RECOVERY AND RESILIENCE FACILITY – STATE AID

Guiding template: Cloud capabilities

Link to European Flagship: Scale Up

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I. Objective of the guiding template

1. The coronavirus pandemic has changed the economic outlook for the years to come in the European Union. Investments and reforms in the context of the Recovery and Resilience Facility (the "Facility") are contributing to convergence and a sustainable economic recovery. Carrying out reforms and investing in the EU's common priorities, notably green, digital and social resilience will help create jobs and sustainable growth, while modernising our economies, and allow the EU to recover in a balanced, forward-looking and sustained manner.

2. The Facility aims at mitigating the economic and social impact of the coronavirus pandemic and at making the EU economies and societies more sustainable, resilient and better prepared for the challenges and opportunities of the twin green and digital transitions. The Facility is also at the heart of the implementation of the REPowerEU Plan,[1] the Commission's response to the socio-economic hardships and global energy market disruption caused by Russia's invasion of Ukraine. Therefore, if Member States want to obtain additional financing for key investments and reforms that will help achieve the REPowerEU objectives, they must add a REPowerEU chapter to their national recovery and resilience plans.[2]

3. The objectives of REPowerEU are, amongst others, to increase the resilience, security and sustainability of the EU's energy system through the needed decrease of dependence on fossil fuels and diversification of energy supplies at EU level, including by increasing the uptake of renewables, energy efficiency and energy storage capacity.

4. State aid rules apply in the framework of the Facility. Member States should therefore ensure that all investments comply with EU State aid rules and follow all regular procedures and rules[3].

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1 Commission staff working document, REPowerEU Plan, COM(2022) 230 final, 18.5.2022

2 See Regulation (EU) 2023/435 of the European Parliament and of the Council of 27 February 2023 amending Regulation (EU) 2021/241 as regards REPowerEU chapters in recovery and resilience plans and amending Regulations (EU) No 1303/2013, (EU) 2021/1060 and (EU) 2021/1755, and Directive 2003/87/EC, OJ L 63, 28.2.2023, p. 1.

3 See Commission staff working document - Guidance to Member States Recovery and Resilience Plans - Part 1, SWD(2021) 12 final, published on 22.1.2021 (https://commission.europa.eu/document/7c55aadf-6b8d-4d9c-a930-bc7ef8656de1_en) and Commission Notice- Guidance on Recovery and Resilience Plans in the context of REPowerEU, 2023/C 80/01 published on 3.3.2023 (https://eur-lex.europa.eu/legal-

5. With this guiding template, DG Competition aims at assisting Member States with the State aid elements of their recovery plans and the dedicated REPowerEU chapters, and to provide guidance on the State aid-related aspects of those investments which are expected to be most common.

6. The investments covered by this guiding template have been chosen in line with the European flagships of the Commission's Annual Sustainable Growth Strategy 2021.[4] The template has been updated because of its relevance for investments and reforms contributing to REPowerEU objectives.The guiding template follows a uniform structure, providing sector-specific guidance as to when:

    i. Instances in which the existence of State aid may be excluded, and therefore a prior notification to the Commission is not necessary;

    ii. State aid would be involved but no notification is necessary, and specific rules may apply (in case of aid exempted from the notification obligation); and

    iii. State aid would be involved and a notification is necessary, with reference to the main applicable State aid rules.

7. The guiding template also contains 'boxes' with examples of the State aid assessment of the investments and reforms contained in the components published by the Commission,[5] per flagship. The aim is merely illustrative, to provide additional clarifications to Member States on the State aid assessment contained in those components.

II. Description of the investments

8. Cloud capabilities refers to cloud and edge capabilities for data processing, which can be central and/or distributed. Data processing can be of different levels of intensity, from data storage to the processing of data on platforms or in applications[6]. Edge computing is a distributed computing paradigm that brings computation and data storage closer to the location where it is needed, to improve response times and save bandwidth.

9. The objective of investments in cloud and edge capabilities is to strengthen Europe's innovative performance in developing and deploying the **next generation of data processing**, which requires cloud and edge capabilities. These investments directly contribute to the *Scale Up* flagship[7] and to the EU digital transition and should help achieving EU sustainability objectives. They should also facilitate the increase of the

content/EN/TXT/PDF/?uri=CELEX:52023XC0303(01)&from=EN). Also, the relevant public procurement rules must be respected, where applicable.

4 Communication from the Commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank — Annual Sustainable Growth Strategy 2021, COM/2020/575 final.

5 Available at https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en#example-of-component-of-reforms-and-investments.

6 Data storage (Infrastructure-as-a-Service (IaaS)); processing of data on platforms (Platform-as-a-Service (PaaS)); processing of data in applications (Software-as-a-Service (SaaS); Regulation 2018/1807 on a framework for the free flow of non-personal data in the European Union, OJ L 303, 28.11.2018, p. 59.

7 See https://ec.europa.eu/info/files/examples-component-reforms-and-investment-scale_en.

share of EU companies using advanced cloud services and big data by 2025, as anchored in the 2021 Annual Sustainable Growth Strategy.

10. In general, investments in cloud and edge capabilities can be categorized according to the following categories:

- **Cloud and edge infrastructures** (e.g. data centres, edge nodes, servers, racks, interconnection cables, hardware), and, related thereto, **new technologies for environmental sustainability that are embedded** into the existing and new cloud and edge infrastructures (such as for waste (heat) recycling or re-use, or for increasing energy efficiency within data centres such as via immerse liquid technics, and in data transmission, such as for low power data lightening processes);
- Low power, interoperable[8] and open source cloud stack[9] **middleware**; and
- **Cloud and edge** (data processing) **services**[10].

11. Under certain conditions, these investments could (at instances partially) qualify for receiving State aid, as further detailed below. In principle, State aid supporting these investments could take different forms, in particular grants, repayable advances or risk finance measures. Less likely, although not excluded, is aid in the form of tax measures.

III. Instances in which the existence of State aid may be excluded

12. The following sections present a comprehensive, but not exhaustive, number of separate instances in which the application of State aid rules or the existence of State aid may be excluded. Given the cumulative nature of the criteria of Article 107(1) TFEU, if one of the following criteria is not met, the presence of State aid can be excluded and therefore there is no need to notify the measure to the Commission prior to its implementation.

13. For investments in infrastructure (e.g. a data centre that is open for use by third parties), it must be assessed whether or not State aid is present at the levels of the owner, the operator, and the users[11].

A. No economic activity

14. Aid for activities that are not of an economic nature[12], i.e. that are not used for offering goods or services on the market, would not be considered State aid. For instance, the

[8] Interoperability is necessary to enable multi-vendor usage and seamless switching of cloud applications and porting of data.

[9] E.g. Operating system, Application Programming Interfaces (APIs) and workloads optimization process, that also encompasses the edge. Middleware could, in a simplified manner, be seen as the software layer between the hardware and the application software. The operating system is an example of middleware.

[10] E.g. SaaS, PaaS, IaaS, data and software services (Proposal of revised Directive on security of network and information systems (NIS2) 2020/0359). Cloud computing services should cover services that allow on-demand and broad remote access to a scalable and elastic pool of shareable and distributed computing resources. Cloud and edge services could be e.g. for training AI, for machine learning, for processing in real time traffic data for autonomous driving, for industrial scale applications and test-beds.

[11] See chapter 7 of the Commission Notice on the notion of State aid as referred to in Article 107(1) of the Treaty on the Functioning of the European Union ("Notice on the notion of State aid"), OJ C 262, 19.7.2016, p. 1.

[12] See paragraph 201 *et seq*. of the Notice on the notion of State aid.

funding of investments that are to be used exclusively by public administrations and are not meant to be commercially exploited is excluded from the application of State aid rules. This concerns, for instance, cases where public funding is allocated to build infrastructure to satisfy the own needs of the public administration in carrying out its public duties, such as to connect only public authorities among themselves, and is not used for any commercial exploitation. However, if such infrastructure is made available for commercial use, the public financing of such infrastructure may constitute State aid.

15. If infrastructure is used for both economic and non-economic activities, public funding thereof will fall under State aid rules only insofar as it covers the costs linked to the economic activities in question. To avoid falling under State aid rules as concerns economic activities, Member States have to ensure that the public funding provided for the non-economic activities cannot be used to cross-subsidise the economic activities, for instance by ensuring that the entity using the infrastructure for commercial purposes pays a market price for this use of the infrastructure and by limiting the public funding only to the net cost of the non-economic activities, to be identified based on a clear separation of accounts.[13]

16. On the digitalisation of public administrations, the State aid guiding template linked to the *Modernise* flagship (State aid guiding template "Digitalisation of public administration, including healthcare") should be consulted[14].

B. No State resources

17. Measures that do not involve the transfer of public resources[15] exclude the existence of State aid.[16]

> See the State aid assessment of the additional examples of investments and reforms contained in the component – Scale Up
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> **Investment B2 – Stimulate the emergence and deployment of the next generation of federated and competitive European cloud to edge services and platforms, leveraging existing initiatives, which respond to new end users' needs in times of post-recovery:** *The envisaged public support measures may amount to State aid depending on the specific structure and purposes of the project if such investments are provided via Member States or, more generally, if they entail public resources.*

C. No selectivity

18. Measures that are of general application and do not favour certain undertakings, or the production of certain goods, are not selective and do not constitute State aid. This can

13 See paragraph 206 of the Notice on the notion of State aid.

14 Available at https://ec.europa.eu/competition/state_aid/what_is_new/template_RFF_digitalisation_of_public_administration.pdf.

15 The concept of 'transfer of public resources' covers many forms, such as direct grants, loans, guarantees, direct investment in the capital of companies and benefits in kind. A positive transfer of funds does not have to occur; foregoing State revenue is sufficient. In addition, the measure must be imputable to the State. See Notice on the notion of State aid, section 3.

16 See Notice on the notion of State aid, paragraph 51. Note that funds under the Facility constitute State resources for the purposes of Article 107(1) TFEU.

be the case, for example, of a general reform of a tax or of the social security contributions under certain conditions.

19. Given the investments assessed in this guiding template, it is however very unlikely that support measures specifically directed at investments in cloud and edge infrastructure, middleware, and cloud and edge services would be deemed non-selective.

D. No advantage

20. An economic benefit would not amount to State aid when the State acts under normal market conditions, i.e. under the same terms and conditions as a private operator in a comparable situation (so-called Market Economy Operator test).

21. If a public authority invests in cloud and edge capabilities under terms comparable to those that a private investor operating under normal market conditions would apply, then State aid would not be involved.[17]

22. Compliance with market conditions would need to be established on an *ex-ante* basis, based on information available at the time the intervention was decided upon (e.g. by means of a business plan based on economic evaluations comparable to those which, in similar circumstances, a rational market economy operator/investor would have had carried out to determine the profitability or economic advantages of the transaction). A transaction's compliance with market conditions can be directly established through transaction-specific market information: where the transaction is carried out '*pari passu*' by public entities and private operators[18]; or where it concerns the sale and purchase of assets, goods and services (or other comparable transactions) carried out through a competitive, transparent non-discriminatory and unconditional tender procedure.[19] If the intervention of the public bodies is not *pari passu* with that of private operators or a transaction has not been realised through a tender, it may be possible to demonstrate that the transaction complies with market conditions through other means, namely benchmarking[20] or other assessment methods.[21]

See the State aid assessment of the additional examples of investments and reforms contained in the component – Scale Up

Reform B1 - Upgrade (where existing) and build the next generation of resilient European, interconnected, real-time, energy efficient, highly secured and distributed cloud to edge data centres and related nodes, for both the private and public sector: *The envisaged public support measures may amount to State aid depending on the specific structure and purposes of the project. For instance, measures to support innovative large cross-border projects to build interconnected, energy efficient, highly secured, real-time and distributed cloud-to-edge data centres and related nodes could be authorised by the Commission: […] It also appears possible to consider that financing of certain projects under this reform that will bring a significant private participation could rule out the presence of State aid. If at least 30% of investment comes from private operators and the State invests under the same terms (same level*

[17] For more details, see section 4.2 of the Notice on the notion of State aid.

[18] See paragraphs 86 to 88 of the Notice on the notion of State aid, in particular, for the criteria to consider a transaction '*pari passu*'.

[19] See paragraphs 89 to 96 of the Notice on the notion of State aid.

[20] See paragraphs 98 to 100 of the Notice on the notion of State aid.

[21] See paragraphs 100 to 105 of the Notice on the notion of State aid.

of protection, proportional sharing of risks and of revenues) such support could be considered under market terms and therefore would not need to be notified for Commission's approval.

23. In the field of R&D, there are specific situations where it can be ensured that no State aid is flowing to undertakings. The Framework for State aid for research and development and innovation[22] ("R&D&I Framework") provides specific guidance on the assessment of the presence of indirect State aid to industry in R&D-interactions with publicly funded research organisations, in particular as regards research on behalf of undertakings (contract research or research services) and effective collaboration with undertakings[23].

E. No effect on trade between Member States and no distortion of competition

24. The distortion of competition and effect on trade can be excluded in cases of very limited amounts of aid ("*de minimis* aid"). *De minimi*s aid is not considered State aid. Therefore, there is no need for prior approval from the Commission and Member States do not even have to inform the Commission of such aid.

25. Aid is considered to be *de minimis* if the total amount of aid granted per Member State to a single undertaking does not exceed EUR 200 000 over any period of three fiscal years and the other conditions laid down in the *de minimis* Regulation are respected[24].

IV. Instances in which there is no need to notify for State aid clearance, but other requirements may apply

26. If a given investment meets the cumulative conditions of Article 107(1) TFEU and thus entails State aid, it may be considered compatible with the internal market and can be granted without notification in the following instances:

A. Aid covered by an existing State aid scheme (conditions for no notification)

27. If a Member State plans to grant State aid under an aid scheme already approved by Commission decision, it does not need to notify again the scheme to the Commission for approval and can directly provide the support to individual beneficiaries under that scheme, as long as the conditions set in the authorisation decision are complied with.

28. Moreover, any increase of up to 20% of the original budget of an aid scheme already approved by Commission decision is not considered an alteration to existing aid. If this

22 Communication from the Commission – Framework for State aid for research and development and innovation, OJ C 414, 28.10.2022, p. 1–38

23 See section 2.2 of the R&D&I Framework on indirect State aid to undertakings through public funded research and knowledge dissemination organisations and research infrastructure.

24 Commission Regulation (EU) No 1407/2013 of 18 December 2013 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to de minimis aid, OJ L352, 24.12.2013, p. 1. Notably, the aid must be transparent within the meaning of Article 4 of the Regulation (i.e. it must be possible to calculate precisely the gross grant equivalent of the aid ex ante without a risk assessment), the EUR 200 000 threshold must be respected in case of cumulation with any other public support granted to the same beneficiaries under the de minimis Regulation, and the cumulation rules set out in the Regulation must be complied with.

is the only change to a scheme already authorised by the Commission, it does not need to be re-notified to the Commission for approval[25].

29. In any event, full compliance with Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility[26] should be ensured (see in particular Article 17(2)).

B. General Block Exemption Regulation (GBER)[27]

30. In cases where the Commission has gained sufficient experience with a given kind of State aid, it may block exempt such State aids, i.e. the Member States do not have to notify them. They only have to inform the Commission thereof.

31. The GBER provisions on aid in the field of climate, environmental protection and energy recently underwent a targeted revision aimed at further facilitating support for green projects, without the need for prior approval from the Commission. An amending GBER text was endorsed by the Commission on 9 March 2023.[28] The amended GBER will apply as of the day following its publication in the Official Journal. However, once the amended GBER provisions enter into force, they will apply retroactively to individual aid granted before their entry into force. For existing aid measures, Member States would need to adapt any schemes to comply with the amended GBER within 6 months following its entry into force. For a full picture of the transitional provisions, please see Article 58 GBER. Subsequent references to the GBER refer to the GBER as amended in the endorsed text.

32. Investments covered by this guiding template may, if the conditions are fulfilled, be supported under Articles 14 (regional investment aid), 17 (investment aid to SMEs), 21 (risk finance aid), 22 (aid for start-ups), 25 (aid for research and development projects), 25a (aid for SMEs for R&D and feasibility studies awarded a Seal of Excellence label), 25b (aid for Marie Skłodowska-Curie actions and European Research Council Proof of Concept actions awarded a Seal of Excellence label), 25c (aid for co-funded R&D projects and feasibility studies), 25d (aid for co-funded Teaming actions), 25e (aid for co-founded R&D projects supported by the European Defence Fund or the European Defence Industrial Development Programme), 28 (innovation aid for SMEs), 29 (aid for process and organisational innovation), 36 (investment aid for environmental protection including decarbonisation), 38 (investment aid for energy efficiency measures other than in buildings), 41 (investment aid for the promotion of energy production from renewable sources, of renewable hydrogen and of high-efficiency cogeneration), 46 (investment aid for energy efficient district heating and cooling), 52

25 In case of budget increases to already authorised schemes exceeding 20% and/or their prolongation up to 6 years, the so-called simplified notification procedure under Article 4 of the Implementing Regulation (Commission Regulation (EC) No 794/2004 of 21 April 2004 implementing Council Regulation (EC) No 659/1999 laying down detailed rules for the application of Article 93 of the EC Treaty, OJ L 140, 30.4.2004, p. 1) can be used, whereby the Commission aims to complete the assessment of notified State aid measures within one month.

26 OJ L 57, 18.2.2021, p. 17.

27 Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ L 187, 26.6.2014, p. 1.

28 The full text endorsed by the Commission is available here: https://competition-policy.ec.europa.eu/document/8d68e6c3-763a-41db-9e34-42f90bc5e892_en.

(aid for broadband infrastructures), or 56 (investment aid for local infrastructures) GBER. Note that the provisions of Chapter I of the GBER must also be complied with.

33. **Article 14 GBER** (regional investment aid) allows granting State aid for investments that take place in an assisted area[29]. If the relevant conditions are fulfilled, Article 14 GBER could cover investment aid, for undertakings of all sizes, in all assisted areas, for cloud and edge infrastructure (potentially combined with an investment in middleware or cloud and edge services), if this is an initial investment in favour of a new economic activity in the area concerned[30] (an investment related to the set-up of a new establishment or related to a new activity).

34. In existing establishments, regional investment aid could also be provided for investment in cloud and edge infrastructure, middleware and cloud and edge services (including upgrading investments), if the investment takes places in an ‘a’-area, or is carried out by a SME in more developed ‘c’-areas, and qualifies as an initial investment related to a fundamental change in the production process, an expansion of the capacity, or a diversification of the output of the establishment into products not previously produced.

35. The maximum aid intensities applicable in the assisted areas are established for each Member State in the regional aid maps and can vary across the assisted areas[31]. The eligible costs[32] are investment costs in tangible and intangible assets, estimated wage costs arising from the job creation as a result of the eligible investment or a combination thereof. The investment shall be maintained in the recipient area for at least 5 years (3 years if the beneficiary is an SME). Additional bonuses apply for investments by small enterprises (20%) and medium-sized enterprises (10%). Aid for relocation purposes is not allowed under Article 14 GBER.

36. Large investment projects (with eligible costs exceeding EUR 50 million) can also be supported under Article 14 GBER, provided that the aid does not exceed the adjusted aid amount (based on the so-called “scale down mechanism”[33]).

See the State aid assessment of the additional examples of investments and reforms contained in the component – Scale Up

Reform B1 – Upgrade (where existing) and build the next generation of resilient European, interconnected, real-time, energy efficient, highly secured and distributed cloud to edge data centres and related nodes, for both the private and public sector: *The envisaged public support measures may amount to State aid depending on the specific structure and purposes of the project. For instance, measures to support innovative large cross-border projects to build interconnected, energy efficient, highly secured, real-time and distributed cloud-to-edge data centres and related nodes could be authorised by the Commission: […] As an*

29 ‘Assisted areas’ means areas designated in an approved regional aid map, valid at the time of award of the aid in application of Articles 107(3)(a) and (c) TFEU.

30 An initial investment in favour of new economic activity includes, among others, an investment in tangible and intangible assets related to the setting up of a new establishment, or to the diversification of the activity of an establishment, under the condition that the new activity is not the same or a similar activity to the activity previously performed in the establishment.

31 For example, an investment by an SME in a (c) area.

32 Please note that the references to ‘eligible costs’ in this guiding template are to be understood exclusively for the purposes of State aid. Therefore, they have no bearing on whether a particular measure and its associated cost can be financed or not by the Facility.

33 See Article 2(20) GBER.

alternative, productive investment in this field, for instance for data centres, could benefit from aid without notification, in accordance with the State aid rules, anywhere in the EU when performed by SMEs. This could also be the case for large enterprises in assisted areas. Outside the General Block Exemption Regulation, aid may be granted to productive investment under the conditions described in the Regional Aid Guidelines.

Investment B3 – Support public entities, business - including SMEs - and users and providers of Common Data Spaces to uptake high speed, trusted and sustainable cloud capabilities ("cloudification") to boost their transition in post pandemic recovery: *The envisaged public support measures may amount to State aid depending of the specific structure and purposes of the project if such investments are provided via Member States or, more generally, if they entail public resources. If RRF funding is provided only for cohesion purposes, aid for initial investments into "cloudification" could be compatible with the internal market if it complies with the regional aid rules of the General Block Exemption Regulation (i.e. there would be no need to notify to the Commission for approval). Outside the General Block Exemption Regulation, aid may be granted under the conditions described in the Regional Aid Guidelines (in which case notification and approval by the Commission would be needed).*

37. **Article 17 GBER** allows granting investment aid to SMEs (in both assisted and non-assisted areas), not exceeding the threshold of EUR 8.25 million per undertaking per investment project. Eligible investments include among others investments in tangible and/or intangible assets relating to the setting up of a new establishment (e.g. a new data centre), the extension of an existing establishment, diversification of the output of an existing establishment into new additional products or a fundamental change in the overall production process of an existing establishment. The maximum aid intensity is 20 % of eligible costs for small enterprises and 10 % for medium-sized enterprises.

38. **Article 21 GBER** (risk finance aid for SMEs) allows granting State aid in the form of financial instruments ((quasi-)equity, loans or guarantees) via financial intermediaries, to support SMEs' access to finance. The SME could in principle use the funding for any purpose, hence also for the development and/or deployment of cloud and edge infrastructure, middleware and services. The beneficiaries have to be unlisted SMEs, that are typically operating on the market for either less than seven years after their first commercial sale or less than ten years following their registration (category 1), or that need substantial risk finance investment to enter a new product or geographical market (category 2). Independent private investors should provide at least 40% (for category 1) or 60% (for category 2) of the total investment. The maximum total amount (i.e. public and private together) of risk finance under this Article is EUR 16.5 million per undertaking.

39. **Article 22 GBER** allows granting State aid for small enterprises that are start-ups. Beneficiaries have to be unlisted up to five years following their registration, and fulfil the following cumulative conditions: (a) they have not taken over the activity of anotherundertaking, unless the turnover of the overtaken activity accounts for less than 10% of the turnover of the eligible undertaking in the financial year preceding the take-over; (b) they have not yet distributed profits; (c) they have not acquired another undertaking or have not been formed through a merger, unless the turnover of the acquired undertaking accounts for less than 10% of the turnover of the eligible undertaking in the financial year preceding the acquisition or the turnover of the merged undertaking formed through a merger is less than 10% higher than the combined turnover that the merging undertakings had in the financial year preceding the merger. The notification thresholds depend on the type of aid instruments (loans, guarantees, grants, tax incentives, transfer of intellectual property) and are explained in

detail in Article 22.3 GBER. If the enterprise is both small and innovative, the maximum amounts may be doubled.

40. **Article 25 GBER** allows granting State aid for R&D projects with high notification thresholds (EUR 55, 35 or 25 million per undertaking per project depending on the research category[34]) and generous aid intensities. The permitted aid intensities range between 100% and 25% depending on the closeness of the R&D activities to the market. When an R&D project is predominantly experimental development, aid of up to EUR 25 million can be granted without notification to the Commission with an aid intensity of 25 % of eligible costs. These include personnel costs, costs of instruments, equipment, buildings and land to the extent and for the period used for the project, costs of contractual research. The aid intensity of 25 % applies to undertakings of all sizes and can be increased when the aided project is carried out by an SME; when the aided project involves effective collaboration, or its results are widely disseminated, or the beneficiary commits to make available licences for IP-protected results; or the aided project is carried out in an assisted region. A bonus is also allowed for R&D projects delivering cross-border benefits in terms of effective collaboration and knowledge dissemination, where such projects have been selected following an open call to form part of a project jointly designed by at least three Member States or contracting parties to the EEA Agreement, presuming that all relevant conditions are fulfilled. Bonuses can in some cases be cumulated, up to a total maximum aid intensity of 80%. Nowadays, the vast majority of aid for R&D is granted under the GBER. Article 25 GBER may, if the conditions are fulfilled, be available for R&D projects on innovative cloud and edge infrastructures, middleware, and cloud and edge services.

41. R&D does not include routine or period changes made to existing products (e.g. software), manufacturing processes, services (e.g. software) and other operations in progress, even if those changes may represent improvements[35]. Work on system-specific or program-specific advances that were publicly available prior to the commencement of the work is not to be considered as R&D. Routine computer and software maintenance are not R&D.

    Examples of R&D in relation to software[36]:

    - the development of new operating systems or languages;
    - the effort to resolve conflicts within hardware or software based on the process of re-engineering a system or a network;
    - the creation of new or more efficient algorithms based on new techniques;
    - the creation of new and original encryption or security techniques.

    Examples of other software-related activities not to be considered as R&D:

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[34] There are three categories (stages) of R&D: fundamental research, industrial research, experimental development; see their definitions in Article 2 GBER, points 84-86.

[35] See definition of experimental development in Article 2 GBER, point 86.

[36] OECD Frascati manual 2015, section 2.71, available at https://www.oecd.org/sti/frascati-manual-2015-9789264239012-en.htm. As referred to in paragraph 79 of the R&D&I Framework, when classifying different activities according to the relevant category of fundamental, industrial research or experimental development, the Commission will refer to its own practice as well as to the specific examples and explanations provided in the OECD Frascati Manual.

- the development of business application software and information systems using known methods and existing software tools;
- adding user functionality to existing application programs (including basic data entry functionalities);
- the use of standard methods of encryption, security verification and data integrity testing;
- the customisation of a product for a particular use, unless during this process knowledge is added that significantly improves the base program.

42. If all the relevant conditions are fulfilled, State aid for R&D projects could be granted, for instance, for R&D on a new open source cloud stack with reduced code footprint to manage edge nodes; R&D on a new open source energy-aware multi-cloud management solution; R&D on new low power embedded software in system cooling; R&D on new cognitive and swarm computing technologies; R&D on new extended life, low power and eco-design components for data processing hardware; R&D on new technologies for material reuse, waste management and circularity processes embedded in existing and future new smart computing infrastructures; R&D on new ultra-green materials for physical land and submarine interconnections among data centres; R&D on new lightening processes with close to zero energy consumption in data transmission; R&D on new innovative industrial data tracing and optimization services; R&D on next generation of low power, open, interoperable and vendor neutral middleware cloud platforms with easy plug-and-play integration functionalities for any vendors' application services into cloud infrastructures; R&D on new software platforms with embedded identity management, privacy and data security by design services for common data storage, data anonymization, data aggregation and data sharing for data dispersed over hybrid clouds; R&D on new low power and secure distributed cloud architectures; R&D on new real-time with zero latency edge services; R&D on a new coding method that makes coding more energy efficient; R&D on new data anonymization, masking and endomorphic encryption services; R&D on energy efficiency data processing modelling; etc.

43. If undertakings need to use cloud and edge infrastructure, middleware, or cloud and edge services, as input for carrying out R&D projects, these undertakings could benefit from R&D project aid under Article 25 GBER for some of the costs incurred to the extent and for the time that they are used for the R&D project, if all conditions are fulfilled.

See the State aid assessment of the additional examples of investments and reforms contained in the component – Scale Up

Reform B1 - Upgrade (where existing) and build the next generation of resilient European, interconnected, real-time, energy efficient, highly secured and distributed cloud to edge data centres and related nodes, for both the private and public sector: *The envisaged public support measures may amount to State aid depending on the specific structure and purposes of the project. For instance, measures to support innovative large cross-border projects to build interconnected, energy efficient, highly secured, real-time and distributed cloud-to-edge data centres and related nodes could be authorised by the Commission: [...] To support the development of more energy efficient and secure cloud, the Research and Development and Innovation (R&D&I) State Aid rules (GBER and R&D&I Framework), for both industrial research and experimental development projects can be used.*

44. **Articles 25a - 25d GBER** provide additional legal basis for supporting R&D projects. These new articles introduce alignments with conditions under the Horizon 2020 or the Horizon Europe programmes and hence provide simplification and synergies by eliminating duplication in assessment and reducing administrative burden. These articles provide for aid for SMEs for R&D and feasibility studies (Article 25a GBER), aid for Marie Skłodowska-Curie actions and European Research Council Proof of Concept actions (Article 25b GBER) with regard to projects awarded a Seal of Excellence quality label under the Horizon 2020 or the Horizon Europe programme[37]. Moreover, they allow for aid for co-funded R&D projects and feasibility studies (Article 25c GBER)[38] and co-funded Teaming actions (aiming at creation of new or update existing centres of excellence, including investment aid for infrastructures) (Article 25d GBER), which have been independently evaluated and selected following transnational calls under the Horizon 2020 or the Horizon Europe programme. For these aids the rules to determine eligible activities[39], eligible costs and total public funding are the ones defined under the Horizon 2020 or the Horizon Europe programme[40]. Similar to Article 26 GBER, investment aid for infrastructures under a co-funded Teaming action (Article 25d GBER) is subject to the following conditions: separate cost accounting of the economic and non-economic activities, a monitoring and claw-back mechanism[41], open access to the infrastructure on a transparent and non-discriminatory basis, and the charging of a market price for its operation or use. Undertakings which have financed at least 10% of the investment costs of the infrastructure may be granted preferential access under more favourable conditions, whereby, such access shall be proportional to the undertaking's contribution to the investment costs and these conditions shall be made publicly available.

45. **Article 26 GBER** (investment aid for research infrastructures) allows granting State aid for the construction or upgrade of research infrastructures that perform economic activities, subject to separate cost accounting of the economic and non-economic activities, a monitoring and claw-back mechanism, open access to the infrastructure on a transparent and non-discriminatory basis, and the charging of a market price for its operation or use. Undertakings which have financed at least 10% of the investment costs of the infrastructure may be granted preferential access under more favourable conditions, whereby, such access shall be proportional to the undertaking's contribution to the investment costs and these conditions shall be made publicly available. The eligible costs shall be the investment costs in intangible and tangible assets. The aid intensity shall not exceed 50% of the eligible costs. The aid intensity may be increased up to 60% subject to at least two Member States providing the public funding, or for a research infrastructure evaluated and selected at Union level.

37 A Seal of Excellence is a quality label awarded to project proposals submitted under Horizon 2020 or Horizon Europe which were judged to deserve funding but did not receive it due to budget limits.

38 If the funding provided by the Horizon 2020 or Horizon Europe programme covers at least 30% of the total eligible costs.

39 Activities going beyond experimental development are not eligible under Articles 25a, 25c and 25d GBER.

40 Investment costs in project-related tangible and intangible assets are eligible under Article 25d GBER with the maximum aid amount set at 70% of the investment costs. The maximum aid amount under Article 25a shall not exceed EUR 2,5 million per SME per R&D project or feasibility study.

41 This mechanism provides for the recovery of excess State aid in case economic activities exceed the level for which the aid was granted.

The maximum amount of aid under this Article is EUR 35 million per infrastructure. It is important to note that research infrastructures are the infrastructures that are used by the scientific community to conduct research in their respective fields[42].

46. **Article 28 GBER** (innovation aid to SMEs) allows granting State aid to SMEs for costs of innovation advisory and support services, including those services provided by research and knowledge dissemination organisations, research infrastructures, testing and experimentation infrastructures or innovation clusters, provided to them, with generous aid intensities. If the conditions are fulfilled, such services could include e.g. eligible innovation advisory support on the move and roll-out of IT systems and services to the cloud, and innovation advisory support on the deployment of cloud and edge infrastructure, middleware, and cloud and edge services. By default, aid of up to 50% of the eligible costs can be granted. Aid can be increased up to 100% of the eligible costs if the total amount of aid for costs incurred by SMEs for the use of innovation advisory and support services does not exceed EUR 220 000 per beneficiary within any three year period. Where the default/regular aid intensity of 50% is applied, a maximum amount of aid of EUR 10 million per undertaking and per project can be granted under this GBER provision.

47. **Article 29 GBER** (aid for process and organisational innovation) allows granting State aid to SMEs for research and experimental development into process and organisational innovation, including demonstration projects and pilots, testing and validation. Organisational innovation includes the implementation of a new organisational method at the level of the undertaking (at group level in the given industry sector in the EEA), workplace organisation or external relations, including for instance by making use of novel or innovative digital technologies.Process innovation addresses the implementation of a new or significantly improved production or delivery method, including significant changes in techniques, equipment or software, at the level of the undertaking (at group level in the given industry sector in the EEA), including for instance by making use of novel or innovative digital technologies or solutions. If the conditions are fulfilled, a project to implement a process innovation could cover the R&D works necessary for e.g. the integration of cloud and edge data processing solutions in business or production processes. Aid for process and organisational innovation under Article 29 GBER is available to large undertakings only exceptionally, if they effectively collaborate with SMEs in the aided innovation activity, and the collaborating SMEs incur at least 30% of the total eligible costs. Eligible costs include among others personnel costs of researchers, technicians and other supporting staff, costs of instruments, equipment, buildings to the extent and for the period used for the innovation project, and additional overheads and other operating costs, including costs of materials, supplies and similar products, incurred directly as a result of the innovation project. Aid of up to 15% of the eligible costs can be granted for large undertakings and 50% of the eligible costs for SMEs, with a maximum amount of EUR 12.5 million per undertaking per project.

48. **Article 38 GBER** allows investment aid for energy efficiency measures other than in buildings, i.e. for investments which make it possible for the beneficiary to deliver the same output with less energy compared to its previous situation or compared to standard equipment. If the relevant conditions are fulfilled, this could cover investments

[42] Article 2(91) GBER.

increasing energy efficiency in new cloud and edge infrastructure or retrofitting investments (for energy efficiency purposes) of existing cloud and edge infrastructure, such as green racks and servers, smart ventilation and liquid cooling systems, or energy efficiency data processing modelling tools. Eligible costs must be limited to the extra investment costs necessary to achieve a higher level of energy efficiency. These costs must be identified by comparing the costs of the investment to those of the credible counterfactual scenario that would occur in the absence of the aid. The counterfactual scenario must be comparable to the investment in terms of output capacity and lifetime and may consist in: a less energy-efficient investment that corresponds to normal commercial practice in the sector, the same investment carried out at a later point in time, maintaining the existing installations and equipment in operation, or finally the leasing of the less energy-efficient equipment that would occur in the absence of aid. The aid cannot subsidise investments that the company would anyway undertake nor cover expenditure relating to the compliance with Union standards already adopted and in force. Investment aid can be given for up to 30% of eligible costs, with higher aid intensities for SMEs and investments in assisted areas, for an amount up to EUR 30 million per undertaking per project. Aid intensity may reach 100 % of the total investment costs where aid is granted in a competitive bidding process, which fulfils all the conditions set out in Article 38(7) GBER[43], in addition to those laid down in Article 2, point (38). Where aid is granted outside of a competitive bidding process, it can also be granted without reference to a counterfactual. In that case aid intensities and bonuses will be reduced by 50%.

49. Article 38 GBER could also cover investment costs for equipment for the recovery of waste heat of a cloud and edge infrastructure provided the waste heat is re-used for the infrastructure's own energy consumption (through a heat pump for instance) and thereby reduces the energy consumption of the infrastructure for the same output. If the waste heat is to be fed into a district heating network, see explanations on 46 GBER below. If the waste heat is sold to the neighbourhood and not fed into a district heating network, support can be provided for the capturing of the waste heat and its transport under Article 36 GBER (for this type of investment, reference is made to the guiding template on "*Energy and hydrogen infrastructure*" and to the guiding template on "*Investment/operating aid for the reduction and removal of greenhouse gas emissions including through support for renewable energy and energy efficiency"*).

50. In addition to the above-mentioned investments in energy efficient equipment, **Article 38a GBER** allows investment aid for energy efficiency improvements in buildings up to EUR 30 million per undertaking per project (for this type of investment reference is made to the guiding template on "*Energy efficiency in buildings*"). This can concern the construction of new data centre buildings. State aid would be available for the degree to

[43] Namely, i) the aid award is based on objective, clear, transparent and non-discriminatory eligibility and selection criteria published at least six weeks in advance of the deadline for submitting applications; ii) during the implementation of a scheme, in case of a bidding process where all bidders receive aid, the design of said process shall be corrected to restore effective competition in the subsequent bidding processes, for example, by reducing the budget or volume; iii) ex post adjustments to the bidding process are excluded; iv) at least 70% of the total selection criteria used for ranking bids and, ultimately, for allocating the aid in the competitive bidding process shall be defined in terms of aid in relation to the project's contribution to the environmental objectives of the measure, for example the aid requested per unit of environmental protection to be delivered.

which the new building is more energy efficient than a typical data centre that would be usually built at that moment.

51. **Article 41 GBER** allows investment aid for the promotion of energy production from renewable sources, of renewable hydrogen and of high-efficiency cogeneration. Under this article support can be granted to installations for the production of renewable energy (with the exception of electricity from renewable hydrogen) and cogeneration, as well as some types of energy storage (e.g. electricity and thermal storage). If the relevant conditions are fulfilled, this could cover, for instance, equipment that is installed on top of cloud or edge infrastructures for the production of energy from renewable sources (e.g. photovoltaic solar panels) for its own use or for injection into the public grid. Investment aid can be given up to 45 % of the total investment costs for investments in the production of renewable energy and 30% for investments in storage, with higher aid intensities for SMEs, and up to 100% in case of a competitive bidding process. Aid amount can go up to EUR 30 million per beneficiary per project.

52. **Article 46 GBER** allows investment aid for energy efficient district heating and cooling. This could, if the relevant conditions are fulfilled, cover investment costs for equipment for capturing, as well as upgrading, storing and injecting waste heat of a cloud and edge infrastructure (e.g. data centre) into a district heating/cooling system (rather than for the infrastructure's own consumption), provided the capturing equipment forms part of the district heating/cooling system and provided the district heating/cooling system complies or will comply as a result of the supported works with the definition of efficient district heating and cooling system as set out in Articles 2(41) of Directive 2012/27/EU[44]. For more details on district heating and cooling investments, also on the modalities to calculate the eligible costs and aid intensities, see the relevant guiding template on "*District heating/cooling generation and distribution infrastructure*"[45].

53. **Article 47 GBER** allows investment aid for resource efficiency and for supporting the transition towards a circular economy. This covers granting State aid to undertakings for investments related e.g. to recycling and re-use of their or third parties' waste (other than waste heat – for waste heat recovery, see Article 38 GBER and Article 46 above). If all relevant conditions are fulfilled, this could cover new technologies for waste recycling or re-use embedded in existing and future new edge and cloud infrastructures (including data centres). Aid could also be granted for investments made to prevent or reduce waste generation in edge and cloud infrastructures, as well as for investments undertaken to replace primary raw materials or feedstock with recycled ones. The eligible costs must be limited to the extra investment costs, and they are normally identified by reference to a similar, less environmentally-friendly project or activity that would have been credibly carried out without the aid (the counterfactual scenario). The aid intensity may raise up to 40% of the eligible costs and may be increased by 20 percentage points when the aid is granted to small undertakings and by 10 percentage points for aid granted to medium-sized undertakings, for an amount up to EUR 30 million per undertaking per investment project.

54. For the GBER exemptions that can be used for investments in the field of broadband, notably **Article 52 GBER**, please see the relevant State aid guiding template

[44] OJ L 315, 14.11.2012, p. 1.

[45] Available at https://ec.europa.eu/competition/state_aid/what_is_new/template_RFF_district_heating.pdf.

"*Measures to support the deployment and take-up of fixed and mobile very high capacity networks, including 5G and fibre networks*"[46].

55. **Article 56 GBER** (investment aid for local infrastructures) allows financing the construction or upgrade of local infrastructures, i.e. infrastructure that contribute at a local level to improving the business and consumer environment and modernising and developing the industrial base. This could, if the relevant conditions are fulfilled, potentially cover certain investments in cloud and edge infrastructures. The infrastructure shall be made available to interested users on an open, transparent and non-discriminatory basis. The price charged for the use or the sale of the infrastructure shall correspond to market price. Any concession or other entrustment to a third party to operate the infrastructure shall be assigned on an open, transparent and non-discriminatory basis, having due regard to the applicable procurement rules. The eligible costs shall be the investment costs in tangible and intangible assets. The aid amount shall not exceed the difference between the eligible costs and the operating profit of the investment. The operating profit shall be deducted from the eligible costs *ex-ante*, on the basis of reasonable projections, or through a claw-back mechanism. Dedicated infrastructure[47] is not covered by this provision. The notification threshold under Article 56 GBER is EUR 11 million or the total costs exceeding EUR 22 million for the same infrastructure.

V. Instances in which notifying for State aid clearance is necessary

56. If the measure constitutes State aid and does not meet the conditions allowing an exemption from notification, a notification to the Commission for State aid clearance is required. The aim of the present section is to assist Member States in identifying and providing the necessary and relevant information to the Commission in the context of pre-notifications and notifications, bearing in mind that the Commission will assess all State aid notifications received from Member States in the context of the Facility as a matter of priority.

A. Procedure for pre-notification and notification

57. In case the planned investment entails State aid and is not exempt from notification, the Member State should, in compliance with Article 108(3) TFEU, proceed to notify the measure to the Commission for approval before implementation.

58. For measures that must be notified, the Commission is committed to assess and treat those cases as a matter of priority and to engage with national authorities early on, in order to address problems in 'real time' in the context of the preparation of their Recovery and Resilience Plans. Therefore, informal contacts and pre-notifications are encouraged as soon as possible.

59. The Commission aims to complete the assessment of notified State aid measures within six weeks of receiving complete notification from the Member State.

B. Relevant legal bases for compatibility with the Treaty

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46 Available at https://ec.europa.eu/competition/state_aid/what_is_new/template_RFF_broadband_roll_out_and_demand_side_measures.pdf.

47 Infrastructure which is dedicated to (a) specific user(s), as opposed to being open to all users.

60. In case the notification thresholds provided by the GBER are exceeded or other GBER conditions are not met, Member States must notify the aid measures to the Commission for approval. In such cases, the Commission will assess these measures on the basis of Article 107(3) TFEU, taking into account, when applicable, the relevant guidelines, namely the R&D&I Framework, the Guidelines on regional State aid[48] ("Regional Aid Guidelines"), the Guidelines on State aid for environmental protection and energy 2022[49], the Guidelines on State aid for broadband networks[50] ("Broadband Guidelines"), the Guidelines on State aid to promote risk finance investments[51] ("Risk Finance Guidelines"), or the Communication on the criteria for the analysis of the compatibility with the internal market of State aid to promote the execution of important projects of common European interest[52] ("IPCEI Communication").

61. In particular, under Article 107(3)(c) TFEU, the Commission may consider compatible with the internal market State aid to facilitate the development of certain economic activities within the European Union, where such aid does not adversely affect trading conditions to an extent contrary to the common interest.

62. To assess whether State aid can be considered compatible with the internal market, the Commission analyses whether the design of the aid measure ensures that the positive effect of the aid on the development of the supported economic activity (positive condition) exceeds its potential negative effects on trade and competition (negative condition).

63. In its compatibility assessment, the Commission will check whether the conditions of Article 107(3)(c) TFEU are met. In particular:

    - The aid measure needs to facilitate the development of economic activities and have an incentive effect without resulting in an infringement of relevant EU law affecting the compatibility test.
    - The aid measure must not unduly affect trading conditions to an extent contrary to the common interest. For those purposes the Commission will check whether the State intervention is needed, appropriate and proportionate and addresses a market failure to achieve the objectives pursued by the measure. The Commission will also verify that transparency of the aid is ensured. Together, these conditions ensure that the distortive effects of the aid are as far as possible limited.
    - The Commission will assess the negative effects of the aid measure in terms of distortions of competition and impact on trade between Member States against the common interest of the Union. In particular, the Commission will in this step not only consider the benefits of the aid for the beneficiary's economic activity, but also take into account the positive effects of the aid for the community at large.
    - The Commission will finally balance the positive effects with the negative effects of the aid on competition and trade.

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[48] OJ C 153, 29.4.2021, p. 1.

[49] OJ C 80, 18.2.2022, p. 1–89.

[50] OJ C 36, 31.1.2023, p. 1.

[51] OJ C 508, 16.12.2021, p. 1.

[52] OJ C 528, 30.12.2021, p. 10.

a. R&D&I Framework[53]

64. Under the R&D&I Framework, notifiable R&D&I aid will be assessed in detail in order to establish whether all the relevant compatibility criteria are met, notably necessity, appropriateness and proportionality of the aid, and distortion of competition and trade. If that is the case, higher aid intensities than under the GBER can potentially be allowed based on the so-called detailed assessment to make sure that the aid amount is necessary, has an incentive effect on the beneficiary and is limited to the minimum needed for carrying out the aided activity by the beneficiary.

65. To this end, Member States must explain in detail the supported RDI activity, the technical and commercial risks involved for the beneficiary, as well as how the minimum aid amount has been established (amongst others, based on internal company documents, business plans also explaining the counterfactual in the absence of aid). The Member State must also provide market information on the impact of aid on competition and trade within the relevant market. In cases where there are multiple potential candidates for carrying out 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 as defined in the call for the selection of candidates and used by the granting authorities to evaluate and select the candidates.

66. Apart from the above-mentioned assessment criteria, the R&D&I Framework provides guidance on the presence of indirect State aid to industry in R&D-interactions with publicly funded research organisations, in particular as regards contract research, effective collaboration and research services on behalf of industry, as well as knowledge transfer in R&D-collaboration with industry [54].

> See the State aid assessment of the additional examples of investments and reforms contained in the component – Scale Up
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> **Reform B1 - Upgrade (where existing) and build the next generation of resilient European, interconnected, real-time, energy efficient, highly secured and distributed cloud to edge data centres and related nodes, for both the private and public sector:** *The envisaged public support measures may amount to State aid depending on the specific structure and purposes of the project. For instance, measures to support innovative large cross-border projects to build interconnected, energy efficient, highly secured, real-time and distributed cloud-to-edge data centres and related nodes could be authorised by the Commission: […] To support the development of more energy efficient and secure cloud, the Research and Development and Innovation (R&D&I) State Aid rules (GBER and R&D&I Framework), for both industrial research and experimental development projects can be used.*

b. Regional Aid Guidelines

67. Regional investment aid can be granted in almost all sectors of the economy to large companies as well as to SMEs in assisted areas (less developed 'a'-areas and more

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[53] Cases that were subject to a detailed assessment under the R&D&I Framework: SA.37178 (2013/N) - Aide de l'ANR au projet de R&D « SuperGrid » dans le cadre du programme d'investissements d'avenir; SA.39457 (2015/N) - Reaction Engines Ltd, SABRE design project; SA.37137 (2013/N) - Avance récupérable pour le programme de recherche et développement TS 3000; SA.45183 (2017/N) and SA. 45185 (2017/N) - Avance remboursable pour le programme de recherche et développement de l'hélicoptère X6 (Airbus Helicopters).

[54] See section 2.2 of the R&D&I Framework on indirect State aid to undertakings through public funded research and knowledge dissemination organisations and research infrastructure.

developed 'c'-areas), subject to the conditions of the Regional Aid Guidelines. Each Member State has a regional aid map in which the assisted areas are defined. Almost half of the EU qualifies as assisted area.

68. In 'a'-areas, regional investment aid can be granted to large enterprises and SMEs not only for investments related to new establishments, but also for investments to extend and/or modernise existing establishments.[55]

69. This is also possible for regional investment aid to SME's in 'c'-areas. Also large enterprises can benefit from regional investment aid in 'c'-areas for their investments relating to new establishments (greenfield investments) and new economic activities (in principle falling into a different class (four-digit numerical code) of the NACE Rev.2 statistical classification of economic activities).

70. Regional investment aid is expressed as a percentage of the total (eligible) cost of an initial investment ('regional aid intensity') and can be granted up to the maximum aid intensity applicable in the respective assisted area. In principle, the less developed the region is, the more regional aid can be granted. The Commission will verify whether the aid amount does not exceed the net extra costs of implementing the investment in the area concerned.

71. If Member States consider granting regional investment aid for the investments described, the aided project must:

    (i) contribute to economic development of the area (e.g. taking account of direct and indirect jobs created, sustainability (duration) of the investment in the region, transfer of technology and knowledge spill-over in the region);

    (ii) have an incentive effect (i.e. the aid must change the behaviour of the undertaking concerned in such a way that it engages in additional activity which it would not carry out without the aid or it would carry out in a restricted or different manner or location);

    (iii) be limited to the minimum necessary and in any event below the maximum aid intensity for the region; and

    (iv) potential negative effects on competition and trade between Member States should remain limited (e.g. aid for manufacturing of innovative products for new growing markets would be less harmful than extension of capacities for existing products in declining markets, aid for an undertaking with lower market power is less harmful than for undertakings with significant market share).

72. In line with the provisions explained above, the Commission will first establish whether the notified investment project is eligible for regional aid. The Commission will then verify the compatibility of the notified aid in application of the conditions laid down in the Regional Aid Guidelines. To demonstrate how the aided project contributes to regional development, the notifying Member State can for instance develop how the project contributes to creation of new jobs in the region, technology and knowledge

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55 Eligible investments are i) setting up a new establishment; ii) extension of the capacity, iii) diversification of output of existing establishment into products not previously produced in the establishment or iv) a fundamental change in the production process of an existing establishment, v) acquisition of assets belonging to an establishment that has closed down or would have closed down had it not been purchased and is bought by investor unrelated to the seller.

transfer into the region, and ability of the region to contribute to development of new technologies through local innovation. Co-operation with local higher education institutions may also be considered positively in this respect.

73. To show that the project is eligible for aid under the Regional Aid Guidelines, the Member State must demonstrate i) that the project will be located in an assisted region in the respective Member State and ii) that it qualifies as an initial investment project[56]. It is for the notifying Member State to define the category of the initial investment project. In 'a'-areas regional investment aid can be granted for initial investment projects of enterprises of all sizes. For large enterprises in 'c'-areas regional aid can be granted only for initial investments that create new economic activities in these areas[57].

74. Several elements are assessed when applying the Regional Aid Guidelines. A balancing of the positive and the negative effects of the aid needs to ensure that the contribution to regional development outweighs the negative effects on trade and competition.

75. It is checked whether minimum requirements regarding the credibility[58] of the counterfactual scenario, appropriateness, incentive effect, and proportionality of the aid and its contribution to regional development are met. The Member State will be required to provide a detailed information on the counterfactual scenario (including the decision making process). There are two possible "counterfactual scenarios": the investment decision scenario (the (additional) investment would not be sufficiently profitable) or location scenario (the project would be located elsewhere in the EEA or outside EEA)[59]. The Member States should explain the impact of the aid on the investment decision or location decision to demonstrate the need for State intervention ("incentive effect"). Alternative investment or location in absence of the aid should be indicated. For large investment projects (taking into account all sources of funding) the Member States should demonstrate that the aid is proportionate. In case of an investment decision, the aid amount should not exceed the minimum necessary to render the project sufficiently profitable, for example, to increase its internal rate of return beyond the normal rates of return applied by the undertaking concerned in other investment projects of a similar kind. In case of a location decision, the aid should not exceed the net-extra costs (differences in NPV between the alternative locations). In

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56 Examples of initial investment projects: (i) the setting-up of a new establishment (SA. 45359 – Regional investment aid to Jaguar Landrover; (ii) the extension of the capacity of an existing establishment (SA.44574 – Aid to STMicroelectronics S.r.l), (iii) the diversification of the output of an establishment into products not previously produced in the establishment (SA.48382 – Regional investment aid to MOL Petrochemia), SA.49461-Regional investment aid to Navigator Tissue) or (iv) a fundamental change in the overall production process of an existing establishment (SA.49580 – Regional investment aid to BorsodChemZrt).

57 In some exceptional cases, aid can be also granted for the diversification of existing establishment under strict conditions defined under the Regional aid guidelines 2014-2020 (diversification of existing establishment into new products or new process innovation) or under the Regional aid guidelines coming into force in January 2022 (diversification of the output of an establishment into products not previously produced or for a fundamental change in the overall production process of the product(s) concerned, in certain Just Transition Fund areas.

58 The counterfactual scenario is credible if it is genuine and relates to the decision-making factors prevalent at the time of the decision by the beneficiary regarding the investment.

59 See for instance: investment decision scenario (SA.49580 – Regional investment aid to BorsodChemZrt), or location decision scenario (SA.44574 – Aid to STMicroelectronics S.r.l), SA.48382 – Regional investment aid to MOL Petrochemia, SA.36754- Aid for Audi Hungaria Motor), SA.45359 - Regional investment aid to Jaguar Landrover).

both cases, the aid should be below the maximum aid amount and maximum aid intensities for the respective region in the regional aid maps.

76. It is also verified that the aid does not lead to manifest negative effects that would prohibit the granting of aid, e.g. aid exceeding the allowable maximum aid intensity ceiling for the region concerned by the investment, creating overcapacity in a sector in decline, attracting an investment that would have gone without the aid to another region with a similar or worse off socio-economic situation, or causing the closure of activities elsewhere in the EEA.

77. The Commission has approved one regional aid scheme targeting the establishment of data centres[60] in assisted 'a'-areas. The beneficiaries of the scheme were both large undertakings and SMEs carrying out data processing, web server services (hosting) and related activities on strategic technology development sites. With the scheme, the granting authorities expected to attract initial high value added investments as well as to accelerate the establishment of supporting companies in the region.

> See the State aid assessment of the additional examples of investments and reforms contained in the component – Scale Up
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> **Reform B1 - Upgrade (where existing) and build the next generation of resilient European, interconnected, real-time, energy efficient, highly secured and distributed cloud to edge data centres and related nodes, for both the private and public sector:** *The envisaged public support measures may amount to State aid depending on the specific structure and purposes of the project. For instance, measures to support innovative large cross-border projects to build interconnected, energy efficient, highly secured, real-time and distributed cloud-to-edge data centres and related nodes could be authorised by the Commission: [...] As an alternative, productive investment in this field, for instance for data centres, could benefit from aid without notification, in accordance with the State aid rules, anywhere in the EU when performed by SMEs. This could also be the case for large enterprises in assisted areas. Outside the General Block Exemption Regulation, aid may be granted to productive investment under the conditions described in the Regional Aid Guidelines.*
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> **Investment B3 – Support public entities, business - including SMEs - and users and providers of Common Data Spaces to uptake high speed, trusted and sustainable cloud capabilities ("cloudification") to boost their transition in post pandemic recovery:** *The envisaged public support measures may amount to State aid depending of the specific structure and purposes of the project if such investments are provided via Member States or, more generally, if they entail public resources. If RRF funding is provided only for cohesion purposes, aid for initial investments into "cloudification" could be compatible with the internal market if it complies with the regional aid rules of the General Block Exemption Regulation (i.e. there would be no need to notify to the Commission for approval). Outside the General Block Exemption Regulation, aid may be granted under the conditions described in the Regional Aid Guidelines (in which case notification and approval by the Commission would be needed).*

c. *Guidelines on State aid for climate, environmental protection and energy 2022 (CEEAG)*[61]

60 Commission decision of 18 February 2016 in case SA.42225 – Lithuania – Regional aid scheme for the promotion of the development of strategic information and communication technology (ICT) projects on strategic ICT sites, OJ C 142, 22.4.2016, p. 8.

61 Communication from the Commission – Guidelines on State aid for climate, environmental protection and energy 2022, OJ C 80, 18.2.2022, p. 1–89.

78. Climate, energy and environmental aid can be granted under the CEEAG, beyond the conditions in the GBER described above, for decarbonisation measures, including, energy efficiency improvements and production of energy from renewable sources, for environmental protection enabling undertakings to go beyond Union standards or increase the level of environmental protection in the absence of Union standards, or for resource efficiency, including the replacement of primary raw materials with reused or recycled raw materials, prevention and reduction of waste generation.

79. If the relevant conditions are fulfilled, aid for the following categories of investments could, for instance, be declared compatible with the internal market under the CEEAG:

(i) Aid for waste heat recovery may be assessed under Section 4.1 CEEAG, where the waste heat is re-used for the cloud and edge infrastructure's own energy consumption (for instance, through a heat pump), thereby reducing the infrastructure's energy consumption for the same output;

(ii) Aid for the capturing of waste heat and its transport may also be assessed under Section 4.1 CEEAG, if the waste heat is sold to other facilities in the neighbourhood to replace heat produced from fossil sources and it is not fed into a district heating network. Under Section 4.1, to enable a cost-effective allocation of aid and reduce competition distortions, aid for reducing greenhouse gas emissions should in general be granted through a competitive bidding process open to all eligible beneficiaries[62]. In the exceptional cases in which the aid is not allocated and its level is not determined through a competitive bidding process, the Commission considers its amount to be proportionate if it is limited to the net extra cost ('funding gap') necessary to meet the objective of the measure compared to a realistic counterfactual scenario. The net extra cost is determined by the difference between the economic revenues and costs (including the investment and operation) of the aided project and those of the alternative project which the aid beneficiary would credibly carry out in the absence of aid. In certain situations, claw-backs may be required to ensure proportionality and limit the risk of overcompensation in case the supported projects turn out to be more profitable than in the projected scenario, in line with point 90 CEEAG[63];

(iii) If the waste heat is to be fed into a district heating network, investment and/or operating aid can be assessed under Section 4.10 CEEAG. Under section 4.10 CEEAG, the maximum aid intensity is determined by calculating the funding gap;

[62] According to point 49 of the CEEAG, a bidding process should fulfil the following cumulative conditions: (a) be open, clear, transparent and non-discriminatory, based on objective criteria, defined ex ante in accordance with the objective of the measure and minimising the risk of strategic bidding, (b) be based on criteria published sufficiently far in advance of the deadline for submitting applications to enable effective competition, (c) have a budget or volume as binding constraint in that it can be expected that not all bidders will receive aid, the expected number of bidders is sufficient to ensure effective competition, and the design of undersubscribed bidding processes is corrected to restore effective competition, (d) prevent any ex post adjustment to the bidding process outcome.

[63] For more detailed explanations on the conditions applicable under Section 4.1 CEEAG, reference is made to (for this type of investment, reference is made to the guiding template on "*Energy and hydrogen infrastructure" and to the guiding template on "Investment/operating aid for the reduction and removal of greenhouse gas emissions including through support for renewable energy and energy efficiency*").

(iv) Aid for resource efficiency and for supporting the transition towards a circular economy may be assessed under Section 4.4 CEEAG. This may include investments to replace primary raw materials with reused or recycled raw materials (except heat, for which see points (i) and (ii)), or for the prevention and reduction of waste generation.

d. Broadband Guidelines

80. For aid that may be given under the Broadband Guidelines[64], please see the relevant State aid guiding template "*Measures to support the deployment and take-up of fixed and mobile very high capacity networks, including 5G and fibre networks*", in particular the sections related to interconnections of backbone infrastructures.

e. Risk Finance Guidelines

81. SMEs, small and innovative mid-caps in the value chain might need access to finance exceeding the possibilities of the GBER. Such aid might be notified under the Risk Finance Guidelines[65] with a justification that these companies suffer from a market failure in terms of general access to finance for this type of companies.

f. IPCEI Communication

82. Finally, several Member States could come together to design an Important Project of Common European Interest (IPCEI). In this case, the Commission would assess the project based on the criteria set in the IPCEI Communication[66]. The purpose of IPCEIs is to bring together knowledge, expertise, financial resources and economic actors throughout the Union, so as to overcome important market or systemic failures and societal challenges which could not otherwise be addressed. IPCEIs are set up in view of their positive spillover effects throughout the EU, beyond the companies, Member States and sectors involved. In order to be deemed compatible under these rules, an eligible project must among others address a **market failure or other important systemic failures** and fulfil all IPCEI Communication conditions, including:

    (i) significantly contribute to strategic EU objectives;

    (ii) involve normally at least four Member States;

    (iii) involve important private co-financing by the beneficiaries;

    (iv) generate positive spill over effects across the EU that spread the benefits of the project beyond the participating undertakings and Member states and the sector concerned, and limit potential distortions to competition,

    (v) R&D&I projects must be of a major innovative nature or constitute an important added value in terms of research and innovation in the light of the state-of-the-art in the sector concerned, and

[64] OJ C 36, 31.1.2023, p. 1

[65] OJ C 508, 16.12.2021, p. 1

[66] Communication from the Commission – Criteria for the analysis of the compatibility with the internal market of State aid to promote the execution of important projects of common European interest, OJ C 528, 30.12.2021, p. 10.

(vi) evidence as to whether the project complies with the principle of 'do no significant harm' within the meaning of Article 17 of Regulation (EU) 2020/852 needs to be provided.

83. Openness and transparency need to guide the coordination of the IPCEI process. All Member States must be given an opportunity to participate; the selection of individual projects through calls for the expression of interest constitutes a mean to ensure openness and transparency.

84. IPCEIs are not there to fund the mere building or acquisition of cloud and edge infrastructures. Under IPCEI rules, State aid may cover, in addition to R&D activities that go beyond the global state-of-the-art, First Industrial Deployment activities following on from the R&D and allowing for the development of a new product or service with high research and innovation content or the deployment of a fundamentally innovative production process. First Industrial Deployment refers to the upscaling of pilot facilities, demonstration plants or of the first-in-kind equipment and facilities covering the steps subsequent to the pilot line, including the testing phase, but neither mass production nor commercial activities. For any potential IPCEI, taking into account the specificities of the relevant sector, including in the case of cloud and edge capabilities, it has to be assessed on a case-by-case basis whether aid for First Industrial Deployment could be available.

85. Equally, for any potential IPCEI, including in the case of cloud and edge capabilities, it has to be assessed on a case-by-case basis whether and to what extent investments could be supported under point 25 of the IPCEI Communication.

86. The Member States participating in an IPCEI are invited to submit a common notification. Thereafter, IPCEIs require a State aid assessment by the Commission and prior approval via a Commission decision. Hence, Member States should contact the Commission at the earliest stage possible in order to start assessing the viability of any potential IPCEI during pre-notification contacts.

VI. References

- Commission Notice on the notion of State aid as referred to in Article 107(1) of the Treaty on the Functioning of the European Union, OJ C 262, 19.7.2016, p. 1.Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, OJ L 187, 26.6.2014, p. 1.
- Commission Regulation (EU) No 1407/2013 of 18 December 2013 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to de minimis aid, OJ L 352, 24.12.2013, p. 1.
- Communication from the Commission – Framework for State aid for research and development and innovation, OJ L 170, 12.5.2021, p. 1-68.
- Communication from the Commission – Guidelines on State aid for climate, environmental protection and energy 2022 , OJ C80, 18.02.2022, p. 1.
- Guidelines on regional State aid for 2022-2027*,* OJ C 153, 29.4.2021, p. 1-46.
- Communication from the Commission on EU Guidelines on State aid for broadband networks, OJ C 508, 16.12.2021, p. 1.

- Guidelines on State aid to promote risk finance investments, OJ C 508, 16.12.2021, p. 1.
- Communication from the Commission – Criteria for the analysis of the compatibility with the internal market of State aid to promote the execution of important projects of common European interest, OJ C 528, 30.12.2021, p. 10-18
- Council Regulation (EU) 2015/1589 of 13 July 2015 laying down detailed rules for the application of Article 108 of the Treaty on the Functioning of the European Union, OJ L 248, 24.9.2015, p. 9.