

RECOVERY AND RESILIENCE FACILITY – STATE AID

Guiding template: Investment/operating aid for the reduction and removal of greenhouse gas emissions including through support for renewable energy and energy efficiency

Link to European Flagship: Power 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.

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.

4. State aid rules apply in the framework of the Facility. Member States should therefore ensure that all investments comply with the EU State aid rules and follow all regular procedures and rules.³
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 common to most of those plans.
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.
7. 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.
8. 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 investment

9. This guiding template covers aid⁶ for the reduction and removal of greenhouse gas emissions (GHG emissions), including through support for the production of renewable energy (“RES”) and energy efficiency but with the exception of support for the closure

³ See Commission staff working document - Guidance to Member States Recovery and Resilience Plans - Part 1, SWD(2021) 12 final, published 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 3.3.2023 ([https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023XC0303\(01\)&from=EN](https://eur-lex.europa.eu/legal-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 It is noted that in line with the guidance to Member States on the recovery and resilience plans published by the Commission on 17 September 2020 (SWD(2020) 205 final), Member States should focus on covering costs that are of a non-recurrent nature. Exceptionally, expenses of a recurrent nature may be financed to the extent that the Member State is able to demonstrate that they will produce longer-term effects in line with the objectives of the Facility, that their financing will be sustainably ensured after the duration of the Facility and that the negative effect on the government balance is only temporary.

of fossil-based power plants, support for GHG emission reductions in mobility, district heating and in buildings and support for circularity and the creation of carbon sinks.⁷

10. In the context of the 2050 climate neutrality objective for the EU, additional investments are required in the coming years. This guiding template contributes to the *Power Up* flagship by clarifying and explaining available types of support for a wide range of technologies primarily aimed at reducing greenhouse gas emissions, within the existing legal framework. Investments can focus on support for renewable energy to ensure Member States have the necessary tools to support the achievement of the Union's renewable energy targets and support specific renewable technologies where this contributes to achieving lower costs or other efficiency or environmental benefits.
11. Investments typically relate to the construction or upgrade of plants for the generation of energy from renewable or low-carbon sources, possibly including storage facilities, or electrolyser capacity for the production of renewable or low-carbon hydrogen as well as other forms of investment aimed at increasing energy efficiency **of production processes** or reducing emissions, including implementation of carbon capture and storage or utilization technologies.
12. Investments consisting of integrating a small-scale renewable energy sources (including storage) into a building as part of an energy-efficiency investment, are covered by the guiding template on "*Energy efficiency in buildings*".
13. Investments consisting in the construction or upgrade of heating/cooling installations in the context of a district heating network, notably through renewable energy sources, are covered in the guiding template on "*District heating/cooling generation and distribution infrastructure*".
14. Investments covered by this guiding template relate to the reduction and removal of greenhouse gas emissions, including through support for renewable energy and energy efficiency. This guiding template does not cover support related to activities linked to research, development and innovation, which is dealt with in other EU State aid rules⁸.

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

15. 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.

A. No economic activity

⁷ State aid can be awarded in various forms (e.g. grants, loans, tax reduction). The Member State should however ensure that the aid is granted in the form that is likely to generate the least distortions of trade and competition in the EU. In this respect, the Member State is required to demonstrate why other potentially less distortive forms of aid such as repayable advances as compared to direct grants or tax credits as compared to tax reductions or forms of aid that are based on financial instruments such as debt or equity instruments (for example, low-interest loans or interest rebates, State guarantees, or an alternative provision of capital on favourable terms) are less appropriate.

⁸ Communication from the Commission – Framework for State aid for research and development and innovation, OJ C 198, 27.6.2014, p. 1.

16. As a general rule, support for activities that are not of an economic nature, *i.e.*, that are not used for offering goods or services on the market, is not considered State aid.
17. The type of investment assessed in this guiding template involve activities which are typically considered economic in nature.
18. However, investments by individuals and entities which do not exercise economic activities and which use at least 80 % of the electricity generated by that specific RES installation for “self-consumption” may fall outside the scope of State aid rules.⁹

B. No State resources

19. Measures that do not involve the transfer of public resources¹⁰ exclude the existence of State aid¹¹.

See the State aid assessment of the additional examples of investments and reforms contained in the [component – Power Up](#)

Reform 2: Accelerating permitting of new renewables installations, including simplified procedures for re-powering: *This reform will be achieved through the revision of the national legislation governing the installation of renewables installation. While some of these actions contribute to the implementation of the revised Renewable Energy Directive (Directive (EU) 2018/2001), a number of them are also meant to address the specific national barriers identified, including through contacts with stakeholders. [...] In addition [...], procedures underpinning the permitting process will be made fully digital, and training courses will be provided for project holders. The country will also keep under review any additional needs for administrative, financial and human resources for permitting authorities at national, regional and local level, and take action if a need is identified to increase their capacities. [...] This measure has not been identified as raising concerns regarding State aid rules.*

C. No selectivity

20. General measures which are effectively open to all undertakings operating within a Member State on an equal basis are not selective.

⁹ See in this respect footnote 305 of the Notice on the notion of State aid.

¹⁰ 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. Note that funds under the Facility constitute State resources for the purposes of Article 107(1) TFEU.

¹¹ The proposal for a Regulation of the European Parliament and of the Council establishing a Recovery and Resilience Facility (COM/2020/408 final) does not exclude the possibility for Member States to channel part of their non-repayable contribution from the RRF through the Renewable Energy Financing Mechanism (Commission Implementing Regulation (EU) 2020/1294 of 15 September 2020 on the Union renewable energy financing mechanism. OJ L 303, 17.9.2020, p. 1, ‘REFM’), established under the Governance Regulation. Moreover, the Guidance to Member States on recovery and resilience plans explicitly refers to this possibility (SWD (2020) 205 final. 17.9.2020, see page 14). If a Member State uses (part of) its non-repayable contribution to make an unconditional payment to the REFM, the amount paid enters the Union budget and is allocated by the REFM to specific projects selected by the Commission on the basis of a grant award procedure. Therefore, the Member State does not have control over the disbursement of the funds by the REFM, and the link between the Member State and the selection and allocation of the beneficiary of support is broken. Therefore, the support by the REFM using the funds received from the Member State would no longer be imputable to the State and would not constitute State aid. As a consequence, the contributions to projects that are financed through the REFM would not be subject to State aid rules.

21. Support measures for the development of RES, for example, are likely to be selective because they favour only producers of renewable energy and are not accessible to other energy producers or other sectors of the economy. Furthermore, in most of the cases, support measures are granted through a selection process (most of the time through competitive bidding procedures) and not all projects will receive support.
22. In light of the nature and type of those measures, support measures covered in this template are likely to be selective.

D. No advantage

23. An advantage, within the meaning of Article 107(1) TFEU, is any economic benefit that an undertaking could not have obtained under normal market conditions.
24. 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 or MEO test).
25. If it is proven that the State acted under the same terms and conditions as a private investor in a comparable situation when providing the necessary funding for investments in the reduction or removal of GHG emissions, then State aid is not involved. This can be assessed on the basis of: (i) significant *pari passu* investments of private operators, i.e. investments made on the same terms and conditions (and therefore with the same level of risks and rewards) as the public authorities who are in a comparable situation¹²; and/or (ii) an ex ante sound business plan, preferably validated by external experts, demonstrating that the investment provides an adequate return for the investor(s), in line with the normal market return that would be reasonably expected by operators on similar projects taking into account the level of risk¹³.

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

26. Support provided through State resources to reduce or remove GHG emissions from the environment generally meets the conditions of Article 107(1) TFEU and is thus normally deemed to constitute State aid. There are however few exceptions where aid is not deemed present. In particular, certain measures may not have an effect on trade between Member States and they may not distort competition.
27. In particular, there might be cases of support measures which have a purely local impact and consequently have no effect on trade between Member States. This is the case, for example, if the beneficiary supplies products or services to a limited area within a Member State and is unlikely to attract customers or investors from other Member States, and if it cannot be foreseen that the measure will have more than a marginal effect on the conditions of cross-border investments or establishments.¹⁴ Nevertheless, given the high degree of liberalisation of energy markets under the EU legal framework establishing an Energy Union between Member States, support for decarbonisation may attract cross-border investments, and affect trade between Member States in most cases, if not all.

¹² For more information, see Notice on the notion of State aid, paragraphs 86 to 88.

¹³ For more information, see Notice on the notion of State aid, chapter 4.2 and in particular paragraphs 101 to 105.

¹⁴ See by analogy paragraph 197 of the Notice on the notion of State aid.

28. The distortion of competition and effect on trade can be excluded in cases of very limited amounts of aid (“*de minimis* aid”). *De minimis* aid is not considered State aid. Therefore, there is no need for prior approval from the Commission and Member States do not have to inform the Commission of such aid.
29. 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* Regulation¹⁵ are respected.¹⁶ Furthermore, an undertaking may benefit from subsidised loans of up to EUR 1 million over 5 years and EUR 500 000 over 10 years without exceeding the *de minimis* Regulation provided: (i) the company is not in difficulty; (ii) the loan is 50% collateralised; and (iii) the gross grant equivalent has been calculated based on the reference rate applicable at the time of the grant.

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

30. If a given investment meets the cumulative conditions of Article 107(1) TFEU and thus entails State aid¹⁷, 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)

31. 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 the beneficiary, as long as the conditions of the authorisation decision are complied with.
32. 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 is the only change to a scheme already authorised by the Commission, it does not need to be re-notified to the Commission for approval¹⁸.

¹⁵ 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.

¹⁶ Notably, the aid must be transparent within the meaning of Article 4 of the *de minimis* 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.

¹⁷ Aid can also take the form of tax advantages, reductions of social security contributions, and other measures mitigating the normal charges of specific undertakings. Fiscal aid can be found compatible under the same rules as other forms of aid (*i.e.* grants), in particular if the tax advantage is linked to a specific investment or activity.

¹⁸ 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.

33. 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 Facility¹⁹ should be ensured (see in particular Article 17(2)).

B. General Block Exemption Regulation²⁰ (GBER)

34. 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.

35. 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 2023.²¹ 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.

a. Investment aid for environmental protection, including decarbonisation

36. **Article 36 GBER (“Investment aid for environmental protection, including decarbonisation”)** allows State aid up to EUR 30 million per undertaking per project for investments to increase the level of environmental protection resulting from the beneficiary’s activities either in the absence of Union standards for environmental protection, or beyond Union standards. In addition, aid may be granted to comply with adopted Union standards, provided that the investment will be finalised at least 18 months before their entry into force.

37. Aid for investments in equipment, machinery and industrial production facilities using fossil fuels, including those using natural gas, is not exempted from the notification obligation under Article 36. However, Article 36 allows the granting of aid for the installation of add-on components improving the level of environmental protection of existing equipment, machinery and industrial production facilities using fossil fuels²², provided that the installation of such add-on components result neither in the expansion of the production capacity nor in higher consumption of fossil fuels.

38. To ensure that the aid results in a net environmental benefit, Article 36 requires that the aid does not merely displace the emissions concerned from one sector to another but overall reduce the targeted emissions²³. This condition is particularly relevant for

¹⁹ OJ L 57, 18.2.2021, p. 17.

²⁰ 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.

²¹ The full text endorsed by the Commission is available here: https://competition-policy.ec.europa.eu/document/8d68e6c3-763a-41db-9e34-42f90bc5e892_en

²² This refers, for instance, to the installation of filters reducing pollutants emission and carbon capture equipment, which allows to avoid the release in the atmosphere of CO₂.

²³ For instance, in case of an aid measure aiming at reducing greenhouse gas emissions, this requirement entails that a reduction in direct greenhouse gas emissions in the beneficiary’s industrial activities not be

projects aiming to reduce greenhouse gas emissions from industrial activities via electrification or hydrogen-based technologies.

39. In cases of projects linked to **dedicated infrastructure for hydrogen, waste heat or CO₂**, the environmental protection may also result from the activities of another entity involved in the infrastructure chain²⁴. Article 36 GBER applies only if no specific rules are laid down in Articles 36a, 36b and 38 to 48 GBER (for energy efficiency improvements, high-efficiency cogeneration and renewables, see below). In such cases, aid can reach EUR 25 million per project.
40. Under Article 36 GBER, specific rules apply to investments in projects concerning the hydrogen, as well as capture and transport of CO₂. As concerns hydrogen, aid may be granted for investments in **equipment using or infrastructure transporting renewable and electricity-based hydrogen**, provided that the electricity-based hydrogen achieves life-cycle greenhouse gas emissions savings of at least 70% relative to a fossil fuel comparator of 94g CO₂eq/MJ (2.256 tCo₂eq/tH₂)²⁵. Under the same condition, aid may also be granted for the **equipment producing the electricity-based hydrogen**.
41. Investments in **CO₂ capture and transport** are eligible for support under Article 36 GBER provided the investment is integrated into a complete CCS/CCU ('carbon capture and storage/carbon capture and use') chain and the net present value of the project, taking into account the avoided costs of CO₂ emissions, is negative.
42. The eligible costs are the extra investment costs compared to the costs of a counterfactual (less environmental friendly) scenario that would occur without the aid²⁶. Such reference investment can generally be identified and may correspond to (i) an investment in less environmentally friendly equipment, (ii) carrying out the same project at a later point in time or (iii) maintaining the existing installations in operation (Article 36(4)(a) to (c)). Specific conditions apply in case of equipment subject to leasing agreements (Article 36(4)(d)). In case of add-on components to an already existing facility, for which there is no less environmentally-friendly counterfactual investment, the eligible costs shall be the total investment costs. The costs not directly linked to the achievement of a higher level of environmental protection shall not be eligible.
43. In principle, the aid intensity shall not exceed 40% of the eligible costs (30% in case of investments in CCS/CCU) and may be increased if: (i) the aid is granted to medium sized undertakings (by 10 percentage points) or (ii) the aid is granted to small undertakings (by 20 percentage points). The aid intensity may be increased by 15 percentage points for investments located in assisted areas (see Article 36(8) GBER). The aid intensity may be further increased to 100% where the aid is granted in a

compensated by a corresponding increase in indirect emissions caused by the same project, typically emissions linked to electricity generation.

²⁴ For more detailed explanations on the application of Article 36 GBER to measures supporting investments in dedicated infrastructure, see the guiding template on "*Energy and hydrogen infrastructure*".

²⁵ To determine the life-cycle greenhouse gas emissions, the greenhouse gas emissions linked to the production of electricity used to produce hydrogen shall be determined by the marginal generation unit in the bidding zone where the electrolyser is located in the imbalance settlement periods when the electrolyser consumes electricity from the grid.

²⁶ The counterfactual shall be credible in the light of legal requirements, market conditions and incentives generated by the EU ETS system.

competitive bidding process, which fulfils all the conditions set out in Article 36(9) GBER²⁷, in addition to those laid down in Article 2, point (38).

44. Should no competitive bidding process take place and no counterfactual scenario be identified, the default aid intensities of 40% or 30% and the applicable bonuses are halved.
45. As an alternative to determining the aid amount as a fraction of the eligible costs, as described in paragraphs [4240](#) to [4442](#), the aid may achieve the difference between the investment costs directly linked to the achievement of a higher level of environmental protection and the operating profit of the investment²⁸. This requires the Member State to conduct an analysis of the discounted revenues and the discounted operating costs over the economic lifetime of the investment. In such situations a claw-back mechanism has to be applied to verify these projections. In the absence of any operating profit, this methodology cannot be applied.

b. Investment aid for energy efficiency measures

46. **Article 38 GBER (“Investment aid for energy efficiency measures other than in buildings”)** allows investment aid up to EUR 30 million per undertaking per project for energy efficiency investments either in the absence of Union standards for environmental protection, or beyond Union standards²⁹. Article 38 does not apply to energy efficiency measures in buildings (for which, see guiding template on *Energy efficiency in buildings*) or to measures for cogeneration or district heating and/or cooling.
47. Aid for the installation of more energy efficient equipment fired by fossil fuels, including natural gas, is not exempted from the notification obligation under Article 38.
48. Under this provision, the eligible costs³⁰ shall be the extra investment costs necessary to achieve the higher level of energy efficiency, compared to the scenario that would occur without the aid³¹. As a rule³², the eligible costs are the extra investment costs

²⁷ 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.

²⁸ The notion of ‘operating profit’ is defined in Article 2(39), as ‘the difference between the discounted revenues and the discounted operating costs over the economic lifetime of the investment, where this difference is positive. The operating costs include costs such as personnel costs, materials, contracted services, communications, energy, maintenance, rent, administration, but exclude depreciation charges and the costs of financing if these have been covered by investment aid. Discounting revenues and operating costs using an appropriate discount rate allows a reasonable profit to be made’.

²⁹ In addition, aid may be granted to comply with adopted Union standards, provided that the investment will be finalised at least 18 months before their entry into force.

³⁰ 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.

established by comparing the aided investment with the investment, corresponding to normal commercial practice in the sector or for the activity concerned, that the beneficiary would have carried out in the counterfactual situation without State aid, i.e. a similar, (standard) less energy efficient equipment that would have been invested into without the aid (**Article 38(3)(a)**). The difference between the costs of the aided investment and the investment in the counterfactual scenario identifies the energy efficiency-related cost and constitute the eligible costs³³.

49. In principle, the aid intensity shall not exceed 30 % of the eligible costs and may be increased if: (i) the aid is granted to medium sized undertakings (by 10 percentage points) or (ii) the aid is granted to small undertakings (by 20 percentage points). The aid intensity may be increased by 15 percentage points for investments located in assisted areas. The aid intensity may be further increased to 100% where the aid is granted in a competitive bidding process, which fulfils all the conditions set out in Article 36(9) GBER³⁴, in addition to those laid down in Article 2, point (38). Should no competitive bidding process take place and no counterfactual scenario be identified, the default aid intensities of 30% and the applicable bonuses are halved.
50. No aid may be granted to comply with applicable Union standards.

c. Investment aid for the promotion of energy from renewable sources, of renewable hydrogen and of high-efficiency cogeneration

51. **Article 41 GBER (“Investment aid for the promotion of energy from renewable sources, of renewable hydrogen and of high-efficiency cogeneration”)** covers aid up to EUR 30 million per undertaking per project for the promotion of energy from renewable energy sources and high-efficiency cogeneration. In particular, under this article it is possible to support:
- a. investments for the production of renewable energy (e.g. solar power, renewable hydrogen, biomass etc.), with the exemption of investments for the production of electricity from renewable hydrogen;
 - b. investments in electricity and thermal storage directly connected to new or existing renewable energy production facilities or high efficiency cogeneration facilities based on renewable energy and obtaining at least 75% of their content, on an annual basis, from the directly connected production facility;
 - c. investments in storage of biofuels, bioliquids and biomass fuels directly connected to new or existing biofuels, bioliquids and biomass fuels production

The counterfactual shall be credible in the light of legal requirements, market conditions and incentives generated by the EU ETS system.

³² Exceptionally, the energy-efficiency improvements relate to a readily identifiable ‘add-on component’ to a pre-existing facility. In that case the cost of the add-on component constitutes the eligible costs.

³³ The counterfactual scenario may also consist in carrying out the same project at a later point in time or maintaining the existing installations in operation (Article 38(3)(b) and (c)). Specific conditions apply in case of equipment subject to leasing agreements (Article 38(3)(d)). Exceptionally, in case of clearly identifiable investment solely aimed at improving energy efficiency, for which there is no less energy efficient counterfactual investment, for which there is no less environmentally-friendly counterfactual investment, the eligible costs will be the total investment costs. The costs not directly linked to the achievement of a higher level of energy efficiency shall not be eligible.

³⁴ See footnote 30.

- facilities and obtaining at least 75% of their content, on an annual basis, from the directly connected production facility;
- d. investments in renewable hydrogen storage and dedicated infrastructure for the transmission or distribution of renewable hydrogen;
 - e. investments in high efficiency cogeneration based on renewable energy or natural gas in compliance with section 4.30 of Annex 1 to Commission Delegated Regulation (EU) 2022/1214.
52. Aid for the investments for the production of renewable hydrogen can be block-exempted only for installations producing exclusively renewable hydrogen.
53. Aid for the production of biofuels, bioliquids, biogas (including biomethane) and biomass fuels can be block-exempted only where the aided fuels are compliant with the sustainability and greenhouse gases emissions saving criteria of Directive (EU) 2018/2001 and its implementing or delegated acts and are made from the feedstock listed in Annex IX to that Directive.
54. Under this provision aid can be granted only in respect of newly installed or refurbished capacities. The eligible costs are the total investment costs.
55. The aid intensity cannot exceed 45% of the eligible costs of investments in the production of renewable energy sources and high-efficiency cogeneration based on renewable sources (see points 51.a and 51.e above). For all other investments, the aid intensity cannot exceed 30% of the eligible costs. The aid intensity may be increased if: (i) the aid is granted to small undertakings (by 20 percentage points) or (ii) if the aid is granted to medium-sized undertakings (by 10 percentage points).
56. The aid intensity may be further increased to 100% where the aid is granted in a competitive bidding procedures, which fulfil all the conditions set out in Article 41(10) GBER, in addition to those laid down in Article 2, point (38).

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

Investment 1: Supporting the development of high-efficiency cogeneration installations based on renewable energy: *This measure will support the installation of new high-efficiency cogeneration installations using renewable energy sources to produce electricity and heat; [...] the support will take the form of investment aid covering up to 45% of the total investment costs up to € 30 million per undertaking per project (Article 41 of the General Block Exemption regulation)[...].*

Investment 2: Supporting the development of electrolyzers: *Upfront investment aid will support new electrolyzers whenever they will be able to show that hydrogen is produced exclusively from renewable; [...] aid up to € 30 million per undertaking per project will be covered by Article 41 of the General Block Exemption regulation; [...] aid will be limited to 45% of the total investment costs or 100% in case of competitive bidding procedures [...].*

Investment 3: Supporting the development of renewable electricity production and storage facilities: *This measure will support the installation of renewable electricity production facilities and directly connected electricity storage facilities obtaining at least 75% of their content on an annual basis from the connected production facilities; [...] aid up to € 30 million per undertaking per project will be covered by Article 41 of the General Block Exemption regulation; [...] aid will be limited to 45% of the total investment costs for the production facilities and 30% for the storage facilities [...].*

57. Finally, the amendment to the GBER of July 2021³⁵ has introduced Article 56e providing the possibility to grant investment aid in the energy sector via financial products supported by the InvestEU Fund. These provisions may also apply when RRF funds are combined with InvestEU Fund. **With regard to aid for energy generation from renewable energy sources, including hydrogen, Article 56e** mirrors the scope and the requirements set out in Article 41. Article 56e specifies that the nominal amount of total financing provided to any final beneficiary per project referred to above under the support of the InvestEU Fund shall not exceed EUR 75 million.

d. Operating aid for the promotion of energy from renewable energy sources

58. **Article 42 GBER (“Operating aid for the promotion of electricity from renewable sources”)** and **Article 43 GBER (“Operating aid for the promotion of energy from renewable sources and of renewable hydrogen in small projects and renewable energy communities”)** govern the conditions under which operating aid for the production of energy from RES, including renewable hydrogen can be block-exempted. The notification threshold for such aid is EUR 30 million per undertaking per project and EUR 300 million per year for the sum of the budgets of all the schemes falling under each Article 42 and 43.³⁶

59. In order to be block-exempted, the **operating aid for the promotion of electricity from RES (Article 42)**, with the exemption of electricity produced from renewable hydrogen, must be granted in a competitive bidding process, which fulfils all the conditions set out in Article 42(2) GBER, in addition to those laid down in Article 2, point (38). The bidding process should be generally open to all generators producing electricity from renewable energy sources on a non-discriminatory basis. However, possibilities to limit the competitive bidding process to specific technologies are foreseen in Article 42(3).³⁷ Where the bidding process is limited to one or more innovative technologies, the aid granted to these technologies shall not exceed 5% of the planned new electricity capacity from RES per year in total (Article 42(4)).

60. Aid can be granted only for periods where prices are not negative and over the lifetime of the project. Aid should be granted as a premium in addition to the market price or in the form of a contract for difference whereby the generators sell their electricity directly in the market. Aid beneficiaries have to sell their electricity directly in the market and be subject to standard balancing responsibilities. Exemptions apply for small-scale renewable electricity installations, as defined in Regulation (EU) 2019/943.

61. **Operating aid for the production of energy from RES and renewable hydrogen in small projects and renewable energy communities (Article 43)**, with the exemption

³⁵ Commission Regulation (EU) No 2021/1237 of 23 July 2021 amending Regulation (EU) No 651/2014, OJ L 270, 29.7.2021, p. 39–75.

³⁶ See Article 4(1)(v) GBER.

³⁷ These include cases where: (a) a measure aims specifically to support demonstration projects; (b) a measure aims to address not only decarbonisation but also air quality or other pollution; (c) a Member State identifies reasons to expect that eligible sectors or innovative technologies have the potential to make an important and cost-effective contribution to environmental protection and deep decarbonisation in the longer term; (d) a measure is required to achieve diversification necessary to avoid exacerbating issues related to network stability; (e) a more selective approach can be expected to lead to lower costs of achieving environmental protection (for example through reduced system integration costs as a result of diversification, including between renewables, which could also include demand response and/or storage), and/or result in less distortion of competition.

of electricity produced from renewable hydrogen, can be block-exempted provided the investments' maximum installed capacity/demand falls under the thresholds specified in Art. 43(2) and 43(2a) GBER.

62. Aid for the production of hydrogen can be block-exempted only for installations producing exclusively renewable hydrogen.
63. Aid for the production of biofuels, bioliquids, biogas (including biomethane) and biomass fuels can be block-exempted only where the aided fuels are compliant with the sustainability and greenhouse gases emissions saving criteria of Directive (EU) 2018/2001 and its implementing or delegated acts and are made from the feedstock listed in Annex IX to that Directive.
64. Aid under this article can only be granted for periods where prices are not negative and over the lifetime of the project. Aid should be granted as a premium in addition to the market price or in the form of a contract for difference whereby the generators sell their electricity directly in the market. Aid beneficiaries have to sell their electricity directly in the market and be subject to standard balancing responsibilities. Exemptions apply for small-scale renewable electricity installations, as defined in Regulation (EU) 2019/943.
65. Aid should be capped to the net extra cost ('funding gap') necessary to meet the objective of the aid measure, compared to a plausible counterfactual scenario in the absence of aid. Where aid is granted through a competitive bidding process, a detailed assessment of the net extra cost is not required.

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

66. If the measure constitutes State aid and does not meet the conditions allowing an exemption from notification, a notification is required. The aim of the present section is to assist Member States in identifying and providing the necessary 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.

See the State aid assessment of the additional examples of investments and reforms contained in the [component – Power Up](#)

Investment 1: Supporting the reduction of greenhouse gas emissions: *This measure will support the reduction of greenhouse gas emissions, by providing financial support through a competitive bidding process open to all technologies that can contribute to decarbonisation, including but not limited to: investments in new renewable energy capacity, energy efficiency, CCS/CCU, etc. [...] The country will notify a support scheme for decarbonisation under section 4.1 of the CEEAG.*

Investment 2: Supporting the development of renewable energy generation facilities: *Aid will support the installation of new renewable energy generation facilities to achieve the renewable energy target [...] The country will notify a support scheme for decarbonisation, whenever the aid thresholds are higher than those foreseen in Article 4 of the General Block Exemption regulation.*

A. Procedure for pre-notification and notification

67. 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.
68. 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 and amendment of their Recovery and Resilience Plans. Therefore, informal contacts and pre-notifications are encouraged as soon as possible.
69. The Commission aims to complete the assessment of notified State aid measures within six weeks from receiving complete notification from the Member State.

B. Relevant legal bases for compatibility with the Treaty

70. Aid for the reduction and removal of greenhouse gas emissions may be declared compatible under Article 107(3)(c) TFEU if it facilitates the development of certain economic activity in a manner that contributes to environmental protection and does not adversely affect trading conditions to an extent contrary to the common interest.
71. 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), and the latter are kept to the minimum.
72. In its compatibility assessment, the Commission will check whether the conditions of Article 107(3)(c) TFEU in conjunction with the CEEAG 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.

a. Guidelines on State aid for climate, environmental protection and energy 2022 (CEEAG)

73. The CEEAG set out the principles for aid compatibility for both investment aid and operating aid. The following points provide a comprehensive, but **not exhaustive** description of the principles applicable to aid for decarbonisation.
74. Section 4.1 of the CEEAG on “Aid for the reduction and removal of greenhouse gas emissions including through support for renewable energy and energy efficiency” lays down the compatibility criteria for measures whose primary objective is decarbonisation. These include measures to support the production of energy from renewable sources, the promotion of energy efficiency, as well as measures involving a wide range of other technologies that can contribute to the achievement of the Union’s climate targets.
75. Under this section, support measures should be designed to include all technologies that can contribute to the reduction or removal of greenhouse gas emissions from the environment. In line with point 96 of the CEEAG, limitations of the scope of a measure might be justified based, for example, on the need to achieve specific technology target established in Union law, as it is the case for renewable energy and energy efficiency, the need for diversification or the long term potential of innovative technologies.
76. 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. 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.
77. The bidding process should, in principle, be open to all technologies that can contribute to the reduction or removal of greenhouse gas emissions. However, the process can be limited to one or more specific categories of beneficiary where there is a deviation or more than 10% between the bid level that different categories of beneficiaries are expected to offer or where the objective of the measure might be better achieved by limiting the bidding process to certain categories of beneficiaries in line with point 96 of the CEEAG.
78. The selection criteria used for allocating the aid in the competitive bidding process should put the contribution to the main objective of the measure in relation with the aid amount requested by the applicant. Selection criteria which are not directly or indirectly related to the main objective of the measure may account for up to 30% of the weighting of all the selection criteria.
79. Exceptions from the requirement to allocate aid and determine the aid level through a competitive bidding process can be justified where the expected number of potential bidders is insufficient to ensure competition, where the beneficiaries qualify as small project in line with point 107(b) of the CEEAG and where individual projects applying innovative technologies have been selected in an open call to form part of a large integrated cross-border project jointly designed but several Member States in line with point 107(c) of the CEEAG.

80. Where the aid is not granted 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. This is especially in cases where there is uncertainty concerning future market developments related to the business case, including for example in relation to input costs or revenues stemming from the supported projects. It should be noted that, where aid is granted through competitive bidding, a quantification of the funding need (i.e. an estimate of the funding gap) for one or more reference projects supported might be required to assess the necessity of the aid and its incentive effect.
81. Where aid covers operating costs, Member States should design the measure to prevent any undue distortion to the efficient functioning of markets. Therefore, aid beneficiaries should not be incentivised to offer their output below their marginal costs and must not receive aid for production in any period in which the market value of that production is negative. In addition, to incentives must not be provided for the generation of energy that would displace less polluting forms of energy.
82. In line with points 116 CEEAG, the aid must result in an overall reduction of greenhouse gas emissions, and must not merely displace the greenhouse gas emissions from one sector to another (e.g., from the industrial production sector to the energy sector). This entails that reductions in direct greenhouse gas emissions from the supported activity must not be outweighed by parallel increases in greenhouse gas emissions in other sectors caused by the aided projects. This condition is particularly relevant for projects aiming to reduce greenhouse gas emissions from industrial activities via electrification or hydrogen-based technologies.
83. Moreover, in line with point 117 CEEAG, aid for the decarbonisation of industrial activities must reduce the emissions directly resulting from that industrial activity, and aid for improvements of the energy efficiency of industrial activities must improve energy efficiency of the beneficiaries' activities.
84. Aid for decarbonisation should contribute positively to the reduction or removal of greenhouse gas emissions and to the achievement of the Union's climate targets. In this context, the Commission considers that measures that incentivise new investments in energy or industrial production based on the most polluting fossil fuels, such as coal, diesel, lignite, oil, peat and oil shale, do not have any positive environmental effects.
85. Similarly, measures that incentivise the new investments in energy or industrial production based on natural gas may aggravate negative environmental externalities in the long term. Therefore, for investments in natural gas to be seen as having a positive environmental effect, Member States must explain how a lock-in of this gas-fired energy generation or gas-fired production equipment will be avoided.
86. Finally, for measures designed starting from July 2023, Member States will be required to consult publicly on the competition impacts and proportionality of measures to be notified under section 4.1 of the CEEAG under the circumstances laid down in section

4.1.3.4. In addition, Member States would need to calculate the subsidy per tonne of CO₂ equivalent emissions avoided for each project or reference project supported.

b. Important Projects of Common European Interest (IPCEI)

87. Cross-border integrated projects, e.g. in relation to investments in RES hydrogen – depending on the specific structure and purposes of such projects – may also be eligible for support under the IPCEI Communication³⁸.
88. The IPCEI Communication clearly sets out the rules for approving State aid for large cross border projects up to the first industrial deployment phase when they entail significant research and innovation and/or for environmental, energy or transport projects of great importance in line with the Union’s relevant strategies. Therefore, Member States can use Facility funding to support individual company projects for which aid is authorised by the Commission as part of an IPCEI.
89. The IPCEI State aid rules can offer more flexibility than other State aid rules, in particular rules for aid to research projects. Given the high innovativeness requirement, the rules allow for higher aid intensities and also for aid to the first industrial development on the basis of the projects’ funding gap. In exchange, aid beneficiaries have to fulfil certain eligibility and compatibility criteria, such as to commit to substantial spillovers benefitting the European economy or society.
90. An IPCEI can be a single or an integrated project, i.e. a group of single projects inserted in a common structure, roadmap or programme, aiming at the same objective and based on a coherent systemic approach. Integration is decisive for an IPCEI and must be clearly demonstrated. Each individual company project of an integrated IPCEI must demonstrate its value and contribution to achieve the IPCEI objectives and has to fulfil all eligibility and compatibility criteria. In the case of hydrogen projects, it is not sufficient that each project somehow relates to hydrogen or avoids a certain volume of carbon related emissions to demonstrate integration.
91. Also, in order to be deemed compatible under the IPCEI Communication, an IPCEI project must among others address a market failure or other important systemic failures and:
 - 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 limit potential distortions to competition;
 - v. openness and transparency should 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 constitute a means to ensure openness and transparency.

³⁸ 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 need to be provided.
92. Depending on the type of project supported, additional specific conditions will need to be complied with:
- i. IPCEI aid may cover R&D activities of a major innovative nature or which constitute an important added value in terms of research and innovation and must go beyond the global state-of-the-art (point 22 of the IPCEI Communication).
 - ii. IPCEI aid may also cover first industrial deployment activities. These activities must then allow for the development of a new product or service with high research and innovation content or the deployment of a fundamentally innovative production process (point 23 of the IPCEI Communication). 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 excludes mass production and commercial activities (point 24 of the IPCEI Communication).
 - iii. IPCEI aid may also cover infrastructure³⁹-related projects that fulfil the specific eligibility conditions of point 25 of the IPCEI Communication, i.e. they must either be of great importance for the environmental, energy, including security of energy supply, or transport strategy of the Union or contribute significantly to the internal market. In this case aid to cover supplies and materials is allowed only on a temporary basis, during the construction phase of the infrastructure or facility, but not during its commercial exploitation.
93. An IPCEI in innovative hydrogen technologies and systems complying with points 22 , 23 and 24 of the IPCEI Communication can be well suited to promote the technological innovation needed to deploy an efficient low carbon/renewable hydrogen value chain (e.g. scaling-up innovative electrolysers). In addition, as set out in the EU’s hydrogen strategy, the development of renewable hydrogen is a priority for the Union. Projects to coordinate cross-border cooperation for the production of renewable hydrogen or to establish the necessary infrastructure for hydrogen transmission and storage could be part of an IPCEI based on point 25 of the IPCEI Communication provided they qualify as infrastructure, make a considerable contribution to the Union’s hydrogen strategy for a climate-neutral Europe and are open.

c. Temporary Crisis and Transition Framework (TCTF)

94. On 23 March 2022, the Commission adopted a State Aid Temporary Crisis Framework (“TCF”) to allow Member States to remedy the liquidity shortage faced by those undertakings affected by the serious disturbance of the economy caused by the Russian military aggression against Ukraine. The adoption of the “Temporary Crisis and Transition Framework (“TCTF”) on 9 March 2023 amended and prolonged certain parts of this framework (incl. the ones covered below) until 31 December 2025, providing Member States with the possibility to further support their transition towards

³⁹ Subject to certain conditions an energy-producing plant might also qualify as infrastructure.

a net-zero economy as well as remedy the negative consequences of the ongoing war in Ukraine.

i. Aid for accelerating the rollout of renewable energy and energy storage relevant for REPowerEU

95. **Section 2.5 of the TCTF on “Aid for accelerating the rollout of renewable energy and energy storage relevant for REPowerEU”** lays down the compatibility criteria for support to accelerate and expand the availability of renewable energy in a cost-effective way with a view of quickly reducing dependency on fossil fuel imports, accelerate the energy transition and achieve lower and less volatile prices. In particular, under this article it is possible to provide investment and operating support to:
- a. energy from renewable sources, including the production of renewable hydrogen and renewable hydrogen-derived fuels but excluding the production of electricity from renewable hydrogen;
 - b. electricity and thermal storage;
 - c. storage for renewable hydrogen, biofuels, bioliquids, biogas (including biomethane) and biomass fuels that obtains at least 75 % of its content from a directly connected renewable hydrogen, biofuels, bioliquids, biogas or biomass fuels production facility, on an annual basis.
96. Where aid is granted to renewable hydrogen or renewable hydrogen-derived fuels, Member States must ensure that the hydrogen and the hydrogen-derived fuels are produced from renewable energy sources in accordance with the methodologies set out for renewable liquid and gaseous transport fuels of non-biological origin in Directive (EU) 2018/2001 and its implementing or delegated acts.
97. Where aid is granted to biofuels, bioliquids, biogas (including biomethane) and biomass fuels, the Member State must ensure that the aided fuels are compliant with the sustainability and greenhouse gases emissions saving criteria of Directive (EU) 2018/2001 and its implementing or delegated acts.
98. Under section 2.5 TCTF, support needs to be granted only with respect to newly installed or repowered capacities on the basis of a scheme with an estimated volume and budget. Schemes may be limited to one or several technologies but must not include any artificial limitation or discrimination.
99. Support under this section can be granted until 31 December 2025 and supported projects must be completed and in operation within 36 months after the date of granting with the exception of offshore wind technologies for which no such deadline is set. In order for this timeline to be respected, Member States need to have in place an effective system of penalties in case of non-compliance.
100. Aid under this section may be granted for projects for which works started as of 9 March 2023, with the exception of project eligible under the previous Temporary Crisis Framework for which works may have started as of 20 July 2022. For projects started before that, aid may be granted under section 2.5 TCTF if it is necessary to significantly accelerate or widen the scope of the project. In such cases, only the additional costs in relation to the acceleration efforts or the widened scope are eligible for aid.
101. Both investment and operating aid can be cumulated with any other state aid for different identifiable eligible costs. Cumulation in relation to the same eligible costs partly or fully overlapping, is also possible where this does not result in exceeding the applicable aid intensity. Finally, cumulation of both investment and operating aid under

section 2.5 TCTF is only possible where the investment aid scheme foresees for that possibility at the time of its initial notification.

102. Member States are required to ensure compliance with the ‘do no significant harm’ principle in the implementation of aid schemes under section 2.5 TCTF.
103. For what concerns **investment aid (section 2.5.1)** support can be granted in the form of direct grants, repayable advances, loans, guarantees or tax advantages.
104. The amount of aid can always be determined through open, clear, transparent and non-discriminatory competitive bidding procedures, based on objective criteria, defined ex ante in accordance with the objective of the measure and minimising the risk of strategic bidding and undersubscription. At least 70% of the total selection criteria used to ranking bids must be defined in terms of aid per unit of environmental protection or aid per unit of energy output or capacity. Moreover, the volumes of capacity or production tendered must be set to ensure that the bidding process is effectively competitive and, in case of repeated undersubscription of competitive bidding processes, Member States must introduce remedies for any future schemes notified to the Commission for the same technology. Where aid is granted through competitive bidding procedure, it can reach up to 100% of the total investment costs.
105. Alternatively, the level of support can be set administratively for all technologies with the exception of large solar, wind and hydropower (above the threshold of € 30 million per undertaking per project and the installed capacity thresholds set out in point 77(h) TCTF). Where aid is administratively set, it can reach up to 45% of the total investment costs and it may be increased if: (i) the aid is granted to small undertakings (by 20 percentage points) or (ii) if the aid is granted to medium-sized undertakings (by 10 percentage points).
106. For what concerns **operating aid (section 2.5.2)**, aid can only be granted in the form of two-way contracts for difference in relation to the energy output of the installation, and with a duration of up to 20 years after the aided installation starts operations.
107. The amount of aid can always be determined through open, clear, transparent and non-discriminatory competitive bidding procedures, based on objective criteria, defined ex ante in accordance with the objective of the measure and minimising the risk of strategic bidding and undersubscription. At least 70% of the total selection criteria used to ranking bids must be defined in terms of aid per unit of environmental protection or aid per unit of energy output or capacity. Moreover, the volumes of capacity or production tendered must be set to ensure that the bidding process is effectively competitive and, in case of repeated undersubscription of competitive bidding processes, Member States must introduce remedies for any future schemes notified to the Commission for the same technology.
108. Alternatively, the level of support can be set administratively for all technologies with the exception of large solar, wind and hydropower (above the threshold of € 30 million per undertaking per project and the installed capacity thresholds set out in point 78(h) TCTF). In this case, the strike price of the contracts for difference has to be set by the competent energy regulatory authority to cover expected net costs, including the estimated WACC, and taking into account all main revenues and any aid already received by the aid applicants.

See the State aid assessment of the additional examples of investments and reforms contained

in the [component – Power Up](#)

Investment 1: Supporting the development of biomass production and storage facilities: *This measure will provide aid for investments in biomass production and storage facilities, obtaining at least 75% of their content from the directly connected biomass production installation; [...] aid will be granted administratively in the form of direct grants covering up to 45% of the total investment costs. [...]*

Investment 2: Supporting the development of renewable hydrogen production facilities: *This measure will provide aid for investments for the production of renewable hydrogen in accordance with the methodologies set out for renewable liquid and gaseous transport fuels of non-biological origin in Directive (EU) 2018/2001 and its implementing or delegated acts; [...] aid will be granted administratively in the form of direct grants covering up to 45% of the total investment costs. [...]*

Investment 3: Supporting the production of solar power: *This measure will provide aid for the production of electricity from solar PV; [...] aid will be granted in the form of two-ways contracts for difference with strike price defined in a competitive bidding procedure; [...] the strike price may be set administratively by the NRA to cover expected costs for projects below 1 MW installed capacity requiring aid amounts up to € 30 million per undertaking per project. [...]*

ii. Aid for industrial decarbonisation

109. **Section 2.6 of the TCTF on “Aid for the decarbonisation of industrial production processes through electrification and/or the use of renewable and electricity-based hydrogen fulfilling certain conditions and for energy efficiency measures”** lays down compatibility criteria for schemes supporting investments in the decarbonisation of industrial activities, through electrification and technologies using renewable and electricity-based hydrogen fulfilling certain conditions as well as renewable hydrogen-derived fuels, and in energy efficiency measures in industry that can be implemented fast. The aim is to accelerate decarbonisation of industry to reduce the dependency on Russian fossil fuels imports.

110. In order to be eligible under section 2.6 of the TCTF, the investment must enable the beneficiary to (i) reduce by at least 40 % compared to the situation before the aid, direct greenhouse gas emissions from its industrial installation currently relying on fossil fuels as energy source or feedstock, by means of the electrification of the production processes, or the use of renewable and electricity-based hydrogen to substitute fossil fuels; and/or (ii) reduce by at least 20 % compared to the situation before the aid, energy consumption in industrial installations in relation to the aided activities. Moreover, in case of investments relating to activities covered by the EU Emission Trading System (ETS), the aid must lead to a reduction in the beneficiary installation’s greenhouse gas emissions going below the relevant benchmarks for free allocation set out in Commission Implementing Regulation (EU) 2021/447⁴⁰.

111. In case of projects involving the use of hydrogen produced from electricity, it must be ensured that the hydrogen used falls under one of the following situations:

⁴⁰ Commission Implementing Regulation (EU) 2021/447 of 12 March 2021 determining revised benchmark values for free allocation of emission allowances for the period from 2021 to 2025 pursuant to Article 10a(2) of Directive 2003/87/EC of the European Parliament and of the Council (OJ L 87, 15.3.2021, p. 29).

- a. It qualifies as renewable, in that it is produced from renewable energy sources in accordance with the methodologies set out for renewable liquid and gaseous transport fuels of non-biological origin in Directive (EU) 2018/2001 (point 81(g) of the TCTF);
- b. It is produced only in hours in which the marginal generation unit in the relevant bidding zone is a fossil-free electricity generation plant (point 81(i)(i) of the TCTF);
- c. It is produced from electricity taken from the grid and the electrolyser produces hydrogen for a number of full load hours equal or lower than the number of hours in which the marginal price of electricity in the bidding zone was set by installations producing fossil-free electricity (point 81(i)(ii) of the TCTF);
- d. alternatively, the Member State must ensure that the used electricity-based hydrogen achieves life-cycle greenhouse gas emissions savings of at least 70 %. The method to compute the greenhouse gas emissions allocated to the electricity should not lead to an increased consumption of fossil fuels in line with REPowerEU objectives (point 81(i)(iii) of the TCTF).

112. In case of projects involving renewable hydrogen-derived fuels, it must be ensured that those fuels meet all the following conditions:

- a. they are liquid and gaseous fuels that derive from renewable hydrogen, the energy content of which is derived from renewable sources other than biomass (point 81(h)(i) of the TCTF);
- b. they achieve lifecycle greenhouse gas emissions savings of at least 70% relative to a fossil fuel comparator of 94g CO₂eq/MJ (point 81(h)(ii) of the TCTF) and
- c. they have been produced in accordance with the methodologies set out for renewable liquid and gaseous transport fuels of non-biological origin in Directive (EU) 2018/2001 and its implementing or delegated acts (point 81(h)(iii) of the TCTF).

113. Aid has to be granted on the basis of a scheme with an estimated volume and budget and in the form of direct grants, repayable advances, loans, guarantees or tax advantages. The maximum individual aid amount that may be granted per undertaking must, in principle, not exceed 10 % of the total budget available for such a scheme or EUR 200 million. With appropriate justification provided by the Member State to the Commission, the Commission may accept schemes that provide for the granting of individual aid amounts exceeding 10 % of the total budget available for the scheme.

114. The aid must not be granted for merely complying with applicable Union standards and must not be used to finance an increase of the overall production capacity of the beneficiary. However, a limited capacity increase may be accepted if it is necessary for technical reasons⁴¹. A capacity increase up to 2% compared to the situation before the aid is deemed to be necessary for technical reasons.

⁴¹ For instance, such technical necessity could be accepted in case it is impossible to replace old equipment or machinery with new ones of exactly the same technical specifications.

115. The installation or equipment to be financed by the investments supported under Section 2.6 of the TCF must be completed and be in full operation within 36 months after the date of granting. The scheme should include a system of penalties, in case those deadlines are not met.

116. There are three alternative methodologies to calculate the aid amount:

- a. According to the first method, the eligible costs are the difference between the costs of the aided project and the cost savings or additional revenues, compared to the situation in the absence of the aid, over the lifetime of the investment. The maximum basic aid intensity is 40% of the eligible costs, which may be increased by 10 percentage points for aid granted to medium sized undertakings and by 20 percentage points for aid granted to small undertakings. The aid intensity may also be increased by 15 percentage points for investments delivering a reduction of direct greenhouse gas emissions of at least 55 % or of energy consumption of at least 25 % compared to the situation prior to the investment. Finally, a clawback mechanism must be foreseen in order to address windfall profits, for example in case of extremely high electricity prices (point 81(n) of the TCTF).
- b. According to the second method, the investment aid may be granted in a competitive bidding process that is open, clear, transparent and non-discriminatory, based on objective criteria that are defined ex-ante and minimising the risk of strategic bidding. At least 70 % in the total selection criteria used for ranking bids must be defined in terms of aid per unit of environmental protection (such as EUR per tonne of CO₂ reduced, or EUR per unit of energy saved). The budget related to the bidding process must be a binding constraint in that it can be expected that not all bidders will receive aid (point 81(o) of the TCTF).
- c. According to the third method, the eligible costs are the investment costs linked to the project for which aid is granted (i.e. costs of equipment, machinery, installations etc). The aid can reach up to 60% of such eligible costs in projects involving the use of hydrogen or renewable hydrogen-derived fuels and up to 30% for projects involving electrification and energy efficiency (point 81(p) of the TCTF).

117. Aid under Section 2.6 can be cumulated with other aid for different eligible costs. Aid calculated under the first and second method (as described above) can be cumulated with other aid or with support from centrally managed funds for overlapping eligible costs provided that the maximum aid amount under points 81(n) and 81(o) of the TCTF are respected. Aid calculated under the third method (as described above) can be cumulated with other aid or support from centrally managed funds for overlapping eligible costs provided that the highest aid amount or intensity under any of the applicable rules is respected. The total aid amount cannot exceed 100% of the eligible costs.

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.
- Communication from the Commission — Guidelines on State aid for climate, environmental protection and energy 2022, OJ C 80, 18.2.2022, p.1.
- Communication from the Commission — Temporary Crisis Framework for State Aid measures to support the economy following the aggression against Ukraine by Russia, OJ C 426, 9.11.2022, 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.
- 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.
- 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.
- Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, OJ L 328, 21.12.2018, p. 82.
- Communication from the Commission - A hydrogen strategy for a climate-neutral Europe, COM(2020 301 final).
- Guidelines on regional State aid for 2014-2020, OJ C209, 23.7.2013, p.1.
- Guidelines on regional State aid, OJ C 153, 29.4.2021, p. 1.