does not have evidence concerning the granted or proposed aid, it may also base its decision on circumstantial evidence, as acquired for instance through the use of its investigative powers⁵⁰.

5.6. Avoidance of undue negative effects on competition and trade

5.6.1. General considerations

93. For R&D&I aid to be compatible with the internal market, the negative effects of the aid measure in terms of distortions of competition and impact on trade between Member States must be limited and outweighed by the positive effects in terms of contribution to the objective of common interest.
94. The Commission identifies two main potential distortions of competition and trade between Member States caused by R&D&I aid, namely product market distortions which lead mainly to allocation inefficiencies, undermining the economic performance of the internal market, and location effects which may lead to both allocation inefficiencies and distributional concerns, affecting the distribution of economic activity across regions.
95. As far as distortions on the product markets are concerned, state aid for R&D&I may impact on competition in the innovation process and in the product markets where the results of the R&D&I activities are exploited.

5.6.1.1. Effects on product markets

96. State aid for R&D&I can hamper competition in product markets in three ways, namely by distorting the competitive entry and exit process, by distorting dynamic investment incentives and by creating or maintaining market power.

(i) Distorting the competitive entry and exit process

97. R&D&I aid may prevent the market mechanism from rewarding the most efficient producers and putting pressure on the least efficient to improve, restructure or exit the market. That might lead to a situation where, due to the aid granted, competitors that would otherwise be able to stay on are forced out of the market, or never enter in the first place. Similarly, state aid can prevent inefficient firms leaving the market or even induce them to enter and gain market shares from otherwise more efficient competitors. If not correctly targeted, R&D&I aid may therefore support inefficient undertakings and lead to market structures where many players operate significantly below efficient scale. In the long run, interfering with the competitive entry and exit process may stifle innovation and slow down industry-wide productivity improvements.

⁴⁹ However, where distortions of international trade are likely to occur after more than three years, given the particular nature of the sector in question, the reference period may be extended accordingly.

⁵⁰ See Article 1(3) of Council Regulation (EU) No 734/2013 of 22 July 2013, OJ L 204, 31.7.2013, p. 15.

(ii) Distorting dynamic incentives

98. R&D&I aid may distort the competitors' dynamic incentives to invest. When an undertaking receives aid, the likelihood of successful R&D&I activities on its part generally increases, leading to an increased presence on the relevant product market(s) in the future. That increased presence may lead competitors to reduce the scope of their original investment plans (crowding out effect).
99. Furthermore, the presence of aid may make potential beneficiaries complacent or more risk seeking. The long run effect on the overall performance of the sector is in this case likely to be negative. R&D&I aid may therefore, if not correctly targeted, support inefficient undertakings and lead to market structures where many market players operate significantly below efficient scale.

(iii) Creating market power

100. Aid for R&D&I may also have distortive effects in terms of increasing or maintaining the degree of market power in product markets. Market power is the power to influence market prices, output, the variety or quality of goods and services, or other parameters of competition for a significant period of time, to the detriment of consumers. Even where aid does not strengthen market power directly, it may do so indirectly, by discouraging the expansion of existing competitors or inducing their exit or discouraging the entry of new competitors.

5.6.1.2. Effects on trade and location choice

101. State aid for R&D&I may also give rise to distortions of competition when it influences the choice of a location. Those distortions can arise across Member States, either when firms compete across borders or consider different locations. Aid aimed at relocating an activity in another region within the internal market may not lead directly to a distortion in the product market, but it displaces activities or investments from one region into another.

5.6.1.3. Manifest negative effects

102. In principle, an aid measure and the context in which it is applied need to be analysed to identify the extent to which it can be deemed distortive. However, certain situations can be identified where the negative effects manifestly outweigh any positive effects, meaning that the aid cannot be found compatible with the internal market.
103. In particular, according to general Treaty principles, state aid cannot be considered compatible with the internal market if the aid measure is discriminatory to an extent not justified by its state aid character. As explained in Section 3, the Commission will thus not allow any measure where such measure or the conditions attached to it entail a non-severable violation of Union law. This is particularly the case for aid measures where the grant of aid is subject to the obligation for the beneficiary to have its central seat in the relevant Member State (or to be predominantly established in that Member State) or to use nationally produced goods or national services, as well as for aid measures restricting the possibility for the beneficiary to exploit the R&D&I results in other Member States.

5.6.2. Aid schemes

104. In order to be compatible with the internal market, aid schemes must not lead to significant distortions of competition and trade. In particular, even where distortions may be considered limited at individual level (provided the aid is necessary and

proportional to achieve the common objective), on a cumulative basis aid schemes might still lead to high levels of distortions. Such distortions may for instance result from aid that negatively affects dynamic incentives to innovate on the part of competitors. In the case of a scheme focusing on certain sectors, the risk of that kind of distortions is even more pronounced.

105. Therefore, Member States have to demonstrate that any negative effects will be limited to the minimum taking into account, for example, the size of the projects concerned, the individual and cumulative aid amounts, the number of expected beneficiaries as well as the characteristics of the targeted sectors. In order to enable the Commission to assess the likely negative effects of aid schemes, Member States may submit any impact assessment as well as *ex-post* evaluations carried out for similar predecessor schemes.

5.6.3. *Additional conditions for individual aid*

5.6.3.1. Distortions in product markets

106. For notifiable individual aid, in order to enable the Commission to identify and assess potential distortions of competition and trade, Member States should provide information on (i) the product markets concerned, that is to say the markets affected by the change in behaviour of the aid beneficiary, and (ii) the competitors and customers or consumers affected.

107. In assessing the negative effects of the aid measure, the Commission will focus its analysis of the distortions of competition on the foreseeable impact of the R&D&I aid on competition between undertakings in the product markets concerned. The Commission will give more weight to risks for competition and trade that arise in the near future and with particular likelihood.

108. The impact on competition in the innovation process will be relevant insofar as it has a foreseeable impact on the outcome of future product market competition. To the extent that a specific innovative activity will be associated with multiple future product markets, the impact of state aid will be looked upon on the set of markets concerned. In certain cases the results of R&D&I activities, for example in the form of IPR, are themselves traded in technology markets, for instance through patent licensing. In those cases, the Commission may also consider the effect of the aid on competition in technology markets.

109. The Commission will use various criteria to assess the potential distortions of competition, namely distorting dynamic incentives, creating or maintaining market power, and maintaining inefficient market structures.

(i) Distorting dynamic incentives

110. In its analysis of the potential distortion of dynamic incentives, the Commission will consider the following elements:

- *Market growth*: the more the market is expected to grow in the future, the less likely that the competitors' incentives are negatively affected by the aid, given that there remain ample opportunities to develop a profitable business;
- *Aid amount*: aid measures which involve significant amounts of aid are more likely to lead to significant crowding out effects. The significance of the aid amount will be measured mainly with reference to the amount spent by the main market players on projects of a similar kind;

- *Closeness to the market / category of the aid*: the more the aid measure is aimed at activities close to the market, the more it is liable to develop significant crowding out effects;
- *Open selection process*: where the aid is awarded on the basis of objective and non-discriminatory criteria, the Commission will take a more positive stance;
- *Exit barriers*: competitors are more likely to maintain, or even to increase their investment plans when exit barriers to the innovation process are high. That may be the case when many of the competitors' past investments are locked in to a particular R&D&I trajectory;
- *Incentives to compete for a future market*: R&D&I aid may lead to a situation where competitors to the aid beneficiary renounce competing for a future "winner takes all" market, because the advantage provided by the aid, in terms of degree of technological advance, economies of scale, network effects or timing, reduces their possibility to profitably enter that future market;
- *Product differentiation and intensity of competition*: where product innovation is rather about developing differentiated products, related for example to distinct brands, standards, technologies or consumer groups, competitors are less likely to be affected. The same situation arises where there are many effective competitors in the market.

(ii) *Creating or maintaining market power*

111. The Commission is concerned mainly about those R&D&I measures allowing the aid beneficiary to strengthen market power held on existing product markets or to transfer it to future product markets. The Commission is therefore unlikely to identify competition concerns related to market power in cases where the aid beneficiary has a market share below 25% and in markets with a market concentration below 2000 on the Herfindahl-Hirschman Index (HHI).
112. In its analysis of market power, the Commission will consider the following elements:
- *Market power of the aid beneficiary and market structure*: where the aid recipient is already dominant on a product market, the aid measure may reinforce that dominance by further weakening the competitive constraint that competitors can exert on the recipient undertaking. Similarly, state aid measures may have a significant impact in oligopolistic markets where only a few players are active;
 - *Level of entry barriers*: in the field of R&D&I, there may be significant barriers to entry for new entrants. Those barriers include legal entry barriers (in particular IPR), economies of scale and scope, access barriers to networks and infrastructure, and other strategic barriers to entry or expansion;
 - *Buyer power*: the market power of an undertaking may also be limited by the market position of the buyers. The presence of strong buyers can serve to counter a finding of a strong market position if it is likely that the buyers will seek to preserve sufficient competition in the market;
 - *Selection process*: aid measures which allow undertakings with a strong market position to influence the selection process, for example by having the right to recommend undertakings in the selection process or influencing the research path in a way which disfavours alternative paths on unjustified grounds, are liable to raise concern by the Commission.

(iii) Maintaining inefficient market structures

113. In its analysis of market structures, the Commission will consider whether the aid is granted in markets featuring overcapacity or in declining industries. Situations where the market is growing or where state aid for R&D&I is likely to change the overall growth dynamics of the sector, notably by introducing new technologies, are less likely to give rise to concerns.

5.6.3.2. Location effects

114. In particular where R&D&I aid is close to the market, it may result in some territories benefiting from more favourable conditions in respect of subsequent production, particularly because of comparatively lower production costs as a result of the aid or due to higher levels of R&D&I activities pursued through the aid. This may lead companies to re-locate to those territories.

115. Location effects may also be relevant to research infrastructures. If aid is mainly used to attract an infrastructure to a particular region at the expense of another, it will not contribute to promoting further R&D&I activities in the Union.

116. In its analysis of notifiable individual aid, the Commission will accordingly take into account any evidence that the aid beneficiary has considered alternative locations.

5.7. Transparency

117. Member States must publish on a single website at least the following information about the notified state aid measures: (i) the full text of the aid scheme and its implementing provisions, or legal basis for individual aid; (ii) the name of the aid granting authority; (iii) the individual beneficiaries; and (iv) the aid amount and aid intensity per beneficiary. That information must be published after the granting decision has been taken, must be kept for at least 10 years and be available for the general public without restrictions⁵¹.

6. EVALUATION

118. To further ensure that distortions of competition and trade are limited, the Commission may require that certain aid schemes be subject to a time limitation (of normally four years or less) and to the evaluation referred to in point 48. Evaluations should in particular be carried out for schemes where the potential distortions are particularly high, that is to say schemes that may risk to significantly restrict competition if their implementation is not reviewed in due time.

119. Given its objectives and in order not to put a disproportionate burden on Member States and on smaller aid measures, this requirement applies only for aid schemes with large aid budgets, containing novel characteristics or when significant market, technology or regulatory changes are foreseen. The evaluation must be carried out by an expert independent from the aid granting authority on the basis of a common methodology⁵² and must be made public.

120. The evaluation must be submitted to the Commission in due time to allow for the assessment of the possible prolongation of the aid scheme and in any case upon its

⁵¹ This information should be regularly updated (for example every six months) and shall be available in non-proprietary formats.

⁵² Such a common methodology may be provided by the Commission.

expiry. The precise scope and modalities of each evaluation will be defined in the decision approving the aid scheme. Any subsequent aid measure with a similar objective must take into account the results of the evaluation.

7. REPORTING AND MONITORING

121. In accordance with Council Regulation (EU) No 734/2013 of 22 July 2013 amending Regulation (EC) No 659/1999 laying down detailed rules for the application of Article 93 of the EC Treaty⁵³ and Commission Regulation (EC) No 794/2004 of 21 April 2004 implementing Regulation (EC) No 659/1999⁵⁴, Member States must submit annual reports to the Commission.
122. Member States must maintain detailed records regarding all aid measures. Such records must contain all information necessary to establish that the conditions regarding eligible costs and maximum aid intensities have been fulfilled. Those records must be maintained for 10 years from the date of award of the aid and must be provided to the Commission upon request.

8. ENTRY INTO FORCE AND APPLICABILITY

123. This framework enters into force on 1st July 2014. The Commission will apply this framework for the compatibility assessment of all notified R&D&I aid in respect of which it is called upon to take a decision after its entry into force. Unlawful R&D&I aid will be assessed in accordance with the rules in force at the date on which the aid was granted.
124. Pursuant to Article 108(1) of the Treaty, the Commission proposes that Member States should amend, where necessary, their existing R&D&I aid schemes in order to bring them into line with this framework within six months after its entry into force.
125. Member States are invited to give their explicit unconditional agreement to the proposed appropriate measures within two months from the date of publication of this framework in the *Official Journal of the European Union*. In the absence of a reply from any of the Member States, the Commission will assume that the Member State in question does not agree with the proposed measures.

9. REVISION

126. The Commission may decide to review or amend this framework at any time should it be necessary for reasons associated with competition policy or in order to take account of other Union policies and international commitments or for any other justified reason.

⁵³ OJ L 204, 31.7.2013, p. 15.

⁵⁴ OJ L 140, 30.4.2004, p. 1.

ANNEX I - ELIGIBLE COSTS

Aid for R&D projects	<ul style="list-style-type: none"> (a) Personnel costs (researchers, technicians and other supporting staff to the extent employed on the project). (b) Costs of instruments and equipment to the extent and for the period used for the project. If such instruments and equipment are not used for their full life for the project, only the depreciation costs corresponding to the life of the project, as calculated on the basis of good accounting practice, are considered as eligible. (c) Costs for building and land, to the extent and for the duration used for the project. With regard to buildings, only the depreciation costs corresponding to the life of the project, as calculated on the basis of good accounting practice are considered as eligible. For land, costs of commercial transfer or actually incurred capital costs are eligible. (d) Cost of contractual research, technical knowledge and patents bought or licensed from outside sources at arm's length conditions, as well as costs of consultancy and equivalent services used exclusively for the project. (e) Additional overheads incurred directly as a result of the project. (f) Other operating expenses, including costs of materials, supplies and similar products incurred directly as a result of the project.
Aid for feasibility studies	Costs of study.
Aid for the construction and upgrade of research infrastructures	Investment costs in intangible and tangible assets.
Innovation aid for SMEs	<ul style="list-style-type: none"> (a) Costs for obtaining, validating and defending patents and other intangible assets. (b) Costs for secondment of highly qualified personnel from a research and knowledge dissemination organisation or a large enterprise, working on R&D&I activities in a newly created function within the beneficiary and not replacing other personnel. (c) Costs for innovation advisory and support services.

Aid for process and organisational innovation	Personnel costs; costs of instruments, equipment, buildings and land to the extent and for the period used for the project; costs of contractual research, knowledge and patents bought or licensed from outside sources at arm's length conditions; additional overheads and other operating costs, including costs of materials, supplies and similar products, incurred directly as a result of the project.
Aid for innovation clusters	
Investment aid	Investment costs in tangible and intangible assets.
Operating aid	Personnel and administrative costs (including overhead costs) relating to: <ul style="list-style-type: none"> (a) animation of the cluster to facilitate collaboration, information sharing and the provision or channelling of specialised and customised business support services; (b) marketing of the cluster to increase participation of new undertakings or organisations and to increase visibility; (c) management of the cluster's facilities; and (d) organisation of training programmes, workshops and conferences to support knowledge sharing and networking and transnational cooperation.

ANNEX II - MAXIMUM AID INTENSITIES

	Small enterprise	Medium-sized enterprise	Large enterprise
Aid for R&D projects			
Fundamental research	100 %	100 %	100 %
Industrial research	70 %	60 %	50 %
- subject to collaboration between undertakings (for large undertakings, cross-border or with at least one SME) or between an undertaking and a research organisation; or - subject to dissemination of results	80 %	75 %	65 %
Experimental development	45 %	35 %	25 %
- subject to collaboration between undertakings (for large undertakings, cross-border or with at least one SME) or between an undertaking and a research organisation; or - subject to dissemination of results	60 %	50 %	40 %
Aid for feasibility studies	50 %	50 %	50 %
Aid for the construction and upgrade of research infrastructures	50 %	50 %	50 %
Innovation aid for SMEs	50 %	50 %	-
Aid for process and organisational innovation	50 %	50 %	15 %
Aid for innovation clusters			
Investment aid	50 %	50 %	50 %
Operating aid	50 %	50 %	50 %