EUROPEAN COMMISSION

Brussels, 19.12.2023
C(2023) 9124 final

In the published version of this decision, some information has been omitted, pursuant to articles 30 and 31 of 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, concerning non-disclosure of information covered by professional secrecy. The omissions are shown thus […]		PUBLIC VERSION This document is made available for information purposes only.

Subject: **State Aid SA.105337 (2023/N) – Germany**
Aid to AG der Dillinger Hüttenwerke, Saarstahl AG and ROGESA Roheisengesellschaft Saar mbH for project Power4Steel – Phase 1 in Völklingen and Dillingen

Excellency,

1. PROCEDURE

(1) Following pre-notification contacts, the German authorities notified on 5 December 2023, according to Article 108(3) of the Treaty on the Functioning of the European Union ('TFEU'), State aid in favour of AG der Dillinger Hüttenwerke, Saarstahl AG and ROGESA Roheisengesellschaft Saar mbH. The Commission requested additional information, which the German authorities submitted on 6 December 2023.

(2) Germany exceptionally agrees to waive its rights deriving from Article 342 TFEU, in conjunction with Article 3 of Regulation 1/1958 ([1]) and to have this Decision adopted and notified in English.

([1]) Regulation No 1 determining the languages to be used by the European Economic Community, OJ 17, 6.10.1958, p. 385.

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2. DETAILED DESCRIPTION OF THE MEASURE

2.1. Introduction

(3) The Power4Steel – Phase 1 project (hereinafter 'the project') is part of a larger project which aims at contributing from 2027 to 2042 to the transformation of the steel industry in the German state of Saarland towards climate neutrality by replacing existing coal-based melting facilities and by leveraging on the use of renewable and low-carbon hydrogen. However, the notified measure is limited to Phase 1 of the Power4Steel project. Germany intends to support the project with EUR 2.6 billion (hereinafter 'the measure').

2.2. Background and objective of the measure

(4) With the European Green Deal Communication ([2]), the Commission sets an objective of no net emissions of greenhouse gases by 2050. This objective of becoming climate neutral was put into law with the adoption of Regulation (EU) 2021/1119 (the 'European Climate Law') ([3]), which sets a legally binding ambitious climate protection target of reducing greenhouse gas emissions by at least 55 % by 2030 compared to 1990 levels. The 'Fit for 55' package of legislative proposals supports the achievement of those targets ([4]) and puts the Union on track to climate neutrality by 2050.

(5) As explained in the Hydrogen Strategy for a Climate-Neutral Europe Communication ([5]) (the 'EU Hydrogen Strategy'), hydrogen can be used as a feedstock, a fuel or an energy carrier and storage, and has many possible applications across industry, transport, power and buildings sectors. Most importantly, using hydrogen does not emit carbon dioxide ('CO_2') and results in almost no air pollution. Hydrogen offers a solution to decarbonise industrial processes and economic sectors where reducing carbon emissions is both urgent and hard to achieve ([6]).

(6) However, the production of hydrogen, different from its use, can result in CO_2 emissions if the hydrogen is produced using steam methane reforming technology

([2]) Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions 'The European Green Deal', COM(2019) 640 final.

([3]) Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law'), OJ L 243, 9.7.2021, p. 1.

([4]) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions ''Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality', COM(2021) 550 final.

([5]) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – A hydrogen strategy for a climate-neutral Europe, COM(2020) 301 final.

([6]) In the EU Hydrogen Strategy, the Commission notes, inter alia, that a price difference exists depending on how hydrogen is produced and, in particular, explains that in 2019 estimated costs for fossil-based hydrogen with carbon capture and storage were around half of those for renewable hydrogen.

or energy generated from the combustion of fossil fuels. Therefore, the Commission stressed in the EU Hydrogen Strategy that the priority for the EU is to use renewable hydrogen, produced using mainly wind and solar energy, as it is the most compatible option with the EU's climate neutrality and zero pollution goal in the long term and the most coherent with an integrated energy system.

(7) Furthermore, the Commission's REPowerEU Communication of March 2022 ([7]) outlined the important role that hydrogen could play in diversifying the EU's gas supplies and reducing the reliance of industrial companies on fossil fuels, especially in the hard-to-abate industrial sectors. To that end, the REPowerEU Plan of May 2022 ([8]) sets a target of 10 million tonnes of domestic renewable hydrogen production and 10 million tonnes of renewable hydrogen imports by 2030.

(8) The production of low-CO_2 steel products can also contribute to the overall decarbonisation of several value chains using that steel downstream, such as the automotive sector, the construction sector, the power engineering industry, the aerospace industry, the machine manufacturing sector, the mechanical engineering sector, the offshore wind power sector, and the line pipe or boiler construction sectors.

(9) The German authorities explain that reducing greenhouse gas emissions is a national priority. To that end, the German authorities have adopted a number of policy measures (including those described in recitals (10) to (16)) to incentivise the reduction of greenhouse gas emissions by the industry. The German authorities further explain that the use of hydrogen has a great decarbonisation potential in the steel sector, as in other hard-to-abate sectors of the economy.

(10) In that framework, Germany, together with other 21 Member States and Norway, agreed to design Important Projects of Common European Interest aimed at ensuring the environmental and social sustainability of the development of hydrogen technologies and systems across multiple sectors (9). That common initiative, amongst other elements, seeks to meet the goals of the EU Hydrogen Strategy and the EU's objectives in reaching its decarbonisation targets.

(11) In October 2019, the German government adopted the Climate Protection Programme 2030 ([10]). That programme is a comprehensive package of measures

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([7]) Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions – REPowerEU: Joint European Action for more affordable, secure and sustainable energy, COM(2022) 108 final.

([8]) Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions – REPowerEU Plan, COM(2022) 230 final.

([9]) December 2020, Manifesto for the development of a European "Hydrogen Technologies and Systems" value chain, available at: manifesto-for-development-of-european-hydrogen-technologies-systems-value-chain.pdf (bmwk.de).

([10]) 'Klimaschutzprogramm 2030 der Bundesregierung zur Umsetzung des Klimaschutzplans 2050', available online at: https://www.bundesfinanzministerium.de/Content/DE/Downloads/Klimaschutz/klimaschutzprogramm-2030-der-bundesregierung-zur-umsetzung-des-klimaschutzplans-2050.pdf?__blob=publicationFile&v=4

aimed at meeting the target of reducing greenhouse gases by 55% compared to the 1990 level by 2030, with which the German government has created a new level of commitment in German climate policy. Among the core components of that programme are a national emissions trading scheme in the areas of heating and transport, a gradual phase-out of coal-fired power generation, and support measures in the energy, industrial buildings, transport, agriculture and waste management sectors.

(12) Moreover, with the Future Package as part of the 2020 'Economic stimulus package' ([11]), the German government has launched further climate protection measures, such as support for the market ramp-up of hydrogen technologies for use in industry.

(13) On 10 June 2020, the German government adopted a National Hydrogen Strategy and underpinned it with an action plan that will be continuously developed. The National Hydrogen Strategy has been updated on 26 July 2023 ([12]). One key goal of the National Hydrogen Strategy is to increase the production of green hydrogen in order to meet the demand of the basic industry in its decarbonisation process.

(14) On 24 June 2021, the German Parliament passed a new Federal Climate Protection Act ('KSG') ([13]). The KSG increases the level of ambition of Germany's greenhouse gas reduction target for 2030 from 55% to 65% compared to 1990 levels. By 2040, greenhouse gases must be reduced by 88% compared to 1990, and greenhouse gas neutrality must be achieved by 2045. The targets for reducing greenhouse gas emissions in the individual sectors (energy, industry, buildings, transport, agriculture and waste) were also tightened.

(15) To support the achievement of the new climate targets, the German government adopted an Emergency Climate Protection Programme 2022 ([14]) on 23 June 2021.

(16) The following measures within the Emergency Climate Protection Programme are particularly relevant for the steel industry:

(a) Investment funding programme for the steel industry, providing support to market players in the steel sector, to incentivise investments into the transition from the blast furnace ('BF') route to the direct reduction route using hydrogen;

(b) Measures aimed at creating lead markets for 'green steel', including (i) the introduction of product quotas for CO_2-efficient products and (ii) funding to cover the additional costs in a transitional period;

([11]) 'Zukunftpaket als Teil des Konjunkturprogrammes 2020', overview available online at: https://www.bundesregierung.de/breg-en/search/konjunkturpaket-1757640.

([12]) Fortschreibung Nationale Wasserstoffstrategie – NWS 2023', available online at: https://www.bmwk.de/Redaktion/DE/Wasserstoff/Downloads/Fortschreibung.html

([13]) 'Bundes-Klimaschutzgesetz – KSG 2021', available online at: https://www.gesetze-im-internet.de/ksg/

([14]) 'Sofortprogramm 2022', available online at: https://www.bundesfinanzministerium.de/Content/DE/Downloads/Klimaschutz/klimaschutz-sofortprogramm-2022.pdf?__blob=publicationFile&v=2.

(c) The development by the German authorities in cooperation with industrial players, scientific institutions and civil society, of a database-supported system for reporting the CO_2 footprint of certain frequently used substances, which will provide information on the carbon footprint of goods and substances to companies and consumers.

(17) The Power4Steel – Phase 1 project is closely aligned with the goals described in recitals (4) to (7), as it aims at contributing to the transformation of the steel industry towards climate neutrality, specifically by leveraging on the move from coal to gas, then on the use of renewable and low-carbon hydrogen. According to the German authorities, the project creates stable and significant demand for renewable hydrogen in the Grande Region Hydrogen ([15]), and therefore contributes to the achievement of both EU and national climate targets and hydrogen strategy.

2.3. National legal basis

(18) The legal basis for the measures is the Federal Budget Code (*Bundeshaushaltsordnung*). Aid will be granted through the national grant approval (*Zuwendungsbescheid*), which the German authorities will adopt following the notification of the Commission's decision approving the measure.

2.4. Administration of the measure

(19) The German Federal Ministry of Economic Affairs and Climate Action is responsible for administering the measure.

2.5. Form of aid, level of support and granting

(20) Germany plans to grant aid for the measure in the form of a direct grant of EUR 2.6 billion. The measure will be financed for 70% through the Federal State's general budget and for 30% through the budget of the German state of Saarland. The aid will be granted between 2023 and 2027 once the costs have been incurred.

2.6. Beneficiaries

(21) The measure is granted for an activity of:
- AG der Dillinger Hüttenwerke (hereafter 'Dillinger'),
- Saarstahl AG (hereafter 'Saarstahl') and
- Roheisengesellschaft Saar mbH (hereafter 'ROGESA').

(22) Saarstahl and Dillinger cooperate under the umbrella of a non-operative holding and management company, SHS Stahl-Holding-Saar GmbH & Co. KGaA (hereafter 'SHS').

([15]) The Grande Region Hydrogen initiative aims at developing and supporting a hydrogen ecosystem in the Greater Region of Saarland (Germany), Lorraine (Grand-Est, France) and the Grand Duchy of Luxembourg.

(23) Saarstahl is controlled by SHS, which is itself fully owned by the Montan-Stiftung-Saar, a foundation ([16]).

(24) Dillinger is controlled by Dillinger Hütte Saarstahl AG (hereafter 'DHS') ([17]). DHS/Dillinger and their legal predecessors have concluded memoranda of association in 1995, 2008, 2020 and 2021 to set up a cooperation with SHS, Saarstahl and ArcelorMittal regarding DHS and Dillinger. SHS and Saarstahl own respectively 26.17% and 33.75% of shares in DHS.

(25) Dillinger and Saarstahl hold each 50 % of the shares of ROGESA.

(26) The foundation of SHS in 2001, which was organised in 2010 as a non-operative management holding company, enabled Dillinger and Saarstahl to work more closely together beyond the previously existing cooperative ventures and to have a stronger presence in their markets. A total of around 14 000 employees work under the umbrella of the SHS companies, mainly at the 4 production sites in Saarland (Dillingen, Völklingen, Neunkirchen and Saarbrücken-Burbach). The SHS companies Dillinger and Saarstahl together generate sales of around EUR 7 billion ([18]).

(27) In 2021, Dillinger and Saarstahl under the umbrella of SHS produced 4.9 million tonnes of crude (carbon) steel. According to the German authorities this represents approximately 15% of Germany's crude steel production.

([16]) Founded in 2001 by Dillinger and Saarstahl, the Montan-Stiftung-Saar (the 'Foundation') aims at preserving and securing the Saarland steel industry, including all its holdings and business areas, with the responsibility for maintaining long-term competitive jobs in Saarland. This includes accompanying the changes in the business world in general and in the companies belonging to the Foundation in particular. In addition to strengthening the steel industry, the Foundation's main objectives are the promotion of science in research and teaching, the promotion of vocational training measures with the aim of preventing unemployment and the promotion of environmental protection projects.

([17]) On the basis of a domination and profit transfer agreement according to § 291 of the German Company Law (Aktiengesetz).

([18]) Figures from the reference year 2022.

(28) Saarstahl is headquartered in Völklingen. It specialises in the production of (carbon steel) wire rod, steel bars, billets, and forged products in premium qualities. Saarstahl manufactures products for the automotive and construction industries, the power engineering industry, the aerospace industry, as well as the general machine manufacturing and other steel processing industries. In 2021, Saarstahl produced 2.43 million tonnes of rolled products, requiring a crude steel quantity of 2.64 million tonnes produced via the blast furnace-converter route (basic oxygen furnace). The German authorities indicated that in 2021, Saarstahl achieved the following supply shares in the EU27 for its main products: 13% for quality wire rods, 5% for quality steel bars and 15% for steel rails ([19]).

(29) Dillinger is based in Dillingen and is active in the production of high-quality heavy steel plate used in construction, mechanical engineering, offshore wind power, line pipe or boiler construction. The crude steel production of Dillinger amounted to 2.28 million tonnes of crude (carbon) steel in 2021, which corresponds to a production of 1.78 million tonnes of finished product (heavy plate). The German authorities indicated that in the supply of heavy plates, Dillinger had a share of 14% in the EU and the UK in 2021, while other European producers shared 65% of the total supply ([20]).

(30) ROGESA operates at the site of Dillingen two blast furnaces with a maximum annual production capacity of 4.6 million tonnes of hot metal. This intermediate product is exclusively distributed to ROGESA's two shareholders Saarstahl and Dillinger. The two blast furnaces produced together 4.26 million tonnes of hot metal in 2021.

(31) The German authorities have confirmed none of the beneficiaries are undertakings in difficulty as defined by the Commission Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty ([21]) and, in any event, no aid will be awarded under the measure to undertakings in difficulty as defined by the Commission Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty.

(32) The German authorities have also confirmed that none of the beneficiaries are subject to an outstanding recovery order following a Commission decision declaring an aid illegal and incompatible with the internal market.

([19]) In 2021, in the EU27, the total volume for the supply of the main products of Saarstahl are given as follows (source: Eurofer):

- for the quality wire rod market, 9.6 million tonnes;

- for the quality bar steel market, 11.8 million tonnes;

- for the rail steel market, 1.5 million tonnes.

([20]) The total volume for the supply of heavy plates in the EU28 was 10.2 million tonnes in 2021 (source: Eurofer).

([21]) Communication from the Commission – Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty, 2014/C 249/01, OJ C 249, 31.7.2014, p. 1.

2.7. Basic elements of the measure

2.7.1. Current situation

(33) The German authorities have explained that the production processes of Dillinger and Saarstahl currently involve the smelting of a mixture of iron ore, coke and limestone into liquid hot metal in a blast furnace ('BF'). The liquid hot metal is then refined into steel in a basic oxygen furnace ('BOF') to produce liquid carbon steel. The latter is further cast and cooled in continuous casting machines to produce semi-finished carbon steel products. This steel production process is referred to as the blast furnace/basic oxygen furnace ('BF-BOF') route.

(34) Two blast furnaces are currently operated by ROGESA at the Dillingen site (called 'BF4' and 'BF5').

(35) Dillinger owns and operates at the Dillingen site two BOFs where hot metal is converted into liquid steel before being further processed through the secondary metallurgy process. Each of Dillinger's BOFs has a rated production capacity of approx. [1-10] million tonnes ([22]). At the Völklingen site, Saarstahl owns and operates 3 BOFs with a capacity of approx. [1-10] million tonnes ([23]) and equipment for the secondary metallurgy process.

(36) In 2021, SHS acquired in Saint-Saulve, France a plant based on an electric arc furnace with a current capacity of [400 000-500 000] tonnes of crude steel ('the Ascoval steel mill').

2.7.2. Description of the project

2.7.2.1. Main changes in the steelmaking processes

(37) The Power4Steel – Phase 1 project aims at the decarbonisation of the steelmaking processes of Dillinger, Saarstahl and ROGESA by implementing a hydrogen-based direct reduction plant ('DR plant') that in combination with two Electric Arc Furnaces ('EAFs') would substitute the current BF-BOF route in Dillingen and Völklingen ([24]).

([22]) The effective production capacity is lower because of limitations in the downstream processes.

([23]) The effective production capacity is lower because of limitations in the downstream processes.

([24]) The German authorities explained that the Power4Steel – Phase 1 project will set the ground for a further transformation phase ('Power4Steel – Phase 2'), which is not part of the measure. In Power4Steel – Phase 2, the remaining blast furnace BF5 as well as the remaining BOFs in both Dillingen and Völklingen will be decommissioned. At the same time, an additional EAF plus a fifth vacuum degasser will be installed in Dillingen, leading to the complete transformation of both facilities to the DRI-EAF production route. The Phase 2 is included figures 1 and 2 just for the sake of completeness.

Dillingen Site: Rogesa and Dillinger

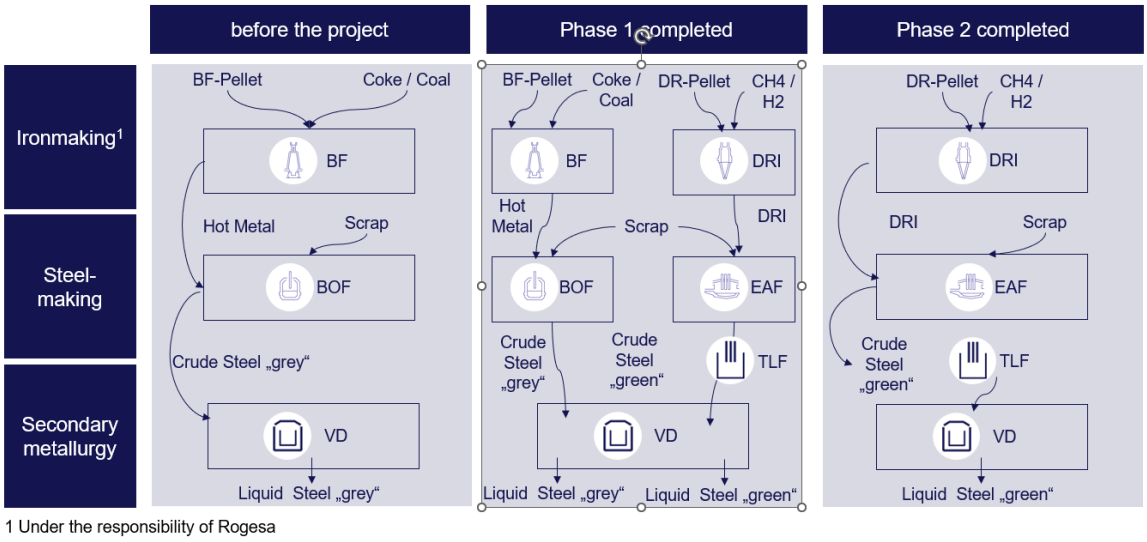


Figure 1: Schematic representation of the installed and decommissioned equipment as well as input and output flows at ROGESA and Dillinger at the Dillingen site in the different phases of the project. ([25])

Völklingen Site: Saarstahl

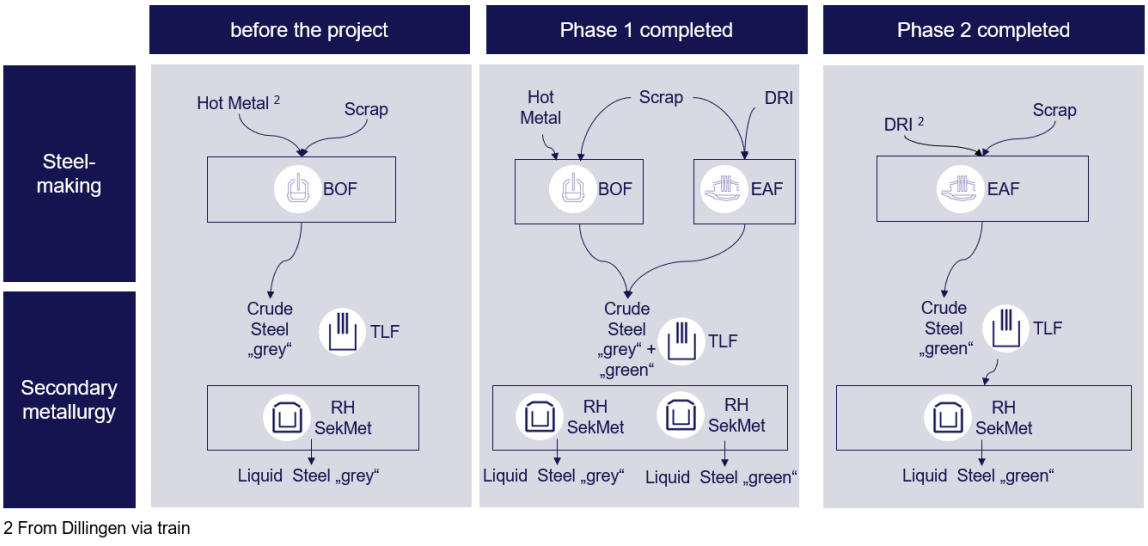


Figure 2: Schematic representation of the installed and decommissioned equipment as well as input and output flows at Saarstahl at the Völklingen site in the different phases of the project. ([26])

(38) In order to replace the BF-BOF route, liquid steel can be produced in two steps. First, iron ore is converted into direct reduced iron ('DRI') in a DR plant. The

([25]) 'LF' refers to ladle furnaces and 'VD' to vacuum degassers.

([26]) 'TLF' refers to twin ladle furnaces and 'RH SecMet' to a degassing process named after Ruhrstahl and Heraeus.

DRI is then charged and melted, possibly along with scrap, in an EAF ('DRI-EAF route'), and it will be further processed in secondary metallurgy (see Figures 1 and 2). The liquid steel produced through the DRI-EAF route is cast and cooled in a continuous casting machine to produce semi-finished carbon steel products, as in the BF-BOF route.

(39) The project intends to replace one of ROGESA's BFs (BF4) by a DR plant with a yearly production capacity of [1-10] million tonnes of DRI. The DRI will then be melted by one new EAF in Dillingen, operated by Dillinger, and one new EAF in Völklingen, operated by Saarstahl, with capacities of [1-10] million tonnes and [1-10] million tonnes respectively. The EAFs will replace part of current BOF capacities, with one BOF being decommissioned at each site. The German authorities confirm that the beneficiaries committed that the overall crude steel production capacity at the Dillinger and Völklingen sites will remain at its current level of 6 million tonnes combined ([27]). In addition, the secondary metallurgy process needs to be adapted because the crude steel produced in the EAF has different characteristics than the crude steel produced in the BOF. This secondary metallurgy process will therefore be extended by two ladle furnaces ('LF') in Dillingen, a twin ladle furnace ('TLF') in Völklingen and one Ruhrstahl Heraeus degasser ('RH SecMet') in Völklingen ([28]).

(40) The German authorities explained that the DR plant and the two EAFs of the Power4Steel – Phase 1 project are expected to be commissioned in the second half of 2026.

(41) The second BF of ROGESA, BF5, will remain in operation. According to the German authorities, the production output of the remaining BF5 cannot, for technical reasons, go below a minimum boundary quantity ([29]). On the contrary, the DRI-EAF route's production can be limited to a certain level. As a result and in order to maintain current production levels, as indicated in Figure 3, it is planned that the DR plant will be producing [1-10] million tonnes of DRI in 2030 and BF5 [1-10] million tonnes of hot metal.

([27]) The 6 million tonnes production capacity has been established based on the maximum observed production in the last 10 production years, which takes into account the volatility of production with respect to the average level of production, which amounts to [1-10] million tonnes of crude steel.

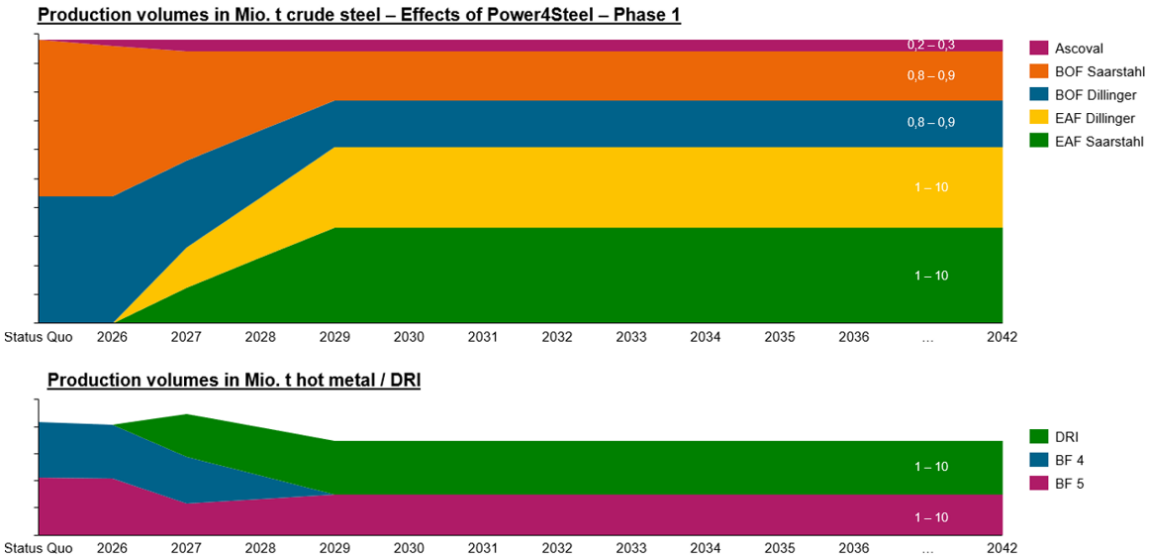
([28]) The crude steel produced in the EAF will contain a higher concentration of impurities (in particular sulfur and nitrogen) and will be tapped at significantly lower temperatures than the crude steel produced in the BOF. To be able to connect the new DRI/EAF production route with the existing downstream processes and avoid having to invest in a new downstream route, ladle furnaces and vacuum degassers need to be commissioned. The ladle furnaces will compensate the lower temperature of the melt from the EAF and heat the melt to the required temperature. After the ladle furnace, the steel is further treated in degassing plants. The degassing process will need to be adapted to realise low sulphur and nitrogen levels in the melt. After the degassing plants, the new steel route will be connected to the existing steel route.

([29]) The blast furnace works according to the counter-current principle. Burden material (sinter, BF pellets, lump ore) and coke are stacked in the shaft from the top and hot blast is blown in from the bottom. Below the lower production bound, the hot blast flow is likely to not reach some regions of the sinter-coke load, which freezes first locally and then in total. This damages the furnace.

(42) Moreover, regarding the crude steel production, the remaining BOFs will produce [1-10] ([30]) million tonnes of crude steel, while the working point of the new EAFs will be set at 3.05 million tonnes of crude steel. Such production level will be achieved with up to a [40-45]% scrap input share in the EAFs (compared to [20-25]% currently in the BOFs), the remainder being DRI ([31]). Altogether, [1-10] million tonnes of crude steel will therefore be produced at Dillingen's and Völklingen's facilities.

(43) In addition, the beneficiaries will also increase the production of the Ascoval steel mill by approximately [200 000-300 000] tonnes of crude steel by 2030 in order to maintain their total production in Dillingen, Völklingen and Ascoval at the average level of production of crude steel from the last ten years, which amounts to [1-10] million tonnes of crude steel. Germany has specified that the extension of Ascoval is not part of Power4Steel – Phase 1 project.

(44) As a result, the implementation of the Power4Steel – Phase 1 project will not result in any increase of production capacity of upstream liquid carbon steel, nor finished steel products. The German authorities confirm that the beneficiaries committed that the overall yearly crude steel production level will remain at its current average level of 4.9 million tonnes ([32]) (Figure 3). Moreover, there will be no change in the finished products' technical characteristics or qualities due to the shift from the classical BF-BOF route to the DRI-EAF route.



([30]) Remaining converters will not be operated at full capacity after commissioning of EAF plants.

([31]) The German authorities explained that to produce the products portfolio of Dillinger and Saarstahl with the DR-EAF route, a share of up to [50-55]% scraps can be achieved without altering the quality of the products. During the ramp-up phase of the project, the share of scraps will be on average [40-45]%.

([32]) The 4.9 million tonnes include the [1-10] million tonnes produced by Dillinger and Saarstahl and the [200 000-300 000] additional tonnes that will be produced in Ascoval by 2030.

Figure 3: Graphical presentation of Power4Steel – Phase 1 project production: hot metal/DRI production in the upstream process (bottom) and crude steel production in the downstream process (top). Blast furnace 4 will be decommissioned during 2028, resulting in a low annual production value. While not being part of the project, the increase in Ascoval's volumes is added in the figure for the sake of completeness as it fills up the gap to the working point of 4.9 million tonnes of crude steel.

(45) According to the information submitted by the German authorities, the project's timeline comprises three years of construction (2024-2026) and 15 years of operation (2027-2042). The DR plant and the EAFs are scheduled to enter into operation for the first time in 2026, and in 2027 and 2028 the facilities will be ramped up, reaching full capacity in 2029.

2.7.2.2. The use of hydrogen and phase out of fossil fuels

(46) The German authorities explained that the DR plant to be installed as part of the Power4Steel – Phase 1 project can be operated with flexible shares of hydrogen and natural gas as a reducing agent ([33]). While operating the DR plant solely with natural gas already results in significant CO_2 emission savings compared to the BF-BOF route, achieving the 2030 climate target and the 2050 climate neutrality target requires to gradually phase out natural gas. The German authorities explained that the emission factor of the BF-BOF route of SHS' facilities is equal to [1000-10 000] kg of CO_2 per tonne of crude steel. The emission factor is reduced to [500-600] kg of CO_2 per tonne of crude steel for the DRI-EAF route using only natural gas in the DR plant and [35-40]% of scraps in the EAF.

(47) According to the beneficiaries' business plan as submitted by the German authorities, hydrogen will be gradually phased in to replace natural gas in the DR plant. Natural gas is used in the DR plant both as a reducing gas for the chemical process and to pre-heat the gas input. As shown below in Table 1, the DR plant will be operated with a hydrogen share of [15-20]% of the process and heating gas by 2030, [50-55]% in 2031 and [80-85]% as of 2036.

(48) The German authorities explained that the beneficiaries considered metallurgical requirements and determined the optimal gas mix for the direct reduction process at a [80-85]% hydrogen and [15-20]% natural gas ratio.

(49) The beneficiaries determined that using [80-85]% of hydrogen for the direct reduction process led to the production of DRI containing approximately 1% of carbon, which is the lowest value to achieve the EAF's metallurgical process ([34]). Using DRI with intrinsic carbon content enables a more efficient process because it ensures a homogeneous distribution of the carbon in the melt. A mode of operation without intrinsic carbon results in higher electricity consumption and CO_2 emissions at the EAF, ladle furnace and vacuum degassing systems.

([33]) This refers to the use of natural gas as a process gas to reduce the charged iron ore to DRI.

([34]) According to the German authorities, the metallurgical process in the EAF is not possible without a certain level of carbon content, for several technical reasons. On the one hand carbon lowers the melting point of the iron and thus ensures a more thermally efficient melting process. On the other hand, carbon is necessary to complete the chemical reaction in the EAF and further purify the melt.

Regarding the electricity consumption, savings of 15 to 25 kWh per tonne of crude steel can be achieved when the DRI is fed with a carbon content of approximately [1-1.5]% compared to no carbon content. In addition, carbon free DRI would require increased deep vacuum times of approximately 3-5 minutes, which would result in an additional consumption of 0.9 to 1.5 tonnes of steam per tonne of crude steel.

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038-2042
Natural gas	[90-95]%	[90-95]%	[85-90]%	[80-85]%	[45-50]%	[45-50]%	[45-50]%	[35-40]%	[25-30]%	[15-20]%	[15-20]%	[15-20]%
Total hydrogen	[5-10]%	[5-10]%	[10-15]%	[15-20]%	[50-55]%	[50-55]%	[45-55]%	[60-65]%	[70-75]%	[80-85]%	[80-85]%	[80-85]%
Renewable hydrogen	[5-10]%	[5-10]%	[10-15]%%	[15-20]%	[30-35]%	[30-35]%	[30-35]%	[40-45]%	[50-55]%	[60-65]%	[60-65]%	[80-85]%
Low-carbon hydrogen	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[15-20]%	[15-20]%	[15-20]%	[15-20]%	[15-20]%	[15-20]%	[15-20]%	[0-5]%

Table 1: Planned shares of the process and heating gas [(35)] in the DR plant for hydrogen and natural gas, per year, during Power4Steel – Phase 1 and breakdown of hydrogen supply into low-carbon and renewable hydrogen as defined in recitals (53) and (54).

(50) Based on a hydrogen consumption of [50-60] kilogrammes per tonne of DRI from 2036 onwards, the DR plant of the Power4Steel – Phase 1 project will generate a hydrogen demand of approximatively [100 000-200 000] tonnes per year.

(51) The German authorities explained that the pace of transition from natural gas to hydrogen is driven by the availability of hydrogen suppliers in the Saarland region for the first phase of the project, i.e. from 2027 to 2030. According to the German authorities, the beneficiaries expect the Power4Steel – Phase 1 project to kickstart the development of a renewable hydrogen value chain in Saarland and neighbouring regions in France. From 2031, Dillingen is expected to be connected to the German hydrogen network, which should result in the access to larger and cheaper volumes of hydrogen. Therefore, the hydrogen share will be relatively low as long as SHS' companies will not have access to the hydrogen backbone and need to acquire hydrogen from dedicated suppliers in the Saarland and neighbouring regions in France.

(52) To this end, the beneficiaries have conducted preliminary discussions with various potential suppliers, which have been asked to participate in a tender, which will be concluded in 2024. The sources identified for renewable hydrogen include […]*. These suppliers should cover the project's hydrogen needs until the connection of Dillingen to the German hydrogen network. Depending on the final price, the share indicated in Table 1 may be further reduced, in case the price for hydrogen will be so high that a monitoring mechanism kicks in. In this case the share may be reduced by [20-30]% maximum and thus can be as low as [10-20]% in 2030 (instead of [15-20]%, see Table 1).

([35]) The German authorities explained that shares are calculated by the energy content, irrespective of the use being substantially of chemical nature in the reduction process, based on the data provided by the plant supplier.

[…]*: confidential information covered by the obligation of professional secrecy

(53) The German authorities explained that during the entire period of operation, the beneficiaries will only use hydrogen that complies with lifecycle greenhouse gas emissions savings of at least 70% relative to a fossil fuel comparator of 94 g CO_2e/MJ ([36]) (also referred to in this decision as 'low-carbon hydrogen'). The grant approval will include a binding condition to that effect, which the German authorities committed to monitor regularly, with the support of an independent expert (section 2.7.2.8).

(54) In addition, the German authorities explained that, as shown in Table 1, there will be an increasing minimum share of renewable hydrogen ([37]). Depending on the price of renewable hydrogen, which may be lower than expected, the companies could in line with the claw-back mechanism (section 2.7.2.7), decide to purchase larger shares of renewable hydrogen than planned, in any given year. In this case, this additional renewable hydrogen would also increase the share of hydrogen altogether and thus lower the share of natural gas. The achievement of this condition will also be monitored regularly by the German authorities, with the support of an independent expert (section 2.7.2.8).

(55) The German authorities further indicated that the project will despite the use of natural gas not lead to a lock-in of natural gas-fired production equipment or to the displacement of investments into cleaner alternatives that are already available on the market for the following reasons:

(a) They explained that the beneficiaries have studied several options as alternatives to the conventional steelmaking, and that the DRI-EAF route is currently the most advanced solution, with existing plants in operation worldwide which technologies could be further adapted to match the ambition of SHS' decarbonisation project. An alternative would have been

([36]) Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives (OJ L 442, 9.12.2021).

([37]) Hydrogen produced from renewable energy in accordance with the methodologies set out for renewable liquid and gaseous transport fuels of non-biological origin in 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; Commission Delegated Regulation (EU) 2023/1185 of 10 February 2023 supplementing Directive (EU) 2018/2001 of the European Parliament and of the Council by establishing a minimum threshold for greenhouse gas emissions savings of recycled carbon fuels and by specifying a methodology for assessing greenhouse gas emissions savings from renewable liquid and gaseous transport fuels of non-biological origin and from recycled carbon fuels (OJ L 157, 20.6.2023, p. 20); and Commission Delegated Regulation (EU) 2023/1184 of 10 February 2023 supplementing Directive (EU) 2018/2001 of the European Parliament and of the Council by establishing a Union methodology setting out detailed rules for the production of renewable liquid and gaseous transport fuels of non-biological origin (OJ L 157, 20.6.2023, p. 11).

the use of a DR plant with an electric smelting furnace to substitute the blast furnace, but this technology is still in large prototype stage and only one demonstration plant exists. Another alternative studied was carbon capture storage and usage, but it would have implied that the existing steel making process would remain in operation. Furthermore, the technology is currently not proven at industrial scale in steel making. This means that the DRI-EAF process using renewable or low-carbon hydrogen is the most promising technology available in the short term that allows to substantially reduce emissions and get to nearly climate-neutral steel production.

(b) The German authorities submitted that in order to complete the phase-out of natural gas and coal the beneficiaries plan to implement further decarbonisation measures after or in parallel of Power4Steel – Phase 1 project, such as the replacement of the remaining natural gas used in the DR plant with biogas from 2036, and of the remaining coal in the EAFs with biochar from 2036.

(c) The technology used in the DR plant could allow the transition to 100% hydrogen as process gas.

2.7.2.3. Use of innovative technology in the project

(56) The German authorities indicated that the technologies that would be used in the Power4Steel – Phase 1 project are innovative:

(a) As regards the DR plant, this is an innovative technology as currently, most of the crude (carbon) steel worldwide is produced using the conventional BF route. While a number of market players have started investments into new steel production routes involving the use of a DR plant, they are at levels of development between planning and construction and the operation of pilot plants, meaning that DR plants are not yet widely operated at full commercial size. According to the German authorities, innovations compared to other available technologies will allow, in particular, to operate the DR plant with up to 100% of hydrogen, differently from standard natural gas plants which can accommodate up to 30% hydrogen replacement of natural gas.

(b) With regard to the EAFs, the German authorities explained that due to the existing characteristics of the secondary metallurgy operations in terms of timing, process control and media supply, an extremely powerful EAF is required with a corresponding high electrical power. To their knowledge, EAF with a tapping weight of 180 to 200 tonnes and a tap-to-tap time of [40-50] minutes are currently not existing and are beyond the current state of art.

(c) The beneficiaries will create a new metallurgical process by using a charging mix of DRI and scrap and adjusting the EAF and secondary metallurgy processes in order to realise ultra-low level of residuals in accordance with the high-quality steel products of Dillinger and Saarstahl.

(d) Several precautions need to be taken for transportation and storage of cold DRI. Chemical reactions can occur with cold DRI when it is in contact with oxygen and moisture, that can lead to self-ignition and production of

hydrogen, which may lead to explosion. Therefore, cold DRI must be transported and stored in cool and dry conditions. The beneficiaries plan to implement a safe transportation system by rail which must also include safe loading and unloading. To date, no commercially available transport system over rail exists. […] has been developing a cold DRI transport system by train together with […] and is currently in a certification process with […]. The beneficiaries are planning to implement the innovative […] system once it has been certified.

(e) A high fraction of DRI will result in a high slag output for the EAF, with a different chemical composition compared to BOF slag. To continue selling slag as construction material, as it is the case for BOF slag, a special conditioning is required during slag tapping, requiring water or sand injection. For this task, a special equipment will be installed and tested during Power4Steel - Phase 1 project, which is currently in development.

(57) Based on the arguments detailed in recital (56), the German authorities argue that the Power4Steel – Phase 1 project is an early adopter of an innovative technology.

2.7.2.4. Greenhouse gas emissions reduction

(58) The German authorities explained that the project is expected to deliver a significant reduction in greenhouse gas emissions.

(59) The German authorities submitted that the project will avoid direct emissions corresponding to [50-60] million tonnes of CO_2 over the expected duration of the Power4Steel – Phase 1 project as compared to the counterfactual scenario (recital (73)), while additional indirect emission reduce the overall emission to 53.42 million tonnes of CO_2. This scenario considers the situation where the beneficiaries strictly comply with the hydrogen phasing-in described in Table 1.

	Power4Steel – Phase 1 (production of liquid steel using DRI and BF 5)	**Counterfactual scenario (production of liquid steel using current conventional process in BF 4 and 5)**
Direct emissions [t CO_{2e}] ([38])	[60-70] million ([39])	[100-200] million
Direct emissions avoided via Power4Steel – Phase 1 [t CO_{2e}]	[50-60] million	
Indirect emissions [t CO_{2e}] ([40])	[1-10] million	

([38]) Includes direct emissions generated directly by the plant's activities ('scope 1 emissions')

([39]) Approximately 70% of these CO_2 emissions will come from the operation of the remaining blast furnace BF5.

([40]) Includes indirect emissions stemming from the generation of purchased electricity consumed by the company assuming the evolution of the German grid emission factor as described in recital (63) and from hydrogen production ('scope 2 emissions').

Emissions avoided via Power4Steel – Phase 1, including direct and indirect emissions [t CO_{2e}]	53.42 million

Table 2: CO_2 emissions avoided via the Power4Steel – Phase 1 project between 2027 and 2042.

(60) The German authorities also submitted evidence showing that indirect emissions linked to the project do not outweigh the direct emissions reduced through the Power4Steel – Phase 1 project, as shown in Table 2.

(61) As explained in recital (53), Germany committed to ensure that only hydrogen that achieves life cycle greenhouse gas emissions savings of at least 70% relative to a fossil fuel comparator of 94 g CO_2eq/MJ will be used. As summarised in Table 1, during the lifetime of the project an increasing share of renewable hydrogen will be used to operate the DR plant. As to the remaining share of low-carbon hydrogen, it should represent maximum [0.6-0.7] million tonnes of CO_2eq indirect emissions, assuming a greenhouse gas emission footprint of low-carbon hydrogen of 30% of the fossil fuel comparator of 94 g CO2eq/MJ.

(62) Should the renewable hydrogen ramp-up be accelerated thanks to the flexibility allowed by the claw-back mechanism (section 2.7.2.7), renewable hydrogen will substitute natural gas or low-carbon hydrogen for the DR plant operation. In such case, direct or indirect emissions, and hence, the overall carbon footprint of crude steel production will be even lower.

(63) As regards the indirect emissions stemming from the electricity used for the production process at the Dillingen and Völklingen sites, the German authorities provided a calculation based on the evolution of the German grid emission factor (from 145 g CO_2eq/kWh in 2027 to 10 g CO_2eq/kWh in 2042). Those indirect emissions were calculated by the German authorities over the duration of the Power4Steel – Phase 1 project and amount to [1-10] million tonnes of CO_2. In addition, the German authorities also provided a calculation for a more conservative scenario in which the German electricity CO_2 intensity would remain constant at a level of approximately 357.48 g CO_2eq/kWh ([41]). Those indirect emissions over the duration of the Power4Steel – Phase 1 project would then amount to [10-20] million tonnes of CO_2.

(64) When adding up indirect emissions stemming from electricity and hydrogen, based on the evolution of the German grid emission factor as referred to in recitals (61) and (63), the total indirect emissions reach [1-10] million tonnes of CO_2eq. This impact is significantly below the direct greenhouse gas emissions avoided thanks to the project (recital (59)). When adding up indirect emissions stemming from electricity and hydrogen, based on conservative calculations as

([41]) Corresponding to the level set in the Annex to the Commission Delegated Regulation (EU) 2023/1185 of 10 February 2023 supplementing Directive (EU) 2018/2001 of the European Parliament and of the Council by establishing a minimum threshold for greenhouse gas emissions savings of recycled carbon fuels and by specifying a methodology for assessing greenhouse gas emissions savings from renewable liquid and gaseous transport fuels of non-biological origin and from recycled carbon fuels (OJ L 157, 20.06.2023).

referred to in recital (63), the total indirect emissions reach [10-20] million tonnes of CO_2eq. This impact would still remain below the direct greenhouse gas emissions avoided thanks to the project (recital (59)).

(65) The German authorities provided an estimate of the subsidy per tonne of CO_2 equivalent emissions avoided. Considering an aid amount of EUR 2 600 million in nominal value, and a total amount of around 53.42 million tonnes of CO_2 savings over the project lifetime, the estimation of subsidy per tonne of CO_2 emissions avoided would be EUR 48.67 per tonne of CO_2. In line with the calculation of the total emissions, the calculation of greenhouse gas emission savings is based on the following assumptions:

(a) Direct greenhouse gas emissions avoided are based on the calculation in Table 2, taking into account the beneficiaries' natural gas phase out plan, as described in Table 1;

(b) Greenhouse gas emissions linked to electricity are based on the assumption that the electricity mix, and hence the German grid emission factor, would follow the decreasing trend described in recital (63);

(c) Greenhouse gas emissions linked to hydrogen are based on the assumptions described in Table 1 regarding the low-carbon and hydrogen consumption trajectories (recital (61)).

2.7.2.5. Compliance with 'do no significant harm'

(66) Furthermore, the German authorities provided evidence with a view to demonstrating that the Power4Steel – Phase 1 project complies with the principle of 'do no significant harm' as referred to in Article 17 of Regulation (EU) 2020/852 ([42]), by reference in particular to the screening criteria developed in Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives ([43]). In particular, the German authorities submitted that:

(a) In relation to climate change mitigation, the Power4Steel – Phase 1 project aims at implementing a production process avoiding direct CO_2 emissions and thus achieving CO_2 emission levels below the thresholds set out in the Commission Delegated Regulation (EU) 2021/2139 on climate change

([42]) Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, OJ L 198, 22.6.2020, p. 13.

([43]) Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives, OJ L 442, 9.12.2021, p. 1.

mitigation for steel products as well as substantially below Emission Trading System ([44]) ('ETS') benchmarks;

(b) In relation to climate change adaptation, it is not expected that the Power4Steel – Phase 1 project would lead to an increased adverse impact;

(c) In relation to the sustainable use and protection of water and marine resources, the beneficiaries will conduct an environmental impact assessment covering, *inter alia*, water;

(d) As regards the circular economy objective, the Power4Steel – Phase 1 project is not expected to significantly increase the generation, incineration, or disposal of waste or lead to significant inefficiencies in the use of natural resources. Specific production waste and by-products will be recycled and help to conserve natural resources. For instance, the dusts produced in the EAF will be recycled in an external rolling tube process. In this process, the zinc is recovered and can be used as secondary raw material. Slags from the EAFs can be used for road construction, and experiments are carried out to produce a special EAF slag as a replacement for granulated blast furnace slag, which can be utilised in the cement industry. The project also supports recycling strategies of other industries through the 100% recycling of steel. The needed volumes of scrap will significantly increase in the future, and this will sustainably intensify the measures to recycle steel;

(e) In relation to air, water and land pollution, the German authorities confirmed that the project does not involve any of the substances listed in Appendix C to the Commission Delegated Regulation (EU) 2021/2139 on climate change mitigation. The beneficiaries will in particular build a state-of-the-art dedusting system to ensure that the emissions generated in the EAFs and DR plant are safely collected and fed into purification;

(f) In relation to the impact on the protection and restoration of biodiversity and ecosystems, it is unlikely that the Power4Steel – Phase 1 project will have a significant negative impact on the protection and restoration of biodiversity and ecosystems, given that the project (i) will be located on an existing brownfield site with ongoing industrial activity, hence not requiring any additional land-use; (ii) will not be located in a protected area; and (iii) will be subject to an environmental impact assessment.

2.7.2.6. Financial elements of the project

2.7.2.6.1. Costs of the project

(67) Based on the quantification submitted by the German authorities, the total costs of the factual scenario, both investment and operating through the entire projections, amount to EUR [45.5-46] billion in nominal terms.

([44]) https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/what-eu-ets_en

(68) The German authorities explained that aid under the measure will cover part of the investment costs linked to the Power4Steel – Phase 1 project. Such costs amount to EUR [3500-4000] million ([45]) and comprise the construction costs of the DR plant and of the two EAFs, including the related auxiliary facilities ([46]). The investment costs were estimated based on consultations and negotiations with potential suppliers of the equipment and the beneficiaries' own data from similar projects.

(69) Based on the funding gap analysis submitted by the German authorities, the costs linked to the operation of the Power4Steel – Phase 1 project have been projected to be EUR [42000-42500] million (encompassing costs of materials and supplies, personnel and administrative costs including overheads, and other costs). This is based on the following considerations:

(a) The major component is the cost of materials and supplies related to the project, amounting to EUR [35500-36000] million during the operation of the project. Within this category, costs of energy and costs of input materials are included (such as costs of electricity, costs of scrap, costs of hydrogen, costs of natural gas). Cost of CO_2 certificates are considered ([47]) in this cost category as well and represent EUR [2000-2500] million. The German authorities provided an annual breakdown of costs for all projected cost inputs.

(b) Regarding the costs of hydrogen, the German authorities explained that to ensure the competitiveness of the hydrogen prices before the connection of the facilities to the German hydrogen network, the companies will select their hydrogen suppliers through a tendering process that will comply with the German law on grants for the procurement of goods and services. These costs, included in the costs of materials and supplies, are based on a hydrogen price projection for the period 2026-2042. The other important category of operational costs are personnel and administrative costs which amount to EUR [6000-6500] million over the duration of the project.

([45]) Total gross depreciation of EUR [3500-4000] million (value considered for calculating the EUR [45.5-46] billion total costs).

([46]) The auxiliary facilities of the DR plant comprise in particular a water treatment system, a power supply facility, blending beds DR-pellets, intermediate storage and a bunker system with transport system for cold DRI. The auxiliary facilities of the EAFs comprise in particular ladle furnaces, dedusting plants, water treatment systems, heat recovery systems, power supply facilities, halls for scraps, DRI storage halls, slag management facilities, electrical infrastructures, secondary metallurgy equipment.

([47]) These costs have been estimated by the beneficiary based on internal projections, verified data and external studies.

Remaining costs which amongst other include permits and feasibility studies amount to EUR [80-90] million.

2.7.2.6.2. Revenues of the project

(70) Based on the information provided by the German authorities, the total revenues generated by the project would amount to EUR [44500-45000] million throughout the project's operation (i.e. from 2026 to 2042). The revenues consist of revenues from the sale of steel; revenue from charging the green premium for a share of the sales of steel; as well as the revenues from the sale of DRI and the terminal value.

(71) The business case assumes that in addition to revenues from the sale of steel (representing [90-95]% of total revenues), the beneficiaries will be able to obtain a 'green premium' for a share of the steel produced through the DRI-EAF route. The steel producers' ability to charge a 'green premium' to their customers will likely vary depending on the steel product. The German authorities explained that market studies show demand for green steel products in the offshore wind market and the automotive sector, which represents a significant share of respectively Dillinger's and Saarstahl's sales. The business case assumes different levels of 'green premium' depending on the markets served ([48]). These additional revenues are expected to amount to EUR [1500-2000] million throughout the project's operation.

(72) Additionally, the German authorities explained that the cash flows of the project also include revenues from the sale of DRI of EUR [300-400] million, as well as a terminal value of EUR [1000-1500] million determined by using the so-called 'Gordon growth formula' ([49]) and the residual value of equipment and buildings.

Timeline of the project	**2023-2042**
Maximum annual sales volume in 2023-2042 (final products sold by Dillinger and Saarstahl)	**[1-10] million tonnes**
Total CAPEX (2023-2027)	**EUR [3500-4000] million**
DRI (Rogesa)	EUR [1000-1500] million
EAF (Dillinger)	EUR [1000-1500] million

([48]) The companies explained that the willingness to pay a price premium for the steel produced via the DRI-EAF route will be different depending on the markets served. Dillinger foresees as realistic to charge a price premium for part of their sales volume in the offshore wind power segment, the construction segment and the oil and gas sectors, as their customers in these markets already expressed clear commitment to use green steel or anticipate regulatory constraints including mandatory use of green steel. On the contrary, Dillinger only sees niche volumes in steel produced via the DRI-EAF route for the machinery and construction equipment segment. Saarstahl assumes that provision of steel produced via the DRI-EAF route with a price premium is realistic in all segments that serve the automotive industry, as it is carbon sensitive. The segments covering mainly commodity products with lower quality requirements and where steel is commonly produced via the EAF route from scraps are not expected to have a realistic potential for a price premium.

([49]) The Gordon growth formula enables to compute the terminal value of a project based on the assumption that the cash flows will grow at a constant rate. The terminal value has been calculated with the formula $TV = CF\frac{1+g}{WACC-g}$, where *CF* is the cash flow assumed in the last year of the project, g the assumed growth rate and *WACC* the weighted average cost of capital of the project.

Timeline of the project	**2023-2042**
EAF (Saarstahl)	EUR [1000-1500] million
REVENUES	
Total revenues ([50]) (2026-2042) out of which:	**EUR [44500-45000] million**
Revenue from the steel sales	EUR [41000-41500] million (92%)
Revenues corresponding to the green premium	EUR [1500-2000] million
Revenue from DRI sales	EUR [300-400] million
Project terminal value	EUR [1000-1500] million
COSTS	
Total costs of sales ([51]) (2023-2042), including gross depreciation out of which:	**EUR [45500-46000] million**
OPEX ([52]) out of which:	EUR [42000-42500] million
Costs of materials and supplies	EUR [35500-36000] million (85%)
Personnel and administrative costs, including overheads	EUR [6000-6500] million
Remaining costs	EUR [80-90] million
Sum of annual EBIT (2023-2042)	**EUR – [1000-1500] million**
Sum of nominal cash-flows (2023-2042)	**EUR – [1000-1500] million**
WACC used as the discount factor	**[5-10]%**
NPV of the project (funding gap)	**EUR − [2000-2500] million**
Nominal aid	**EUR 2 600 million**
Discounted nominal aid (net of taxes)	**EUR [2000-2500] million**

Table 3: Financial elements of the project

2.7.2.6.3. Counterfactual

(73) The German authorities have explained that, in the absence of the aid, the beneficiaries would neither undertake the same investment nor any equivalent alternative decarbonisation investment.

([50]) Revenues include income from the sale of DRI and the sale of steel (including steel sold with a green premium), as well as the project related terminal value.

([51]) Total costs of sales include permit and/or feasibility studies related costs; costs of intangible assets; costs of materials and supplies; personnel and administrative costs; depreciation costs of instruments/equipment and buildings; as well as other costs.

([52]) OPEX (operating expenditure) is expressed as total costs of sales net of gross depreciation of equipment and buildings.

(74) The information submitted to the Commission indicates that in the counterfactual scenario, the beneficiaries would not invest in the decarbonisation of the production processes and would continue 'business as usual'. The counterfactual scenario foresees the continuation of the business without significant changes – resulting into constant annual CO_2 emissions in the counterfactual scenario. The beneficiaries would continue with the production of hot metal in the BF 4 in Dillingen, which is replaced by a DRI in the Power4Steel – Phase 1 project. The beneficiaries would invest in the relining ([53]) of the existing BF and of the converters, which would entail limited costs compared to the investments in the Power4Steel – Phase 1 project ([54]). The German authorities submitted that the NPV of the counterfactual scenario is positive and amounts to EUR [300-400] million.

(75) The counterfactual scenario would result in much higher CO_2 emissions compared to the factual scenario (see Table 2).

(76) The German authorities explained that the beneficiaries would not have sufficient incentives to invest in technologies to further reduce or avoid greenhouse gas emissions stemming from its operations because of the following reasons:

(a) First, current measures and policies such as the EU ETS, do not provide sufficient financial incentives for investments to reduce the greenhouse gas emissions linked to the steel production. The German authorities explained that the existing plants are currently eligible for free CO_2 certificates under the EU ETS, which means that the emissions of the existing route of steel production do not currently constitute in full a cost for the beneficiaries.

(b) Second, the German authorities submit that currently there is no functioning market for 'green steel', which means that market signals cannot provide the necessary incentives to invest in the greening of the steel value chain. According to the German authorities, the willingness to pay for the 'green' quality of steel is expected to grow in the coming years, however its development is surrounded by uncertainty, also considering the price competition from competitors from third-countries, and the level of a green premium that can be expected would in any event not be sufficient to cover the costs of the Power4Steel – Phase 1 project as shown by the negative NPV of the factual scenario.

(c) Third, there are no EU policies or Union standards in place that would require undertakings in the steel manufacturing sector to significantly reduce the greenhouse gas emissions linked to their production processes. In this regard, the German authorities explained that the implementing

([53]) According to the German authorities, the term 'relining' describes the replacement of the refractory brickwork as well as the replacement of the necessary drive technology, automation and sensor technology on a BF.

([54]) In particular, the German authorities explained that the investments necessary in the case of the continuation of steel production process as it currently is amount to EUR [600-700] million. This amount does not account for investments in replacement or renovation of equipment whose replacement is not required in the factual scenario. Indeed, these costs would occur in a comparable height in case of the implementation of the factual scenario.

decision 2012/135/EU ([55]) defines the best available techniques ('BAT') for iron and steel production and sets emission limits for air pollutants. The German authorities explained that compliance with those BAT is verified by the competent authority under the national law, also in relation to the beneficiaries' plants. The German authorities confirmed that the BF/BOF route used currently to produce steel in Dillingen and Völklingen complies with the applicable requirements.

2.7.2.6.4. NPV of the project

(77) The German authorities submit that the net extra costs of the project may be approximated by the negative NPV of the project in the factual scenario without aid over the lifetime of the project. Hence, the notified funding gap is i.e. EUR – [2000-2500] million (i.e., the negative NPV of the factual scenario). The NPV is the sum of the discounted future positive and negative cash flows generated by the investment over its lifetime (2023-2042). The cash flows are discounted at ROGESA's Weighted Average Cost of Capital ('WACC').

(78) As regards the WACC, the German authorities submitted detailed calculations with explanations for the financial parameters used. They explained that it was relevant to use ROGESA's WACC for the Power4Steel – Phase 1 project as ROGESA best represents the risk profile of Saarstahl and Dillinger (as both companies each own 50% of ROGESA). ROGESA's WACC was estimated at [5-10]%. The Commission found it coherent with available market intelligence.

(79) The NPV of the project (or factual scenario), which the German authorities submitted to the Commission, was calculated on the basis of a quantification of all main costs and revenues of the project, discounted over the duration of the project at the WACC of the project. These are presented in Sections 2.7.2.6.1 and 2.7.2.6.2. The counterfactual scenario, as described by the German authorities, is presented in Section 2.7.2.6.3.

2.7.2.7. Claw-back mechanism

(80) To reduce the risk of overcompensation in case of unexpected positive developments going beyond the current forecasts, the German authorities committed to put in place a claw-back mechanism covering the entire duration of the project.

(81) First, the claw-back mechanism will entail a comparison of the project's actual costs related to hydrogen (low carbon and renewable) and natural gas with the corresponding costs as projected in the funding gap calculation submitted by the German authorities. 'Additional costs' will be computed as the difference between the actual and the projected costs of hydrogen (low-carbon and renewable) and natural gas. The total cost savings generated during a given period can then be calculated as the opposite of the sum of the yearly additional costs incurred during the period, interest-adjusted (using the notified WACC as an interest-adjustment factor). The basis for such verification will be *ex post* figures,

([55]) 2012/135/EU: Commission Implementing Decision of 28 February 2012 establishing the best available techniques (BAT) conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for iron and steel production (OJ L 70, 8.3.2012, p. 63).

which will be subject to annual approval by an independent auditor. For this purpose, the beneficiaries will be required to submit separate analytical accounting.

(82) If the cost savings calculated as explained in recital (81) are positive, the beneficiaries will pay back [90-95]% of the cost savings amount to the German authorities. This mechanism shall ensure that the beneficiaries are incentivised to use any possible cost savings linked to prices of hydrogen or natural gas lower than the projected costs in order to phase out of natural gas faster, or to purchase a higher share of renewable hydrogen.

(83) The claw-back mechanism will also entail a comparison of the project's negative and positive cash flows (including the actual State aid disbursements and additional benefits resulting from the project ([56])). The basis for such verification will be *ex post* figures, which will be subject to annual approval by an independent auditor. For this purpose, the beneficiaries will be required to submit separate analytical accounting.

(84) If the verification explained in recital (83) leads to a positive value ('surplus') including the actual State aid disbursements, the beneficiaries will pay back [65-70]% of the surplus to the German authorities. The amount repaid under the claw-back mechanism cannot exceed the actual amounts of State aid paid by the German authorities to the beneficiaries, with interest at an annual rate corresponding to the project's WACC of [5-10]%, taking into account the potential penalties paid by the beneficiaries in application of the monitoring mechanism as described in Section 2.7.2.8 and the potential amount repaid in accordance with the procedure described in recitals (81) and (82) ([57]). To ensure, however, that the beneficiaries still have an incentive to deliver the project in an efficient manner, a share of [30-35]% of any potential surplus will remain with the beneficiaries.

(85) The German authorities will regularly report to the Commission on the implementation of the claw-back mechanism.

2.7.2.8. Member State's monitoring measures

(86) Several monitoring measures will be put into place by Germany in order to ensure that the project will be realised as planned.

(87) First, the German authorities explained that under national legislation for projects receiving State aid, clearly defined and controllable targets need to be designed, which allow the monitoring of the aided projects and the evaluation of their results. To this end, the beneficiaries must submit to the German authorities the technical and financial reports and milestone plans. The approval of those documents by the aid granting authority is a necessary step for the payment of the aid to the beneficiaries.

([56]) For the purpose of the claw-back mechanism, 'additional benefits' means: additional public financial contributions – including any other State aid measure or public funding; additional revenues directly resulting from the Power4Steel – Phase 1 project.

([57]) When positive, the operating cost savings related to natural gas and hydrogen will be deducted from the surplus.

(88) The German authorities also explained that, under the national grant approval, the aid will be subject to certain conditions aiming to ensure that the beneficiaries implement the project according to its description and planning, as submitted to the German authorities, and that they reach their envisaged objectives, notably as regards CO_2 emission savings. To verify compliance with those conditions and objectives, the German authorities will put in place a monitoring mechanism, regularly verifying throughout the project's operation (in the period 2027-2042) compliance with the following commitments by the beneficiaries:

(a) To phase out natural gas in the DR plant and phase in hydrogen for the same usages, based on the trajectory set out in Table 1;

(b) To only use hydrogen that achieves at least 70% lifecycle greenhouse gas emission savings relative to a fossil fuel comparator of 94g CO_2eq/MJ ([58]);

(c) To use an increasing share of renewable hydrogen, as set out in Table 1; and

(d) Not to exceed 6 million tonnes per year of crude steel produced ([59]), so as to ensure that the aid has not led to an increase in production volumes by the beneficiaries. This cap was determined as the maximum production achieved by the beneficiaries over the last ten years.

(89) The German authorities explained that they will monitor each year the beneficiaries' compliance with the trajectory planned as regards the shares of natural gas, low-carbon hydrogen and renewable hydrogen in the DR plant. In case of deviation from the objectives, the Germany authorities will impose a penalty corresponding to a recovery of up to [70-75]% of the aid granted, in proportion to the magnitude of the deviation from the targeted shares of hydrogen (vis-à-vis hydrogen) and renewable hydrogen (vis-à-vis low-carbon hydrogen). The German authorities may waive the imposition of penalties if the failure to comply with the above-mentioned conditions is caused by or results from reasons of force majeure ([60]).

(90) The German authorities explained that for the period from 2027 to 2030, the beneficiaries will be entitled to submit a penalty waiver request, if the price of renewable hydrogen purchased exceeds by more than [20-25] % the price

([58]) Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives (OJ L 442, 9.12.2021).

([59]) The scope of the verification includes the total production of the beneficiaries at Dillingen, Völklingen and Ascoval sites with their production from the funded DR plant / EAFs and all other currently existing crude steel production units at the sites (blast furnaces and EAF Ascoval).

([60]) This refers to disruptive acts, failures or acts of third parties or market situations beyond the control of and mitigation measures by the beneficiaries, in particular delays in the formal validity of the public law approvals required for the project, the lack of sufficient renewable hydrogen at the site not caused by the beneficiaries, persistent technical problems to phase in hydrogen which cannot be solved by reasonable means, natural catastrophes, war and war like situations, pandemics, long lasting strikes of third party companies or disruption of supply chains resulting from the above-mentioned events, with substantial impact on the implementation of the project.

assumed in the cost quantification of the aid application. In such a case, beneficiaries will be allowed to decrease the share of hydrogen in the relevant year by at most [20-25] % compared to the shares listed in Table 1 ([61]). Such decrease would however have to be compensated in the following years so that the total share of hydrogen used from 2027 to 2035 corresponds to at least the average of the yearly shares of hydrogen over the 2027-2035 period as planned in Table 1 (i.e. [35-40]% ([62])). Compliance with this condition will be verified in 2036. If the minimum total hydrogen share over the 2027-2035 period is not met, the German authorities will reclaim from the beneficiaries the payment of the penalty that was waived, as the requirements for such waiver would no longer be met.

(91) The German authorities will entrust the monitoring of the conditions referred to in recital (88) to an independent third party with recognised competence and expertise and proven international experience, ensuring the absence of any conflict of interest. The independent expert will be selected by the German authorities on the basis of an open, transparent, and non-discriminatory tender. The independent expert will submit annual reports to the German authorities and to the Commission on the implementation of the monitoring mechanism.

2.7.2.9. Knowledge dissemination by the beneficiary

(92) The German authorities explained that the beneficiaries will disseminate the knowledge obtained as a result of the Power4Steel – Phase 1 project, which will facilitate the roll-out of the technology by other market players.

(93) Dissemination will be achieved through knowledge sharing in technical conferences in the iron and steelmaking fields, such as in the European Steel Days, the Green Steel Workshops, the European Steel Technology & Application Days or the European Steel Forum, and in relevant industrial journals (e.g., Iron & Steel Technology, Steel Times International).

2.7.3. Selection process

(94) The German authorities selected project Power4Steel – Phase 1 in the context of an open call to form part of the Important Project of Common European Interest (IPCEI) on hydrogen technologies and systems ([63]).

(95) The call for expression of interest was open between 11 January 2021 and 19 February 2021. The German authorities confirmed that the call was open to all

([61]) This implies a minimum hydrogen share of [10-15] % in 2030.

([62]) If in one or more years between 2027 to 2035, the hydrogen share, as planned in Table 1, cannot be reached due to a force majeure, the respective shares must be excluded from the average share calculation. If this situation is due to a delay in the connection to the hydrogen backbone in the years after 2030, a hydrogen share of [15-20] % as minimum target level in the base scenario for 2030 has to be included for these years, though.

([63]) Bekanntmachung des Interessenbekundungsverfahrens zur geplanten Förderung im Bereich Wasserstofftechnologien und –Systeme Vom 11 Januar 2021, available online at: https://www.bmwi.de/Redaktion/DE/Downloads/I/ipcei-bekanntmachung-interessenbekundungsverfahren.pdf?__blob=publicationFile&v=16

interested undertakings, and publicly announced via the BMWK's ([64]) homepage. More than 200 projects applied and 62 projects were selected.

(96) The beneficiaries submitted an expression of interest on 19 February 2021 and an aid application on 9 March 2023. The German authorities confirmed that the beneficiaries did not start works ([65]) before the application for aid.

2.8. Cumulation

(97) The German authorities submit that they will not grant further aid supporting the same eligible costs incurred by the Power4Steel – Phase 1 project.

(98) Furthermore, the German authorities explained that aid under the measure may not be cumulated with Union funding in relation to the same eligible costs.

2.9. Transparency

(99) The German authorities have committed to comply with the transparency requirements laid down in points 58 to 61 of the CEEAG. The German authorities will publish the ad hoc aid under the measure, which exceeds EUR 100 000, on the Transparency Aid Module (TAM), which can be accessed via the website https://webgate.ec.europa.eu/competition/transparency/public?lang=en.

3. ASSESSMENT

3.1. Lawfulness of the measure

(100) The German authorities explained that the aid granting decision has not yet been adopted and that they intend to adopt it following the notification of the Commission's decision approving the measure (see recital (18)). Thus, Germany has respected the obligations set out in Article 108(3) TFEU.

3.2. Presence of State aid

(101) For a measure to be categorised as aid within the meaning of Article 107(1) TFEU, all the conditions set out in that provision must be fulfilled. First, the measure must be imputable to the State and financed through State resources. Second, it must confer an advantage on its recipients. Third, that advantage must be selective in nature. Fourth, the measure must distort or threaten to distort competition and affect trade between Member States.

(102) The measure is imputable to the State, since it would be granted by the German Federal Ministry of Economic Affairs and Climate Action (recital (19)), and it would be based on the Federal Budget Code (B*undeshaushaltsordnung*) and a

([64]) *Bundesministerium für Wirtschaft und Klimaschutz* – the Federal Ministry for Economic Affairs and Climate Action, as it is currently named. At the time of the call for expression of interest, its name was *Bundesministerium für Wirtschaft und Energie – BMWi.*

([65]) 'Start of works' should be understood as the first firm commitment (for example, to order equipment or start construction) that makes an investment irreversible. The buying of land and preparatory works such as obtaining permits and conducting preliminary feasibility studies are not considered as start of works.

national grant approval (*Zuwendungsbescheid)* (recital (18)). The measure is financed through State resources since it is financed in part through the Federal State's general budget and in part through the budget of state of Saarland (recital (20)).

(103) The measure confers an advantage on the beneficiaries in the form of a non-repayable direct grant (recital (20)), which would not be available on the market. The measure thus confers an advantage on the beneficiaries that they would not have had under normal market conditions.

(104) The advantage granted by the measure is selective, since it is only awarded to Dillinger, Saarstahl and ROGESA (recital (21)).

(105) The measure is liable to distort competition, since it strengthens the competitive position of the beneficiaries in a sector in which intra-Union trade exist, thus also affecting trade between Member States.

(106) Therefore, that measure constitutes aid within the meaning of Article 107(1) TFEU.

3.3. Compatibility of the aid

(107) Since the measure involves aid within the meaning of Article 107(1) TFEU, it is necessary to consider whether that measure is compatible with the internal market.

(108) Pursuant to Article 107(3)(c) TFEU, the Commission may declare compatible with the internal market '*aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest*'.

(109) The measure aims at reducing greenhouse gas emissions from steel manufacturing at Dillingen and Völklingen sites in the Saarland, through the replacement of a BF by a hydrogen based DR plant and the replacement of two BOFs by two EAFs (recital (37)).

(110) The Guidelines on State aid for climate, environmental protection and energy 2022 (CEEAG) ([66]), and notably Section 4.1 thereof, set out the criteria under which Member States may provide State aid for the reduction and removal of greenhouse gas emissions, including through support for renewable energy and energy efficiency.

(111) The Commission has therefore assessed the measure pursuant to the compatibility provisions in Section 3 CEEAG, where applicable, as well as the specific compatibility criteria for aid for the reduction and removal of greenhouse gas emissions including through support for renewable energy and energy efficiency set out in Section 4.1 CEEAG.

([66]) Communication from the Commission – Guidelines on State aid for climate, environmental protection and energy 2020, OJ C 80, 18.2.2022, p.1.

(112) With regard to the scope of application of the CEEAG, the Commission notes that, in line with point 14 CEEAG, the beneficiaries do not qualify as undertakings in difficulty as defined by the Commission Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty (recital (31)). The Commission also notes that the beneficiaries are not subject to any outstanding recovery order following a previous Commission decision declaring an aid illegal and incompatible with the internal market (recital (32)).

3.3.1. Positive condition: the aid must facilitate the development of an economic activity

3.3.1.1. Contribution to the development of an economic activity

(113) For State aid to be compatible under Article 107(3)(c) TFEU, it must contribute to the development of an economic activity (or of an economic area) ([67]). Accordingly, point 23 CEEAG requires that, when notifying aid, Member States must identify the economic activities that will be facilitated as a result of the aid and how the development of those activities is supported. In addition, point 24 CEEAG provides that aid to prevent or reduce the negative effects of economic activities on climate or the environment can facilitate the development of economic activities by increasing the sustainability of the economic activity concerned. Moreover, point 25 CEEAG requires Member States to describe if and how the aid will contribute to the achievement of objectives of Union climate policy, environmental policy and energy policy and more specifically, the expected benefits of the aid in terms of its material contribution to environmental protection, including climate change mitigation, or the efficient functioning of the internal energy market.

(114) The measure aims at promoting an economic activity in a manner that reduces greenhouse gas emissions and increases the level of environmental protection, as described in Sections 2.2 and 2.7.2 of the present decision. The measure will contribute to the EU climate neutrality goal (recital (4)) as it will support the production of steel from iron ore reduced by hydrogen instead of fossil fuels (recital (37)), therefore contributing to the development of a more environmentally friendly way of steel production. By producing steel via the DRI-EAF route for downstream sectors (e.g., offshore wind, automotive) (recitals (28), (29) and (71)), the measure also contributes to the development of downstream markets.

(115) The Commission notes that the measure's objective is aligned and contributes to the objectives of the European Green Deal, the EU Hydrogen Strategy and the REPowerEU Communication, as referred to in recitals (4) to (7).

(116) The measure therefore facilitates the development of certain economic activities, as required by Article 107(3)(c) TFEU and CEEAG point 23.

([67]) Judgment of 22 September 2020, *Austria v Commission*, C-594/18 P, EU:C:2020:742, paragraphs 20 and 24.

3.3.1.2. Incentive effect

(117) State aid can only be considered to facilitate an economic activity if it has an incentive effect. An incentive effect occurs for instance when the aid induces the beneficiary to change its behaviour towards the development of an additional or more environmentally-friendly economic activity, and if this change in behaviour would not otherwise occur without the aid.

(118) In order to demonstrate the presence of an incentive effect, point 28 CEEAG requires to identify and to quantify the factual scenario and the likely counterfactual scenario in the absence of aid, based on the quantification referred to in Section 3.2.1.3 CEEAG.

(119) The German authorities explained that, in the factual scenario with aid, the beneficiaries will invest in the Power4Steel – Phase 1 project, consisting in the construction and installation of a DR plant with a capacity of [1-10] million tonnes of DRI per year and two EAFs. According to the information submitted by the German authorities, the NPV of the factual scenario is negative and amounts to EUR –[2000-2500] million (recital (77)).

(120) The German authorities also explained that, in the absence of the aid and given the significant negative NPV, the beneficiaries would not undertake the same investment (recitals (73) to (76)) nor any other alternative investment, but continue the business as usual, i.e. continue to use both blast furnaces, eventually after undertaking necessary maintenance investments.

(121) The Commission considers that the counterfactual scenario submitted by German authorities is credible, genuine and related to decision-making factors prevalent at the time of the decision by the aid beneficiaries regarding the project. In the absence of the aid, the beneficiaries would not have sufficient incentives to engage in the supported project and would not undertake an alternative project aimed at reducing or avoiding greenhouse gas emissions linked to the reduction of iron ore.

(a) First, the Commission notes that the quantification of costs and revenues of the factual scenario, as submitted by the Member State, shows a negative NPV (recital (77)). The business case submitted by the German authorities (section 2.7.2.6) demonstrates that investing in the Power4Steel – Phase 1 project would not be profitable for the beneficiaries, nor would it allow the beneficiaries to recover the high costs of the investment.

(b) Moreover, while the existing negative externalities are mitigated by the EU ETS, such market-based system does not appear sufficient to address this market failure in full (recital (76)(a)).

(c) Furthermore, based on the information submitted by Germany, it appears that the market, on its own, would not provide sufficient incentives to invest in the reduction of greenhouse gas emissions in the steel production process (recital (76)(b)). This is corroborated by financial simulations that Germany provided on the counterfactual scenario, showing that continuing the production of hot metal based on the BF route remains economically viable in the medium term (recital (74)).

(d) Also, no Union standards have been adopted requiring undertakings that operate in the steel manufacturing sector to change their production processes or to produce a certain share of steel products in a low-CO_2-emission process (recital (76)(c)). Therefore, the counterfactual scenario would not entail a breach of applicable Union standards.

(e) Furthermore, the Commission notes that technologies aimed at CO_2 emissions reduction from steel manufacturing other than the DRI-EAF route are not considered a credible alternative in the short to medium-term (recital (55)(a)).

(f) On this basis, the Commission concludes that the scenario consisting in the beneficiaries continuing their business as usual and not carrying out an alternative investment is the most likely counterfactual scenario in line with point 52 CEEAG.

(122) Based on the considerations in recitals (117) to (121), the Commission concludes that, in the absence of aid, the beneficiaries would not have an incentive to undertake the supported investment. Therefore, the requirement in point 28 CEEAG is fulfilled.

(123) Point 29 CEEAG stipulates that aid does not, in principle, have an incentive effect in cases where works on the project already started prior to the aid application. The Commission notes that works on the Power4Steel – Phase 1 project have not started prior to the aid application (recital (96)). Therefore, the requirement in point 29 CEEAG is fulfilled.

(124) Finally, point 32 CEEAG stipulates that aid granted merely to cover the cost of adapting to Union standards has, in principle, no incentive effect. However, as explained in recital (76)(c) and (121)(d), no Union standards have been adopted requiring undertakings that operate in the steel manufacturing sector to change their production processes or to produce a certain share of steel products in a low-CO_2-emission process. In relation to steel production, the Commission also notes that Union legislation does not impose a maximum level of greenhouse gas emissions for steel manufacturing processes. In addition, the German authorities confirmed that the existing plants in Dillingen and Völklingen are complying with applicable Union requirements (see recital (76)(c)). Therefore, the requirements of CEEAG point 32 are fulfilled.

(125) The Commission therefore considers that the measure has an incentive effect.

3.3.1.3. No breach of any relevant provision of Union law

(126) State aid cannot be declared compatible with the internal market if the supported activity, the aid measure, or the conditions attached to it entail a non-severable violation of relevant Union law (point 33 CEEAG).

(127) Based on the information submitted by the German authorities, the Commission has no reason to consider that the measure would involve any breach of relevant Union law.

(128) Therefore, the Commission considers that the measure does not infringe relevant Union law, and that the condition of point 33 CEEAG is fulfilled.

3.3.1.4. Conclusion

(129) The Commission therefore concludes that the measure fulfils the first (positive) condition of the compatibility assessment i.e. that the aid facilitates the development of an economic activity.

3.3.2. Negative condition: the aid does not unduly affect trading conditions to an extent contrary to the common interest

3.3.2.1. Need for State intervention

(130) As required by point 89 CEEAG, the German authorities identified the policy measures already in place to reduce greenhouse gas emissions (recitals (9) to (16)).

(131) As required by point 89 CEEAG, the German authorities explained that current measures and policies such as the EU ETS, do not provide sufficient financial incentives for investments to reduce the greenhouse gas emissions linked to the steel production (recital (76)(a)).

(132) In order to demonstrate the necessity of aid, points 38 and 90 CEEAG require that the Member State shows that the project would not be carried out without the aid, taking into account the counterfactual situation, as well as relevant costs and revenues including those linked to measures identified in point 89 CEEAG.

(133) The German authorities submitted a counterfactual scenario consisting in the continuation of the traditional BF-BOF route in both blast furnaces and showing that this continuation remains economical in the short and in the medium-term. (recitals (73) and (74)). Based on the information submitted by Germany, the Commission considers this counterfactual to be plausible. By contrast, as explained in Section 2.7.2.6, the German authorities submitted a quantification of the main costs and revenues of the Power4Steel – Phase 1 project, revealing a negative NPV of the factual scenario.

(134) The Commission therefore considers that the measure is necessary to support the targeted economic activity in a manner that increases environmental protection.

3.3.2.2. Appropriateness of the aid

(135) Point 93 CEEAG states that the Commission presumes the appropriateness of aid for achieving decarbonisation goals, therefore including aid for reducing greenhouse gas emissions from steel manufacturing processes, provided all other compatibility conditions are met.

(136) Since, as explained in Sections 3.3.1, 3.3.2.1 and 3.3.2.3 to 3.3.2.6, all other compatibility conditions are met, the Commission considers that the measure is an appropriate instrument to support the targeted economic activity in a manner that increases environmental protection.

3.3.2.3. Eligibility

(137) Point 95 CEEAG explains that decarbonisation measures targeting specific activities which compete with other unsubsidised activities can be expected to lead to greater distortions of competition, compared to measures open to all

competing activities. As such, Member States should give reasons for measures which do not include all technologies and projects that are in competition.

(138) The Commission notes that the present project falls in the situation described in point 96(g) CEEAG. In particular:

(a) The project was selected following an open call to form part of a large integrated cross-border project, jointly designed by several Member States and which aims to have an important contribution to environmental protection in the Union's common interest (Section 2.7.3);

(b) Based on the information submitted by the German authorities (recital (56)), the project is amongst the early adopters of an innovative technology in its sector, i.e. steel manufacturing. First, the DR-plant technology is innovative because DR plants using hydrogen are not yet widely operated at full commercial scale, especially DR plants that can accommodate more than [80-85]% of hydrogen in replacement of natural gas. Second, the EAF technology implemented in the Power4Steel – Phase 1 project will be adjusted to the technical characteristics of the secondary metallurgy processes in Dillingen and Völklingen. Third, the beneficiaries will create a new metallurgical process by using a charging mix of DRI and scrap and adjusting the EAF and secondary metallurgy processes in order to realise ultra-low level of residuals in accordance with the high-quality steel products of Dillinger and Saarstahl. Fourth, the beneficiaries will implement an innovative storage and transport technology to handle the cold DRI produced in Dillingen. Fifth, they will install and test a special equipment currently under development to enable the recycling of slags produced in the EAF.

(139) The Commission therefore considers that the restricted eligibility criteria for the measure are justified based on point 96(g) CEEAG.

(140) According to point 99 CEEAG, prior to the notification of aid, other than in duly justified exceptional circumstances, Member States must consult publicly on the competition impacts and proportionality of measures to be notified under Section 4.1 CEEAG. Footnote 61 clarifies that 'A separate consultation may also not be required for cases referred to in point 96(g)'. The present measures fall under the exception set out in point 96(g) CEEAG, based on the considerations in recitals (137) and (138). Therefore, the public consultation requirement does not apply.

3.3.2.4. Proportionality of the aid and cumulation

(141) According to point 47 CEEAG, State aid is considered to be proportionate if the aid amount per beneficiary is limited to the minimum needed for carrying out the aided project or activity. Points 103 and 104 CEEAG state that aid for reducing greenhouse gas emissions should, in general, be granted through a competitive bidding process, that, in principle, should be open to all eligible beneficiaries to enable a cost-effective allocation of aid and reduce competition distortions.

(142) The Commission notes that the present measure falls under the exception from the requirement to allocate aid and determine the aid level through a competitive bidding process set out in point 107(c) CEEAG, on the same grounds explained above with regard to the restricted eligibility for the measure (recitals (138) and

(139)), as the project was selected following an open call to form part of an IPCEI and is amongst the early adopters of an innovative technology in its sector.

(143) Therefore, as set out in point 51 CEEAG, in the absence of a competitive bidding process, the Commission has assessed the proportionality of the aid in question by comparing the profitability of the factual and counterfactual scenarios, based on the quantification of costs and revenues submitted by the Member State. As indicated in point 52 CEEAG, where the most likely counterfactual scenario consists in the beneficiary not carrying out an investment or continuing its business without changes, the net extra cost, or funding gap, of the aided project may be approximated by the negative NPV of the project in the factual scenario without aid over the duration of the project.

(144) For the counterfactual scenario, as described in Section 2.7.2.6.3, Germany submitted that, in the absence of aid, the beneficiaries would not undertake the same investment nor any alternative decarbonisation investment. The Commission, also based on its considerations in Section 3.3.1.2, finds this reasoning valid.

(145) Since the German authorities explained that the beneficiaries would not undertake any alternative investment in the absence of aid and would rather continue their normal business conduct, the Commission, in line with point 52 CEEAG, considers that the net extra cost may be approximated by the negative NPV of the project in the factual scenario without aid over the duration of the project; this corresponds to EUR -[2000-2500] million.

(146) The Commission reviewed in detail the calculations provided by the German authorities and verified the assumptions in those calculations. The Commission notes that the funding gap analysis submitted by the German authorities contains all the elements listed in point 51 CEEAG. These include, in addition to the costs and revenues linked to the project, the calculation of the project's WACC used to discount future cash flows, as well as of the NPV of the factual and of the counterfactual scenarios (section 2.7.2.6).

(147) The Commission considers that the assumptions applied by the German authorities for the purposes of the funding gap calculation used for the quantification can be retained for the following reasons (recitals (149) to (152)).

(148) As also noted in recital (77), the NPV of the factual scenario for the Power4Steel – Phase 1 project is EUR -[2000-2500] million.

(149) As regards the WACC, the Commission notes that the German authorities confirmed that the rate of [5-10]% used for the calculations corresponds to ROGESA's internal WACC (recital (78)) and provided evidence regarding its calculation's methodology. The Commission finds the WACC and underlying calculation credible.

(150) For the costs, the Commission assessed that the projections include all of the costs expected to be needed for the project. To this end, the Commission verified that the cost streams are realistic and based on reliable sources. Notably, the capital expenditure estimates in the factual scenario are for the main pieces of equipment based on negotiations of the beneficiaries with potential suppliers and on internal estimates by the beneficiaries for the remainder (recital (68)), while operating

costs, which represent the largest share of costs, are based on verified data, external studies or internal projections relying on the beneficiaries' experience of the steel sector (recital (69)). Furthermore, the German authorities submitted that they have benchmarked operational costs, such as electricity, natural gas, scrap against cost assumptions of other cases covering similar markets (with the exception of prices for renewable hydrogen that are in a high range). This latter assumption has been explained by the specific context of the beneficiaries, that cannot benefit from an easy access to renewable hydrogen before the connection of Dillingen to a German hydrogen network, which is planned in the early 30s (recital (51)). The Commission considers that this reasoning is credible.

(151) For the terminal value, the Commission notes that the project's projections for the factual scenario include a terminal value that captures any remaining expected market value of the Power4Steel – Phase 1 project after the end of the projections (i.e., 2042) (recital (72)). The Commission finds this reasoning credible.

(152) For the revenues, the Commission assessed and ensured that the projections are reliable. To this end, the Commission verified that the revenue streams:

(a) Are comprehensive and thus in line with the technical characteristics of the project: the Commission found that this is the case. In the factual scenario, the project's analysis includes revenues linked to finished steel products and the green premium reflecting the willingness of customers to pay for the 'green' quality of steel (recitals (70) and (71));

(b) Accrue over the entire expected life-cycle of the investment: the Commission found that this is the case. In the factual scenario, the revenues accrue between 2027 and 2042 (recital (70)).

(c) Rely on verified data, market sources and internal forecasts which the Commission finds reasonable. It is also coherent with the costs. The Commission notes that the calculation submitted by the German authorities assumes that steel produced via the DRI-EAF route attracts a limited 'green premium' reflecting the willingness of customers to pay for the 'green' quality of steel, which however does not allow to pass on all the costs of the DRI-EAF route steel production process (recital (76)(b)). The Commission finds this reasoning credible.

(153) Having verified the funding gap calculations as described in recitals (146) to (152), the Commission concludes that the funding gap, as submitted by the German authorities, was calculated in line with the CEEAG.

(154) As the aid amount does not exceed the funding gap of the Power4Steel – Phase 1 project, as defined in recital (119) and shown in Table 4, the Commission considers that the aid is proportionate in that it does not exceed the minimum necessary for the aided project to be sufficiently profitable.

Funding gap (NPV)	Aid amount (nominal)	Aid amount (NPV)
EUR -[2000-2500] million	EUR 2 600 million	EUR [2000-2500] million

Table 4: Comparison of the funding gap and aid amount.

(155) Point 56 CEEAG explains that when aid under one measure is cumulated with aid under other measures, Member States must specify the method used to ensure that the total amount of aid for a project or an activity does not lead to overcompensation or exceed the maximum aid amount allowed under the CEEAG. Moreover, point 57 CEEAG indicates that when Union funding that does not constitute State aid is combined with aid, the total amount of public funding granted in relation to the same eligible costs must not lead to overcompensation. In this respect, the Commission notes that aid under the measure may not be cumulated for the same eligible costs with other aid or Union funding (recitals (97) and (98)).

(156) Furthermore, the Commission notes that the claw-back mechanism described above in Section 2.7.2.7 provides further reassurance that the aid will not result in overcompensation, while keeping incentives for the beneficiaries to accelerate renewable hydrogen uptake, to minimise its costs and to develop its business in a more efficient manner over time.

(157) On the basis of the assessment put forward in recitals (141) to (156), the Commission considers that aid granted under the measure is proportionate.

3.3.2.5. Transparency of aid

(158) The Commission notes that the German authorities will ensure compliance with the transparency requirements laid down in points 58 to 61 CEEAG. The relevant data of the measure will be published on a comprehensive State aid website (recital (99)).

3.3.2.6. Avoidance of undue negative effects of the aid on competition and trade

(159) Point 70 CEEAG explains that the Commission will approve measures under these guidelines for a maximum period of 10 years. Germany estimates that the ad hoc decision granting the direct grant will be adopted within 4 years after the notification of the Commission's decision approving the measure (see recital (20)). Therefore, in line with point 70 CEEAG, no aid will be granted under the measure after 10 years from the date of the notification of the Commission decision approving the measure.

(160) Point 115 CEEAG requires Member States to estimate the subsidy per tonne of CO_2 equivalent emissions avoided for each project, or in the case of schemes, each reference project, and provide the assumptions and methodology for that calculation. To the extent possible, that estimation should identify the net emissions reduction from the activity, taking into account life-cycle emissions created or reduced. Moreover, short and long-term interactions with any other relevant policies or measures, including the Union's ETS, should be considered. The Commission notes that the German authorities provided an

estimate of the subsidy per tonne of CO_2 emissions avoided, corresponding to EUR 48.67 per tonne of CO_2, together with the underlying assumptions (recital (65)). The Commission also notes that other policies or measures including the EU ETS are not sufficient to incentivise greenhouse gas emissions reduction in the steel production sector (recitals (76) and (121)(b)). Therefore, the Commission considers that the quantification required by point 115 CEEAG already takes into account interactions with other relevant policies and measures. Point 115 CEEAG is therefore complied with.

(161) Point 116 CEEAG explains that the aid must not merely displace the emissions from one sector to another and must deliver overall greenhouse gas emission reductions. Point 117 CEEAG requires that aid for the decarbonisation of industrial activities reduce the emissions directly resulting from that industrial activity. Furthermore, point 127 CEEAG requires Member States to explain how they intend to avoid the risk of aid stimulating or prolonging the consumption of fossil-based fuels and energy.

(162) The Commission notes that, as explained by the German authorities, the Power4Steel – Phase 1 project will allow the beneficiaries to reduce the CO_2 direct emissions linked to their economic activities. More specifically, the project is expected to lead to the avoidance of [50-60] million tonnes of CO_2 throughout its duration compared to the counterfactual scenario (recital (59)). Therefore, the aid reduces the emissions directly resulting from the industrial activity, as required by point 117 CEEAG.

(163) To demonstrate the impact of indirect emissions linked to hydrogen, the German authorities indicated that the beneficiaries would purchase and use in the project renewable hydrogen or hydrogen achieving at least 70% lifecycle greenhouse gas emissions savings compared to the fossil fuel comparator (recitals (53) and (54)). The German authorities provided calculations showing that indirect emissions linked to the hydrogen used in the DR plant would account for a maximum of [0.60-0.70] million tonnes of CO_2eq.

(164) The German authorities explained that emissions linked to the electricity consumption have been calculated, for the entire duration of the Power4Steel – Phase 1 project, based on the evolution of the German grid emission factor (recital (63)) and amount to [1-10] million tonnes of CO_2. In addition, the German authorities also provided a calculation for a significantly more conservative scenario (recital (63)). The indirect emissions linked to electricity consumption over the duration of the Power4Steel – Phase 1 project would then amount to [10-20] million tonnes of CO_2, which is significantly lower than the direct emission savings projected for the project (i.e. [50-60] million tonnes of CO_2) (recital (59)).

(165) Based on the elements described in recitals (163) and (164), the Commission concludes that the indirect emissions are lower than the direct emission savings resulting from the project (compared to the counterfactual scenario). The Commission therefore concludes that the aid does not merely displace the emissions from one sector to another but delivers overall greenhouse gas emissions reductions. The measure therefore complies with point 116 CEEAG.

(166) Points 127 to 129 CEEAG explain that the aid measure may not stimulate or prolong the consumption of fossil-based fuels and energy, thereby hampering the development of cleaner alternatives and significantly reducing the overall

environmental benefit of the investment. Whereas measures that incentivise new investments in energy based on the most polluting fossil fuels will not be considered to have any positive environmental effects, Member States must explain how a lock in to industrial production technologies using natural gas will be avoided.

(167) The Commission notes that the measure involves an investment in a DR plant, which can be operated using variable shares of natural gas and hydrogen (recitals (39), (45) and (47)), with a trajectory to substitute [80-85]% of the natural gas with renewable hydrogen and the potential to move up to 100% hydrogen, thus preventing a technical lock-in (recital (55)(c)).

(168) The Commission also notes that the beneficiaries will gradually increase the share of hydrogen used in the DR plant, and will phase out natural gas until it represents [15-20]% of the gas used in the DR plant (recitals (47) and (48)). The Commission notes in this respect that the German authorities confirmed that they will monitor the use of hydrogen by the beneficiaries, with a view to ensuring that natural gas is phased out as scheduled (section 2.7.2.8). The Commission considers the beneficiaries' plan to replace [80-85]% of their natural gas needs with hydrogen credible, in that:

(a) The beneficiaries already have concrete plans to source the quantities of hydrogen needed to ensure sufficient hydrogen supply to address the project's demand (recital (52));

(b) The beneficiaries have an interest to replace natural gas with renewable hydrogen, as it would allow them to market the steel products for the production of which renewable hydrogen has been used with a premium (recital (71));

(c) A claw-back mechanism and a monitoring mechanism will be in place to neutralise the economic incentive to deviate from the planned trajectory for the phasing-out of natural gas (sections 2.7.2.7 and 2.7.2.8).

(169) Finally, the Commission notes that a more environmentally friendly alternative than the DRI-EAF route being ready to substitute the complete steel production via the BF-BOF route does not exist and is not expected to become available in the short term (recital (55)(a)). The Commission also notes that Germany provided explanations on the benefits of limiting the share of hydrogen in the gas used in the DR plants to [80-85]% (recitals (47) to (49)).

(170) Therefore, based on the considerations in recitals (167) to (169), the measure is not expected to displace investments into cleaner technologies for steel production or to lock-in industrial production technologies based on natural gas.

(171) Point 120 CEEAG explains that Member States must demonstrate that reasonable measures will be taken to ensure that the projects that have been granted aid will actually be developed. In this respect, the Commission notes that the German authorities intend to closely monitor the development of the project, and have mechanisms in place under national legislation which would allow them to act, should the project not be realised or its objectives not be met (section 2.7.2.8).

(172) Point 121 CEEAG explains that aid may take various forms but when it covers costs mostly linked to operation rather than investment Member States should demonstrate that the aid is designed so that it results in more environmentally-friendly operating decisions. The Commission observes that the aid takes the form of an ex-ante investment grant. It covers costs linked to investment and operations. In any event, the aid is conditional on the use of hydrogen that achieves lifecycle greenhouse gas emissions savings of at least 70% and the phasing out of natural gas and the phasing in of hydrogen according to the timeline put forward by the beneficiaries. Compliance with these conditions will be monitored so as to lead to more environmentally friendly operating decisions (Section 2.7.2.8).

(173) Point 122 CEEAG states that where aid is primarily required to cover short-term costs that may be variable, Member States should confirm that the production costs on which the aid amount is based will be monitored and the aid amount updated at least once per year. As explained by the German authorities, the aid is not primarily required to cover variable short-term costs but to primarily cover investment costs; the aid is also not paid to cover such short-term costs (recitals (67) and (68)). Therefore, point 122 CEEAG does not apply.

(174) According to point 123 CEEAG the aid must be designed to prevent any undue distortion to the efficient functioning of markets and preserve efficient operating incentives and price signals. The Commission observes that the aid preserves operating incentives and price signals. In particular, the aid is not modified if the operating costs of the beneficiaries increase; if costs decrease or revenues increase, [65-70]% of the surplus will be clawed back (see recital (84)). This prevents overcompensation and at the same time maintains an incentive for the company to operate efficiently on the market.

(175) Point 132 CEEAG states that Member States should demonstrate how the proposed measure will not lead to undue distortions of competition, for example, through increased market power, should the measure be expected to benefit a particularly limited number of beneficiaries. In this case, the measure benefits three beneficiaries only, Dillinger, Saarstahl and ROGESA (recital (21)).

(176) The Commission's analysis of potential undue distortions of competition was carried out by assessing the foreseeable impact that the aid may have on competition between undertakings in the sector concerned (steel production) and on the risk of overcapacity.

(177) The Commission assessed the position of the beneficiaries in the steel manufacturing sector. In this respect, the Commission notes that the beneficiaries hold a strong position in the Union for certain carbon steel products. At the same time, the Commission notes that the aid will not result in an increase of their manufacturing capacity, as the new DR plant will replace an existing blast furnace which will be decommissioned (recitals (39) to (44)). The Commission also notes that the German authorities committed to verify throughout the project’s operation that crude steel production will not exceed 6 million tonnes per year, so as to ensure that the aid has not led to an increase in production volumes by the beneficiaries compared to their past figures (recital (88)(d)). Therefore, the measure cannot be regarded as increasing the beneficiaries’ production capacity of steel products or the level of steel production beyond the

existing production capacity and production, discouraging expansion of existing competitors or inducing their exit or discouraging the entry of new competitors.

(178) As regards the measure's effect on the hydrogen market, the Commission notes that the project will generate a hydrogen demand of approximatively [100 000-200 000] tons per year as of 2036 (recital (50)). As a result, the measures are expected to stimulate the development of the hydrogen market in the EU and by doing that, to serve as an anchor for the development of projects in the hydrogen value chain, particularly in the region (recital (51)). The Commission also notes that, to select its hydrogen suppliers, the beneficiaries will set a tendering process that will comply with the German law on grants for the procurement of goods and services (recital (69)(b)). Therefore, the measure is not expected to unduly distort competition in the hydrogen production sector.

(179) The Commission has undertaken an assessment of the potential risk of overcapacity. The Commission's assessment has shown that the volumes of steel produced as part of the Power4Steel – Phase 1 project replace existing production capacities using conventional production routes (recitals (39) to (44)).

(180) The Commission notes as well that:

(a) The aid addresses well defined residual market failures consisting of negative environmental externalities linked to the production of steel in the traditional BF-BOF route using fossil fuels (recital (76)). As submitted by Germany, the existing measures and policies such as EU ETS alone are insufficient to incentivise investments in green steel production to reduce greenhouse gas emissions resulting from the steel production;

(b) The Power4Steel – Phase 1 project will provide significant CO_2 emission savings resulting from the implementation of hydrogen-based DR plant and EAFs (recital (59));

(c) The claw-back mechanism and monitoring measures to be implemented by the German authorities provide additional safeguards for the achievement of greenhouse gas emission reductions and compliance with the trajectory for the phasing out of natural gas (sections 2.7.2.7 and 2.7.2.8);

(d) The German authorities provided evidence that demonstrates that the Power4Steel – Phase 1 project complies with the principle of 'do no significant harm' as referred to in Article 17 of Regulation (EU) 2020/852 (recital (66));

(e) The Power4Steel – Phase 1 project concerns the reduction of emissions of two existing site, whereby existing conventional production processes are replaced by innovative and more environmentally-friendly activities. Therefore, the Commission considers that the existing steelworks site of the beneficiaries, rather than the availability of aid, has driven their choice of location for the Power4Steel – Phase 1 project.

(181) Based on the arguments set out in recitals (176) to (180), the Commission considers that risks of distorting competition and trade among Member States by creating a subsidy race or strengthening market power in the steel manufacturing

sector remain limited and are in any event outbalanced by the positive effects of the Power4Steel – Phase 1 project for climate change mitigation.

(182) Based on point 133 CEEAG, where the aid is granted without a competitive bidding process and the measure benefits a particularly limited number of beneficiaries or an incumbent beneficiary, the Commission may require the Member State to ensure that the beneficiary disseminates the know-how obtained as a result of the aided project with the aim of accelerating the roll-out of the successfully demonstrated technologies. The Commission notes that, as explained by the German authorities, the beneficiaries will disseminate knowledge gained through the Power4Steel – Phase 1 project (section 2.7.2.9). The Commission also notes that the knowledge-dissemination activities envisaged by the beneficiaries target other market players in the steel industry, which may benefit from the beneficiaries' experience when developing their decarbonisation projects, thereby contributing to the deployment of cleaner technologies in the steel sector.

(183) Therefore, the Commission concludes that aid granted under the measure avoids undue negative effects on competition and trade.

3.3.3. Weighing up the positive and negative effects of the aid

(184) Pursuant to point 134 CEEAG, based on the assessment conducted in Sections 3.3.1 and 3.3.2, and considering that there are no indications of non-compliance with the 'do no significant harm' principle (recital (66)), the Commission concludes that the positive effects of the measure outweigh the negative effects on the internal market.

3.3.4. Conclusion on the compatibility of the measure

(185) The Commission concludes that the aid facilitates the development of an economic activity and does not adversely affect trading conditions to an extent contrary to the common interest. Therefore, the Commission considers the aid compatible with the internal market based on Article 107(3)(c) TFEU, as interpreted in the relevant provisions of CEEAG.

4. AUTHENTIC LANGUAGE

(186) As mentioned in recital (2), Germany has accepted to have the decision adopted and notified in English. The authentic language will therefore be English.

5. CONCLUSION

The Commission has accordingly decided not to raise objections to the aid on the grounds that it is compatible with the internal market pursuant to Article 107(3)(c) of the Treaty on the Functioning of the European Union.

If this letter contains confidential information which should not be disclosed to third parties, please inform the Commission within fifteen working days of the date of receipt. If the Commission does not receive a reasoned request by that deadline, you will be deemed to agree to the disclosure to third parties and to the publication of the full text of the letter in the authentic language on the Internet site: http://ec.europa.eu/competition/elojade/isef/index.cfm.

Your request should be sent electronically to the following address:

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State Aid Greffe
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Yours faithfully,

For the Commission

Margrethe VESTAGER
Executive Vice-President