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**Subject: State Aid SA.55829 (2019/N) – Germany
Federal R&D aid scheme for the aeronautics sector**

Excellency,

1. PROCEDURE:

- (1) On 28 November 2019, the German authorities notified a R&D scheme for the aeronautics sector, with an annual average budget of EUR 200 million, which could be topped up by annually EUR 40 million from interested Länder, for assessment under the 2014 RDI Framework.¹ On 16 December 2019, Germany submitted additional information. The notified scheme was preceded by SA.37528 (2013/N)² which expired at the end of 2018.

2. DETAILED DESCRIPTION OF THE MEASURE

2.1 Objective of the measure

- (2) The objective of the measure is to encourage industrial research and experimental development activities in the aeronautics sector in order to improve technological competence, improve collaboration between undertakings and research institutes, and strengthen SMEs as suppliers of components.
- (3) In accordance with the objectives of the predecessor scheme, the measure aims to fund projects which contribute the following objectives: (1) energy efficiency and environmental protection, including reduction in noise levels and emission of air

¹ Framework for State aid for research and development and innovation, OJ C 198, 27.06.2014, p. 1.

² SA.37528 (initially SA.26459), Prolongation until 31 December 2018 of the approved State aid scheme SA.26459 (N 431/2008), R&D aid to the aeronautic sector, https://ec.europa.eu/competition/state_aid/cases/250300/250300_1520142_106_2.pdf

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pollutants, (2) safe/secure aviation, (3) efficient aviation, with the aim to target recent market developments and challenges such as digitization and artificial intelligence and (4) integration of aviation systems, that is supporting measures which encompass and consider aircraft and components as a whole and integrated system, covering the whole value chain ensuring spill-over but also spin-in effects.

2.2 Legal basis

- (4) The legal basis of the scheme is the German annual budget act in connection with the budget acts of the different Länder³ and the Programme announcement for the Sixth Federal R&D aid scheme for the aeronautics sector (Förderung von Forschungs- und Entwicklungsvorhaben im Rahmen des Sechsten nationalen zivilen Luftfahrtforschungsprogramms⁴).
- (5) The Programme announcement will be implemented by three calls for projects that might target specific areas of aeronautic research. However, the funding conditions relevant for the state aid assessment will be identical for each of the calls, and are laid down in the announcement and in so called General Provisions for R&D Project Aid 2017 ("Nebenbestimmungen für Zuwendungen auf Kostenbasis des Bundesministeriums für Bildung und Forschung an gewerbliche Unternehmen für Forschungs- und Entwicklungsvorhaben, NKBF 2017"⁵).
- (6) The deadline to submit project layouts for the first call has been set for 28 February 2020 12 am.⁶

2.3 Beneficiaries

- (7) Eligible for aid to be awarded under the scheme are SMEs as defined in the Commission recommendation⁷ and large undertakings that are established, respectively have their headquarters, within the European Economic Area (EEA) or Switzerland, primarily from the aeronautic sector, broadly defined on the basis of the NACE classification, under the codes

C.30.3 - Manufacture of air and spacecraft and related machinery

C.30.3.0 - Manufacture of air and spacecraft and related machinery

C.33.1.6 - Repair and maintenance of aircraft and spacecraft.

³ Bundeshaushaltsplan 2019, Einzelplan 09, Bundesministerium für Wirtschaft und Energie, Titelgruppe 03, Luft- und Raumfahrt, Titel 683 31-165, Forschungsförderung von Technologievorhaben der zivilen Luftfahrt, in Verbindung mit den Haushaltsgesetzen der Länder.

⁴ The approved text of the scheme will be published on: https://www.bundesanzeiger.de/ebanzwww/wexsservlet?page.navid=official_starttoofficial_start_chang_year&genericsearch_param.year=2020&genericsearch_param.edition=&session.sessionid=440541fbd456bb5fb62b152e69065b18&genericsearch_param.sort_type

⁵ Nebenbestimmungen für Zuwendungen auf Kostenbasis des BMBF an gewerbliche Unternehmen für Forschungs- und Entwicklungsvorhaben, <https://www.bmbf.de/foerderungen/bekanntmachung-1429.html>.

⁶ Interested parties whose drafts were positively evaluated are invited to submit a formal application by 18 June 2020, 12 am.

⁷ Commission recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises, OJ L 124, 06.05.2003, p. 36.

- (8) Projects can be conducted as R&D-projects of the applicant, also in collaboration of the applicant with other undertakings and/or research organisations, within the meaning of point 15 lit.cc) and point 27 of the RDI Framework. The German authorities informed the Commission that collaborative projects are likely to represent more than 90% of the aided projects.
- (9) The scheme may contribute to the public financing of collaboration projects of research organisations.
- (10) Collaboration projects with research organisations have to be based on an cooperation agreement, to be signed before the start of the collaboration project, and have to meet the requirements of “effective collaboration”, as laid down in RDI Framework, point 15 lit.h) and section 2.2.2, points 27 and 28, in order to make sure that the public financing of the collaboration project of the research organisation does not lead to indirect State aid to the partner undertakings.
- (11) Enterprises in difficulty, defined on the basis of the Commission guidelines on State aid for rescuing and restructuring firms in difficulty⁸ are excluded from the scope of the scheme.
- (12) The German authorities expect the number of beneficiaries to be between 501 and 1000.

2.4 Duration and budget

- (13) The scheme is planned to be implemented in three calls. Granting decisions are planned to be issued in 2020, 2021/2022 and 2023/2024, following the respective calls. Last date for granting of aid under the scheme is thus 31 December 2024.
- (14) The scheme has an overall volume of EUR 1,379.8 billion from the Federal budget, which corresponds on average to annual payment appropriations of around EUR 200 million until the end of 2026. It can be reinforced by up to EUR 40 million in total annually by interested Länder which might have a special interest in individual projects.
- (15) The Commission notes that the notified measure meets all compatibility provisions of the General Block Exemption Regulation 2014 (GBER 2014) (except its validity in time),⁹ and considers that aid under its first call could have been implemented within the current period of validity of the GBER 2014 without a priori notification of the measure to the Commission pursuant to Article 108 (3) of the TFEU
- (16) In line with section 4 of the RDI Framework, additional compatibility criteria apply to individual aid which is subject to the individual notification obligation. Consequently, the German authorities confirmed that they will notify separately to the Commission any individual aid grant under the present scheme which-exceeds EUR 20 million (industrial research) or EUR 15 million (experimental

⁸ Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty, OJ C 249, 31.07.2014, p. 1

⁹ Commission regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, 26.6.2014, OJ L 187/1

development) per project per beneficiary. These thresholds shall not be circumvented by artificial splitting up of the aided projects.

2.5 Granting authority, eligible R&D activities and projects, selection criteria and selection process

- (17) Aid grantor is Federal Ministry of Economic Affairs, whereas the programme management lies with the DLR (Deutsches Zentrum für Luft- und Raumfahrt, also for projects jointly financed by the Federal and Länder level).
- (18) Under the scheme, aid can be provided for projects of industrial research and experimental development, as defined in section 2.2, point 15 lit.cc), lit.j) and lit.q) of the RDI Framework. In exceptional cases, public financing under the scheme is made available for fundamental research projects of research organisations falling under section 2.2, point 15 lit.m) of the RDI Framework under certain conditions.
- (19) The selection process under the individual calls follows a two-step approach. As a first step, interested parties have to submit project outlines; as a second step, and only if the project outlines were positively evaluated, the successful candidates are invited to submit a formal aid application.
- (20) The project manager will be supported in the assessment of the project layouts by expert groups that will assess them, based on a series of objective criteria (“check lists”) and will give a preliminary, non-binding funding proposal based on the project outline.
- (21) The objective criteria considered for the project evaluation are the following:
 - (a) The project's contribution to the objectives of the scheme;
 - (b) The project’s contribution to the objectives of the respective call; these are
 - Developing hybrid-electric drive systems in the aviation sector
 - Advanced degree of system automation comprising Single Pilot Cockpit and unmanned aircraft
 - Enforcing competitiveness and international diversification of the supply industry
 - Implementation of new technologies in the field of industry 4.0 and artificial intelligence (AI)
 - Supporting SMEs in the aviation sector
 - (c) The project must fall within one of the disciplines of the scheme; these are
 - Clean and eco-efficient cabin
 - High-performing, secure and energy-efficient systems
 - Quiet and efficient drives
 - Structures and construction methods
 - Flight physics
 - Safe and efficient aviation processes, environmental protection, flight guidance and air traffic control/ air navigation

- (d) Sound exploitation perspective;
 - (e) Project's technological quality and innovative content;
 - (f) Qualification of the applicant and quality of the cooperative R&D network;
 - (g) Project's methodology and chance of success;
 - (h) Financial planning of the project.
- (22) Interested parties whose project outlays were positively evaluated at the first stage by the experts, are invited to submit a formal application, thus entering the second phase of the selection process.
- (23) The Federal ministry for economic affairs will take the final granting decision, taking account of the assessment of the expert group and within the limits of the available budget.

2.6 Eligible costs

- (24) Eligible costs must fall within the categories foreseen by Annex 1 of the RDI Framework)
- (a) personnel costs;
 - (b) costs of instruments and equipment to the extent and for the period used for the research project;
 - (c) costs for building and land to the extent and for the duration used for the research project;
 - (d) cost of contractual research, technical knowledge and patents bought or licensed from outside sources at market prices;¹⁰
 - (e) additional overheads incurred directly as a result of the research project;
 - (f) other operating expenses including costs of materials, supplies and similar products incurred directly as a result of the research activity.
- (25) The eligible costs shall be supported by documentary evidence which shall be clear, specific and contemporary¹¹.

2.7 Aid instruments and aid intensities

- Form of aid

- (26) The aid will be awarded in the form of direct grants, paid out to the beneficiaries in various instalments. Following checks and audits in the course of the realization of

¹⁰ To the extent that research organisations offer contract research services, they will provide their services at market price.

¹¹ Sections 2.4.1. - 2.4.5 of the NBKF; to this end, the NBKF, will not be applied to the extent that they allow for a flat-rate approach to declare certain costs.

each project, the final payment of the outstanding aid amount will be provided in the final stages of the project.

– Aid intensities

- (27) The maximum aid intensity for large firms will be 50% of the eligible costs for industrial research and 25% of the eligible costs for experimental development.
- (28) In case a project consists of various work packages, and those packages fall under different R&D categories, the aid intensity applicable to the category closest to the market will be applied to the project as a whole.
- (29) The above ceilings can be increased under certain conditions by a bonus of 10% for medium-sized firms, and 15% for small firms, resulting in a maximum aid intensity of 65% to small undertakings and of 60% to medium sized undertakings for industrial research and resulting in a maximum aid intensity of 40% to small undertakings and 35% to medium sized undertakings for experimental development projects.

2.8 Incentive effect

- (30) Germany will ensure that the aid has an incentive effect on the R&D effort of the beneficiary; in particular it will control that the RDI activity will not have already started before the aid is granted. Aid can only be granted after an aid application was introduced under the scheme that has to include the applicant's name and size, a description of the project, including its location and start and end dates, the amount of public support needed to carry it out, and a list of eligible costs.
- (31) For each project in the programme, a qualified specialist (aeronautic engineer or specialist with equivalent qualification) will evaluate the incentive effect with objective criteria. The point of departure will be the explanations of the applicant, the relevant parts of the application, as well as observations about the project, followed by an analysis of the effects of the aid (in terms of increase in project size, scope, speed and increase of RD expenditure as such).

2.9 Cumulation and control measures

- (32) Apart from the Länder financing mentioned above in recital 11 of the present decision, aid for projects under the scheme in question cannot be co-financed by other sources of funding. Aid awarded under the scheme for a given project may not be combined with aid from other sources for the same project.
- (33) The scheme requires that applicants inform granting authorities if they receive funding from EU-, Federal or Länder level for projects which might complement the project potentially funded under the scheme in question. They have to demonstrate how the projects can be separated from one another.

2.10 Monitoring and reporting/Transparency

- (34) The German authorities will submit to the Commission annual reports on the implementation of the scheme containing, for each individual aid case of application of the scheme, the name of the beneficiary, the aid amount per beneficiary, the aid intensity, and the sectors of activity where the aided projects

are undertaken. The annual reports will include the demonstration of the incentive effect for projects benefiting large enterprises.

- (35) The German authorities commit to keep detailed records on the aid granted, including the necessary information concerning the eligible costs and the aid intensity, for a period of 10 years and to provide it on request to the Commission.
- (36) The German authorities commit to publish, within six months after the aid was awarded, on a comprehensive State aid website at least the following information on notified State aid measures exceeding EUR 500.000:¹² the full text of the aid scheme and its implementing provisions or legal basis for individual aid, or a link to it; the identity of the aid awarding authority; the identity of individual beneficiaries; the date of award; the type of beneficiary (SME or large enterprise); the region in which the beneficiary is located (at NUTS level II); and the principal economic sector in which the beneficiary has its activities (at NACE group level). The information must be available to the general public without restrictions, for at least 10 years.

2.11 Evaluation

- (37) The German authorities submitted, as part of the notification, an evaluation plan for the notified large scheme (annual average budget exceeding EUR 150 million, pursuant to point 121 RDI Framework).
- (38) The evaluation plan contains a list of 14 questions, grouped in three categories, that the evaluation will address.
- (39) Firstly, questions about the direct impact of the aid on the beneficiaries, such as
- “To what extent did the programme have an *incentive effect* on the beneficiaries?”;
 - “To what extent have input and activity indicators (e.g. R&D expenditure and collaborative activities) developed?”;
 - “Have the indicators of outputs and outcomes of R&D activities increased? Did the innovation output increase or did the programme lead to an increase in patent activities as well as scientific outputs?”;
 - “What specific effects result from the six programme lines¹³?” or
 - “Did the support have different effects on SMEs, large companies and universities or research institutions?”.
- (40) Secondly, questions about indirect impacts, such as
- “Can indirect effects (with regard to technology spill-overs into other companies, industries and sectors and the technological development there) be observed?” or
 - “Did the support have potential indirect negative effects on trade and competition in the aviation sector or in other sectors?”.

¹² <https://webgate.ec.europa.eu/competition/transparency/public/search>.

¹³ As defined in the first call.

- (41) Thirdly, questions about the proportionality and appropriateness of the aid, such as
- “Could the same effects have been achieved with less funding or a different type of support?” or
 - “Would other support measures have been better suited to achieving the objectives of the support?”
- (42) For each of the evaluation questions, the evaluation plan identifies result indicators, of a quantitative or qualitative nature depending on the issue.
- (43) Concerning the envisaged methods to conduct the evaluation, the German authorities explain that where possible, questions will be answered by following approaches based on the use of ‘control groups’. For example, since large enterprises in the aeronautics sector are likely to be among the aid beneficiaries, control groups will be established by selecting comparable large companies drawn from other industries. In addition to such methods, others will be also used and case studies will be conducted.
- (44) For the evaluation, information from existing data sources (such as R&D statistics and company accounts databases) will be combined with additionally collected data.
- (45) The evaluation will be carried out by an independent evaluator who will be selected by way of an open, competitive and non-discriminatory tender procedure, based on objective criteria including capabilities and skills.
- (46) An evaluation report based on the notified evaluation plan will be submitted to the Commission by 30 June 2024 at the latest. The submission of an interim report is scheduled for March 2023.
- (47) The evaluation plan, and the final report, will be published on the website of the German Federal Ministry of Economic Affairs and Energy. Recommendations from the evaluation will be incorporated into the future design of the successor scheme comparable programmes.

3. ASSESSMENT

3.1. Existence of aid

- (48) The Commission has analysed the presence of State aid in accordance with Article 107 (1) of the TEFU, as interpreted by the Commission Notice on the notion of State aid as referred to in Article 107 (1) of the Treaty on the Functioning of the European Union¹⁴ and, given the nature of the notified measure, by taking account of the guidance set out in chapter 3 of the RDI Framework.
- (49) To the extent that aid is awarded to enterprises, public funding of these activities will generally entail State aid.
- (50) The Commission notes that insofar as undertakings benefitting from state aid under the scheme may be supported by external contract research services provided by

¹⁴ Commission Notice on the notion of State aid as referred to in Article 107 (1) of the Treaty on the Functioning of the European Union, OJ C 262, 19.07.2016, p. 1

research organisations, the German authorities have put safeguards in place to ensure that there is no transfer of indirect State aid. Likewise, insofar as the scheme allows the funding of collaboration projects of “research organisations” (see recitals 6 to 8 and 13 of the present decision) in the definition of point 15 lit. ee) of the RDI Framework, the German authorities have put safeguards in place to ensure that there is no risk of cross-subsidisation between non-economic and economic activities of research organisations receiving funding. As far as these collaboration projects are concerned, the German authorities have put safeguards in place to comply with the notion of “effective collaboration” in the meaning of point 15 lit. h) of the RDI Framework, and to ensure that there is no passing through of indirect aid from publicly funded research organisations to undertakings.

- (51) The notified scheme is funded through the budget of the German Federal State and, in certain cases, cofunded through the budgets of the different Länder, and therefore through State resources. It favours a limited number of undertakings in the aeronautics sector, selected during the implementation of the scheme. Hence, the measure is selective. In addition, the aid under the scheme confers an advantage to the beneficiaries, as it relieves them partly from certain costs they would have to bear themselves, and allows them to improve their overall financial conditions and to enhance their market position. The scheme in question is targeted towards undertakings engaged in economic sectors where intra-EU trade takes place. It must therefore be assumed that the aid under the scheme is likely to distort competition and to affect trade between Member States.
- (52) Therefore, the scheme, insofar as it supports R&D projects of undertakings, constitutes State aid within the meaning of Article 107 (1) TFEU.

3.2. Legality of the aid – standstill clause

- (53) By notifying the measure before aid is awarded, the German authorities have fulfilled their obligations under Article 108 (3) of the TFEU. The German authorities confirmed that the scheme will be implemented only after its approval by the Commission.

3.3 Compatibility of the aid to R&D projects of undertakings

3.3.1 Basis and scope of compatibility assessment

- (54) As the objective of the notified measure is to promote R&D activities, its compatibility has to be assessed under the RDI Framework, which interprets the application of Article 107 (3) (c) of the TFEU in the field of research and development.
- (55) The Framework lists a series of “common assessment principles” against which it will assess the notified aid, namely:
- (a) contribution to a well-defined objective of common interest
 - (b) need for State intervention
 - (c) appropriateness of the aid measure
 - (d) incentive effect

- (e) proportionality of the aid (aid to the minimum)
 - (f) avoidance of undue negative effects on competition and trade between Member States
 - (g) transparency of aid
- (56) As the budget of the scheme exceeds EUR 150 million, and as Germany submitted as part of the notification an evaluation plan, its assessment will include, in the light of the potentially high cumulative distortions of competition resulting from this sectoral aid scheme, in accordance with points 120 and 121 of the RDI Framework, a verification of the conformity of the evaluation plan with the relevant Commission guidance.¹⁵
- (57) As the period of duration of the notified aid scheme goes beyond the period of validity of the GBER 2014, the Commission's assessment is not limited to the evaluation plan, in accordance with point 122 of the RDI Framework.

3.3.2 *Contribution to a well-defined objective of common interest*

- (58) In accordance with Article 107 (3) of the TFEU to be compatible with the internal market, a State aid measure must aim at achieving an objective of common interest. As emphasized by point 42 of the RDI Framework, the general objective of RDI aid is to promote the RDI effort in the Union.
- (59) According to point 44 of the RDI Framework, the Commission takes a favourable view towards a scheme in particular if it forms an integral part of a comprehensive programme or action plan to stimulate RDI activities or smart specialisation strategies, and if it is supported by rigorous evaluations of similar past aid measures demonstrating their effectiveness.
- (60) According to the German authorities, the scheme contributes to increasing the RDI effort which represents one of the objectives of the EU 2020 Strategy. It incentivises undertakings active in the aeronautics sector to undertake in response to market expectations additional RDI efforts which focus on developing innovative tools, systems and technologies with increased global competitiveness and a higher eco-efficiency and energy-efficiency.
- (61) In addition, the notified scheme is an integral part of the national Luftfahrtstrategie (aviation strategy) of the German government and complements, according to Germany, the European strategy "Flightpath 2050"¹⁶, Europe's vision for aviation, published in 2011, in that recent market developments such as artificial intelligence or the aim to reduce greenhouse emissions are addressed.
- (62) Likewise, to the extent that the scheme provides funding to projects which focus on the development of environmental friendly and energy efficient technologies or

¹⁵ European Commission, SWD, „Common methodology for State aid evaluation“, Brussels, 28.05.2014 SWD(2014)179final, https://ec.europa.eu/competition/state_aid/modernisation/state_aid_evaluation_methodology_en.pdf

¹⁶ Flightpath 2050 - Europe's Vision for Aviation, Report of the High Level Group on Aviation Research, <https://ec.europa.eu/transport/sites/transport/files/modes/air/doc/flightpath2050.pdf>

components, it contributes to the objectives spelled out only recently in the Commission communication “The European Green Deal”¹⁷ which calls for a massive reduction of emissions in transport by 2050.

- (63) The scheme is a successor scheme to Fifth Aeronautics Programme (“Luftfahrtforschungsprogramm V”, SA.37528¹⁸) which expired at the end of 2018. An evaluation report commissioned by the German authorities on their own initiative,¹⁹ and submitted to the Commission in the context of the notification, confirms that it helped to develop new, and to improve existing technologies²⁰ and thus contributed to maintain and reinforce high levels of innovation capacity in the sector concerned covering the whole value chain.²¹
- (64) In light of the considerations set out in recitals 58 to 64 of the present decision, the Commission concludes that the measure contributes to a well-defined objective of common interest.

3.3.3 Need for State intervention

- (65) Point 48 of the RDI Framework requires that “*State aid should be targeted towards situations where it can bring about a material improvement that the market cannot deliver on its own*”. In this case, it is therefore necessary to verify whether the envisaged objective could be achieved without State aid, or whether the efficient functioning of market forces is affected by situations of market failure.
- (66) The German authorities consider in particular that the financing of R&D projects in the aeronautics sector suffers from imperfect and asymmetric information on the financial markets (section 3.3.3.1 below), which leads to a sub-optimal level of R&D activity. This situation is reinforced as positive effects on the environment (section 3.3.3.3 below) are not appropriately remunerated.

3.3.3.1 Imperfect and asymmetric information on the financial markets

- (67) The German authorities argue that RDI activities in the aeronautics sector are characterised by a substantial level of uncertainty while their costs are comparably high, and projects have a particular long life-time/duration and payback period.²² On average, it takes no less than 10-20 years to implement results of research projects into market ready solutions, that is new planes developed. The aeronautics sector, respectively innovation therein, faces particularly high challenges such as high innovation costs, economic risk and a lack of alternative financing. This is particularly true in view of the growing importance of environmental

¹⁷ Communication from the Commission: The European Green Deal, 11.12.2019, COM(2019) 640 final, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf.

¹⁸ SA.37528 (initially SA.26459), Prolongation until 31 December 2018 of the approved State aid scheme SA.26459 (N 431/2008), R&D aid to the aeronautic sector, https://ec.europa.eu/competition/state_aid/cases/250300/250300_1520142_106_2.pdf.

¹⁹ Evaluierung des Luftfahrtforschungsprogramms (LUFO), commissioned by the Federal Ministry for Economic Affairs; summary report of the evaluation publicly available on: https://www.dlr.de/pt-lf/Portaldata/50/Resources/dokumente/evaluierung/Evaluierung_LuFo_2018_Abschlussbericht.pdf.

²⁰ Evaluation report, page 15 of the summary of the report and pages 121, 134, 144 of the report.

²¹ Evaluation report, page 18 of the summary of the report and pages 134, 135, 148-155 of the report.

²² Evaluation report, pages 138, 147 of the report.

considerations and political objectives which have to be taken into account by the sector/ OEMs.²³

- (68) Due to imperfect and asymmetric information, private investors may be reluctant to finance even valuable projects, and highly-qualified personnel may be unaware of recruitment possibilities in innovative undertakings. This is particularly true for SMEs.
- (69) The German authorities further maintain that imperfect and asymmetric information affects access to finance in general.
- (70) This seems to be particularly true for the aeronautics sector for which such a market failure has already been recognized by the Commission in the past in other cases concerning schemes²⁴ or ad hoc aid²⁵ targeted to foster R&D activities in the aeronautics sector which are marked by a high degree of risk and a long project duration. In addition, the German authorities check if the aid – and to which extent – is necessary to realize the project or if the project, without aid would not be conducted.

3.3.3.2 Positive externalities generated by the scheme

- (71) According to the German authorities, the R&D projects will also contribute to the achievement of objectives of public interest, such as aviation safety, and will help minimising negative ecological effects and the use of scarce resources. If left to the market, some projects might not be carried out at all or in a less innovative way so that State aid does therefore contribute to projects which result in an overall societal benefit.

3.3.3.3 Conclusion on the market failure

- (72) The Commission agrees with Germany that mostly due to imperfect and asymmetric information between the sector and the financial markets, many companies, and SMEs in particular, have no satisfactory solutions to finance R&D projects on the financial markets. The Commission concludes that State aid may be necessary to increase R&D&I in the Union in view of a situation where the market, on its own, fails to deliver an efficient outcome.

3.3.4 Appropriateness of the aid measure

- (73) According to the criteria set out in section 4.3 of the RDI Framework, the Commission evaluates the appropriateness of the aid measure among alternative policy instruments and among different aid instruments.

²³ Evaluation report, page 8 of the summary of the report and pages 6, 147 of the report

²⁴ SA.37528 (initially SA.26459), Prolongation until 31 December 2018 of the approved State aid scheme SA.26459 (N 431/2008), R&D aid to the aeronautic sector,

https://ec.europa.eu/competition/state_aid/cases/250300/250300_1520142_106_2.pdf

²⁵ See cases SA.33467 (Avance remboursable pour le développement de l'hélicoptère X4, https://ec.europa.eu/competition/state_aid/cases/242526/242526_1337542_58_1.pdf) and SA.33731 (Aiuto alla RSI ad AgustaWestland SpA - Nuovo modello elicottero da trasporto light intermediate AW169, https://ec.europa.eu/competition/state_aid/cases/242244/242244_1316764_109_2.pdf), SA.45183/ SA.45185. (Repayable advances for the research and development programme of the Airbus X6 helicopter, https://ec.europa.eu/competition/state_aid/cases/269252/269252_1956614_87_2.pdf),

- (74) An important element in this respect is therefore whether and to what extent aid for RDI can be considered an appropriate instrument to increase RDI activities, given that other less distortive instruments may achieve the same results.
- (75) In addition, as State aid for RDI can be awarded in various forms, the Commission has to establish, according to point 60 of the RDI Framework, whether the Member States ensured that the aid is awarded in the form that is likely to generate the least distortions of competition and trade.
- (76) Germany, as other Member states, took various measures to support the business R&D effort by various non-aid measures, e.g. by making available research infrastructures, scientific education, dedicated information networks and similar. Nonetheless, there is a general consensus that these measures, while crucial to create an appropriate environment conducive to R&D activities, alone are insufficient to overcome existing situations of market failure affecting the overall performance level, and that specific and well-targeted state aid measures are necessary to compensate for the effects of market failure ensuring innovation in a sustainable way. The Commission therefore considers that state interventions in force of State aid for business R&D are appropriate.
- (77) According to information provided by Germany, and in line with its design and orientation, the measure under assessment will to a large extent focus on industrial research projects. Industrial research projects do not normally lead, without further industrial research and experimental developments efforts, to the creation of products which are ready for, or close to the market.
- (78) Against this background, granting a repayable advance, which is by definition a form of aid which involves a certain degree of risk and profit sharing and whose conditions and modalities are defined to reflect the probability of a successful outcome, would not be an appropriate instrument to fund industrial research projects. The Commission considers that grants are an appropriate instrument of aid to support industrial research projects.
- (79) As to the funding of experimental development projects, which, according to the design of the measure is focused on SMEs, the Commission considers grants as an appropriate form of aid since the modalities of a repayable advance are likely to impose a certain degree of uncertainty to the applicants as described in recital 67/70/72 of the present decision. Thus, with a repayable advance being likely to impede relevant R&D activities in the first place, the objective of the scheme would not be met. Against this background, grants appear more appropriate in most situations for smaller and medium-sized projects below the individual notification thresholds. The Commission acknowledged this fact in the relevant provisions of the GBER by not excluding aid in form of grants for projects of experimental development.
- (80) To conclude, the Commission considers the scheme to be designed in a way that it is appropriate.

3.3.5 *Incentive effect*

- (81) R&D aid can only be found compatible with the internal market if the aid has an incentive effect, i.e. the aid must change the behaviour of the beneficiary in such a way that it engages in additional activities, which it would not carry out without the

aid or would carry out in a restricted or different manner, pursuant to point 62 of the RDI Framework.

3.3.5.1 Formal incentive effect

- (82) As a general rule, the Commission considers that an aid has no incentive effect if the works on the relevant RDI activity had already started prior to the aid application by the beneficiary to the national authorities (point 63 of the RDI Framework).
- (83) According to point 64 of the RDI Framework, the aid application under the scheme must include the applicant's name and size, a description of the project, including its location and start and end dates, the amount of public support needed to carry it out, and a list of eligible costs.
- (84) As mentioned in recital 30 of the present decision, the German authorities have confirmed that projects are only considered eligible under the scheme when works on the project were not yet started before the aid decision was issued based on an aid application that itself had to be submitted before the aid could be granted.
- (85) In view of this, the Commission considers that the requirements of the formal incentive effect laid down in points 63 and 64 of the RDI Framework are met.

3.3.5.2 Substantive incentive effect

- (86) According to the criteria set out in section 4.4 of the RDI Framework, the presence of an incentive effect has to be verified at the moment of the application. Accordingly, an incentive effect occurs where the aid changes the behaviour of an undertaking in such a way that it engages in additional activities, which it would not carry out, or would carry out in a restricted or different manner without the aid. The aid must however not subsidize the costs of an activity that an undertaking would anyhow incur and must not compensate for the normal business risk of an economic activity, pursuant to point 63 of the RDI Framework.
- (87) As outlined in recital 31 of the present decision, the German authorities have confirmed that project evaluators will evaluate the substantive incentive effect with objective criteria.
- (88) For each project in the programme, a qualified specialist (aeronautic engineer or specialist with equivalent qualification) will evaluate the incentive effect with objective criteria. The point of departure will be the explanations of the applicant, the essential parts of the application, as well as observations about the project, followed by an analysis of the effects of the aid (in terms of increase in project size, scope, speed and increase of RD expenditure as such).
- (89) The evaluation of the predecessor scheme showed that projects would not have been realized or only realized to a significantly lower extent in term of budget, duration or collaboration with other partners.²⁶ Deadweight effects, on the contrary, are considered to be negligent.²⁷

²⁶ Evaluation report, p 190

²⁷ Evaluation report, pages 6, 19 of the summary of the report and pages 177, 180 of the report

- (90) In view of this, the Commission considers that the design of the scheme guarantees that aid has incentive effect.

3.3.6 Proportionality of the aid

- (91) Pursuant to point 72 of the RDI Framework, for any RDI aid to be considered proportional, its amount must be limited to the minimum needed for carrying out the aided activity.

3.3.6.1 Maximum aid intensities and eligible costs for R&D projects expenditure

- (92) Pursuant to point 73 of the RDI Framework, the aid must be determined in relation to a predefined set of eligible costs and limited to a certain proportion of those eligible costs. The aid intensity as a percentage of eligible costs must be established for each beneficiary of aid, including in a collaboration project. Both the eligible costs and the maximum aid intensities applicable for schemes are laid down in Annexes to the Framework.
- (93) The RDI Framework defines categories of eligible costs for R&D projects in Annex I and the maximum aid intensities, by category of research, in Annex II. For industrial research, 50% aid intensity is allowed, for experimental development 25%, whereby bonuses are available for SMEs and cooperation projects (as laid down in Annex II of the RDI Framework).
- (94) Under the scheme, eligible costs are defined to be those set out in the Framework.
- (95) The scheme sets maximum aid intensities, which are identical or below those set out under the RDI Framework. Under the scheme, for industrial research, a maximum intensity of 65% is available for small firms, of 60% for medium sized firms, and of 50% for large firms, whereas the RDI Framework sets the ceilings at 70%, 60%, and 50%. For experimental development, the scheme applies ceilings of 40%, 35%, and 25%, whereas the RDI Framework requires 45%, 35%, and 25%.
- (96) In line with that point 75 of the RDI Framework, the scheme also requires, that, when an R&D project encompasses different tasks, each eligible task must fall under the categories of fundamental research, industrial research or experimental development.
- (97) In addition, in case a projects consists of different work packages which fall under two or more of the above mentioned categories (see recital 2 of the present decision), the scheme requires that the lowest of the maximum aid intensities shall apply to the project as a whole. The RDI Framework would allow applying a weighted maximum ceiling, depending on the weight of the relevant category in the work package. The relevant provision of the scheme therefore does not only ensure that the maximum allowed aid intensities are not exceeded, but will lead in many cases to situations where the maximum aid intensities available under Annex II off the RDI Framework are not fully exploited.
- (98) The provisions of the scheme are designed in a way that no indirect aid can be transferred from research organisations to undertakings, both in case of collaborative research and contract research (see recital 50 of the present decision).

- (99) In view of this, the Commission concludes that the eligible costs and maximum aid intensities laid down in the scheme are in line with the requirements of the RDI Framework.

3.3.6.2 Cumulation of aid

- (100) According to point 83 of the RDI Framework aid may be awarded concurrently under several aid schemes or cumulated with *ad hoc* aid, provided that the total amount of State aid for an activity or project does not exceed the aid ceilings laid down in this Framework.
- (101) Projects which were selected under the scheme may receive funding from the Länder budgets in addition to the award granted by the Federal level, but this composite funding is subject to the aid intensity ceilings laid down in the scheme.
- (102) The scheme excludes combination of aid under the scheme with other aid (see recitals 32 and 33 of the present decision).
- (103) To conclude, the Commission considers the requirements concerning the cumulation of aid to be complied with.

3.3.7 Avoidance of undue negative effects on competition and trade

- (104) According to point 94 of the RDI Framework, for RDI aid to be compatible with the internal market, the negative effects of the aid measure must be limited and outweighed by the positive effects in terms of contribution to the objective of common interest. In points 95 and 96, the Framework identifies in general terms two main areas of potential distortions caused by RDI aid, namely first, distortions in the innovation process and in the product markets where the R&D results are to be exploited and, second distortion linked to location effects. Section 4.6.1.1 identifies three theories of harm by which the innovation process and product markets could be distorted, namely distortions of the competitive entry and exit processes, distortions of dynamic incentives, and creation and maintenance of market power. Section 4.6.1.2 sets out theory of harm regarding location effects, while 4.6.1.3 identifies situations where no aid can be approved since it would lead to manifest negative effects. For aid schemes, such as the measure at hand, section 4.6.2 identifies the requirements that have to be fulfilled in order to ensure that the negative effects on competition and trade remain limited, in particular where schemes are focusing on certain sectors.

3.3.7.1 Limitation of undue negative effects in case of aid schemes

- (105) Section 4.6.2 of the RDI Framework, following the distortions spelled out in section 4.6.1.1, specifies the requirements under which the negative effects of RDI aid schemes can be considered as being sufficiently limited to be found compatible with the internal market.
- (106) Notifiable aid schemes must not lead to significant distortions of competition and trade and negative effects must be outweighed by the positive effects in terms of contribution to the objective of common interest. On a cumulative basis, aid schemes might still lead to high levels of distortions (in particular, if focusing on certain sectors), even where distortions are considered limited at individual level. Therefore, Member States must demonstrate that any negative effects will be

limited to the minimum taking into account, for example, the size of the projects concerned, the individual and cumulative aid amounts, the number of expected beneficiaries as well as the characteristics of the targeted sectors. Member states are invited to submit any impact assessment as well as ex-post evaluations carried out for similar or predecessor schemes.

- (107) As mentioned in recital 63 of the present decision, the Member State conducted an independent ex post evaluation of the similar predecessor scheme which is based on the experience and feedback by the beneficiaries, covering 2,097 projects that were conducted between 2007 and 2018.²⁸ On average, half of the beneficiaries were large undertakings, the other half being research organisations and SMEs, with a steadily growing share over the reference period. Following the increase of SMEs (for which a higher aid intensity is permitted), the average aid intensity is reported to be 55% throughout the reference period, and has been increasing over time with the increased share of SMEs and collaboration projects.²⁹
- (108) According to the findings of the independent experts who evaluated the impact of the predecessor scheme on a cumulative basis, the aeronautics sector, respectively innovation therein, faces particularly high challenges such as high innovation costs, economic risk and a lack of alternative financing. This is particularly true in view of the growing importance of environmental considerations and political objectives which have to be taken into account by the sector/ OEMs.³⁰ The independent contractor found that the predecessor scheme was designed in a way to appropriately address these considerations.³¹ In addition, the report mentions that in view of the involvement of research organisation in collaborative research projects, significant spill-over effects to other research areas took place.³²
- (109) Furthermore, the expert notes that the (predecessor) scheme funds projects whose results are widely disseminated, and that beneficiaries appreciate the positive network effects of the funding³³.
- (110) The expert also finds that the scheme had a strong positive impact on knowledge transfer: research organisations presented nearly all projects at conferences or by publications in relevant journals, whereas the vast majority of undertakings had their findings discussed in the scientific community. In 30% of cases, beneficiaries filed patent applications. The supported projects involved also a high degree of cross-border cooperation of enterprises and undertakings.³⁴
- (111) Against this background, and taking into account the design of the scheme at hand as described in section 2 of the present decision, the Commission has assessed

²⁸ See page 87 of the Evaluation Report (and page 8 of its summary), available at: https://www.dlr.de/pt-lf/Portaldata/50/Resources/dokumente/evaluierung/Evaluierung_LuFo_2018_Abschlussbericht.pdf.

²⁹ Ibid.

³⁰ See the Evaluation report (page 8 of the summary and pages 6, 147 of the report).

³¹ Evaluation report, page 18 of the summary and page of the 147 report.

³² Evaluation report, page 15-18 of the summary and pages 153, 155, 157 of the report.

³³ Evaluation report, page 15 of the summary and pages 122ff of the report.

³⁴ Evaluation report, page 10 of the summary and pages 123 and 125-126 of the report.

whether the potential negative effects of the scheme in the aeronautics sector remain limited.

(a) Distorting the competitive entry and exit processes

- (112) Pursuant to the theory of harm explained in point 98 of the Framework, R&D&I aid may delay the exit process of inefficient producers if aided, possibly to the detriment of others. Similarly, if not correctly targeted, it might prevent other undertakings from entering the market. In the long run, interfering with the competitive entry and exit processes may thus stifle innovation. In view of the eligibility (e.g. exclusion of firms in difficulty) and selection criteria (see recital 21 of the present decision) and a specific sub-programme that focuses on SMEs and newly created undertakings, the Commission considers that the scheme is designed in a way that does not lead to inefficient competitive entry and exit processes.

(b) Dynamic incentives

- (113) Pursuant to point 99 of the RDI Framework, R&D&I aid may distort the dynamic incentives to invest of competitors of the aid beneficiary. When an undertaking receives aid, the likelihood of successful R&D&I activities on its part generally increases, leading to an increased presence on the relevant product market(s) in the future. That increased presence may lead competitors to reduce the scope of their original investment plans (crowding out effect). This may in particular be the case where aid amounts are high and the supported activity is close to the market.
- (114) In the case at hand, any individual aid amounts exceeding certain thresholds (see recital 16 above) will be notified separately to the Commission. Also, the maximum aid intensities under the scheme are degressive depending on the projects' closeness to the market. There is no indication, taking into account also the high number of projects and beneficiaries and the focus of the overall programme on industrial research³⁵, that competitors in the market segments concerned would have refrained from own research activities and investments.

(c) Creating or maintaining market power

- (115) Pursuant to point 101 of the RDI Framework, aid for R&D&I may also have distortive effects in terms of increasing or maintaining the degree of market power of aid beneficiaries in product markets.
- (116) The scheme is designed to support numerous projects and undertakings, including competing projects, rather than to select a single beneficiary. Any individual aid amount exceeding certain thresholds would be notified and assessed separately. Moreover, the evaluation report indicates that the potential negative competition effects of creating or maintaining market power are rather limited in view of the

³⁵ Industrial research projects are described to aim at the acquisition of new knowledge and skills, see point 15 lit.q) of the RDI Framework. By definition, this does not cover working on close to market solutions. By contrast, it might even be unclear at these early stages which special characteristics the future product might have in detail. Against this background, it seems to be highly unlikely that one undertaking would apply (and receive) funding for an industrial research project envisaging a solution which was already developed by a competitor to a close-to-the-market level. In view of the early stages of the research works, it might even not be possible to compare the envisaged results of a project to close-the-market-solutions at all.

focus of the scheme on long-term impact and innovation rather than short term (economic) success³⁶. In order to allow for a higher participation of SMEs, as recommended in the evaluation report, the possibilities to support SMEs were widened in comparison to the predecessor scheme. In addition, the maximum amount which can be granted to research organisations will be increased in view of the growing demand to ensure spill-over effects, which should also to some extent limit distortions. Therefore, the Commission considers that the scheme is designed in a way that does not contribute to creating or maintaining market power.

- (117) To conclude, the Commission considers the requirements concerning the avoidance of product market distortions to be sufficiently considered at the level of the scheme.

3.3.7.2 Location effects

- (118) Pursuant to point 102 of the RDI Framework, State aid for R&D may affect trade between Member States when it influences the choice of location of the subsequent exploitation project. The scheme under scrutiny, by favouring cross-border cooperation in research, and explicitly allowing, EEA-wide exploitation, is designed in a way that avoids location effects that would be contrary to the common interest.

3.3.7.3 Manifest negative effects

- (119) Section 4.6.1.3 identifies certain situations where the negative effects of the aid manifestly outweigh any positive effects, meaning that aid cannot be found compatible with the internal market.
- (120) In particular, according to the general principles of the Treaty, State aid cannot be considered compatible with the internal market if the aid measure is discriminatory to an extent not justified by its State aid character (see point 104 of the RDI Framework). The Commission will thus not allow any measure where such measure or the conditions attached to it entail a non-severable violation of Union law. This is particularly the case for aid measures where the award of aid is subject to the obligation for the beneficiary to have its central seat in the relevant Member State (or to be predominantly established in that Member State) or to use national products or services, as well as for aid measures restricting the possibility for the beneficiary to exploit the RDI results in other Member States.
- (121) The Commission notes in this context that, under the scheme all undertakings established in the EEA or in Switzerland are eligible, except firms in difficulties in the meaning of the Commission guidelines on State aid for rescuing and restructuring firms in difficulty.³⁷ In addition, beneficiaries may freely choose where to exploit the results within the EEA, and the scheme does not require the use of national products or services.
- (122) Pursuant to point 105, aid that merely leads to a change in location of R&D&I activities within the internal market without changing the nature, size or scope of the project will not be considered compatible. As mentioned in recital 86 of the

³⁶ Evaluation report, see page 18 of the summary and pages 42, 43, 49, 51, 54 of the report.

³⁷ Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty, OJ C 249, 31.07.2014, p. 1

present decision, projects are only eligible if the funding has an impact in the nature, size or scope of the project. In addition, the scheme under scrutiny, by favouring cross-border cooperation in research, and explicitly allowing, EEA-wide exploitation, is designed in a way that avoids location effects that would be contrary to the common interest.

- (123) Therefore, the Commission concludes that the scheme does not entail a non-severable violation of Union law resulting in manifests negative effects.

3.3.7.4 Conclusion

- (124) The Commission notes that the measure under assessment follows with regard to objectives, aid instruments and the involvement of research organisations, to a large extent the approach taken by the evaluated predecessor scheme. Against this background, the need to ensure for a high degree of knowledge transfer, dissemination of results and valuable spill-over effects can be considered to be adequately addressed while limiting undue distortions of competition.
- (125) In the light of the foregoing, more specifically, the consistency between the notified recent and the expired scheme, the Commission notes that the German authorities have demonstrated that the negative effects on competition and trade will be limited to the minimum and the measure yields significant positive effects.

3.3.8 Transparency of the aid

- (126) According to section 4.7 of the RDI Framework, and the Transparency communication³⁸ Member States must publish on a comprehensive State aid website, at national or regional level, at least the following information on individual aid awards above EUR 500 000: the full text of the aid scheme and its implementing provisions or legal basis for individual aid, or a link to it; the identity of the aid awarding authority; the identity of individual beneficiaries; the form and amount of aid awarded to each beneficiary; the date of award; the type of beneficiary (SME or large enterprise); the region in which the beneficiary is located (at NUTS level II); and the principal economic sector in which the beneficiary has its activities (at NACE group level).³⁹
- (127) Such information must be published within six months after the awarding decision has been taken must be kept for at least 10 years and must be available to the general public without restrictions.

³⁸ Communication from the Commission amending the Communications from the Commission on EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks, on Guidelines on regional State aid for 2014-2020, on State aid for films and other audiovisual works, on Guidelines on State aid to promote risk finance investments and on Guidelines on State aid to airports and airlines, OJ C 198, 27 June 2014, p. 30.

³⁹ With the exception of business secrets and other confidential information in duly justified cases and subject to the Commission's agreement (Commission communication of 1.12.2003 on professional secrecy in State aid decisions, C(2003) 4582 (OJ C 297, 9.12.2003, p. 6)). For fiscal measures, the information on individual aid amounts can be provided in the following ranges (in EUR million): [0,5-1]; [1-2]; [2-5]; [5-10]; [10-30]; [30 and more].

(128) The German authorities committed to comply with these requirements. The relevant information will be published on the transparency webpage.⁴⁰

3.3.9 Evaluation

(129) The German authorities, taking into account the best practices recalled in the Commission Staff Working Document on Common methodology for State aid evaluation⁴¹, have notified an evaluation plan for the scheme.

(130) The Commission notes that the scope of the evaluation of this scheme, as described in section 2.11 of the present decision, is defined in an appropriate way. The notified evaluation plan comprises a list of evaluation questions with matched result indicators for each and appropriate methodologies to address the questions. Data sources are individually defined for each question.

(131) The Commission also acknowledges the commitment made by the German authorities to conduct the evaluation, according to the evaluation plan described in the present decision, by an expert independent from the aid awarding authority. The procedures envisaged for selecting such evaluation body are appropriate in terms of independence and skills. Moreover, the proposed modalities for the publication of the evaluation results are adequate to ensure transparency.

(132) Finally, the Commission notes the commitment made by the German authorities to submit the final evaluation report at the latest in June 2024.

4. FINAL OBSERVATIONS

(133) The Commission reminds the German authorities that substantial modifications of the funding conditions in the context of the second and third call have to be notified to the Commission and that the evaluation report of the scheme is to be submitted to the Commission by 30 June 2024. The Commission also invites the German authorities to submit to the Commission a list of successful projects (budget, partners and non-confidential executive summary), after the evaluation of each one of the three envisaged calls. The objective is to improve the collaboration between National R&I programmes and the EU R&I programme.

5. CONCLUSION

(134) 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 TFEU.

(135) Finally, the Commission notes that Germany exceptionally agreed to have the present decision adopted and notified in the English language.

⁴⁰ <https://webgate.ec.europa.eu/competition/transparency/public/search>.

⁴¹ Commission Staff Working Document on Common methodology for State aid evaluation, Brussels, 28.5.2014, SWD (2014) 179 final:
https://ec.europa.eu/competition/state_aid/modernisation/state_aid_evaluation_methodology_en.pdf

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<http://ec.europa.eu/competition/elojade/isef/index.cfm>.

Your request should be sent electronically to the following address:

European Commission,
Directorate-General Competition
State Aid Greffe
B-1049 Brussels
Stateaidgreffe@ec.europa.eu

Yours faithfully,

For the Commission

Margrethe VESTAGER
Executive Vice-President

CERTIFIED COPY
For the Secretary-General,

Jordi AYET PUIGARNAU
Director of the Registry
EUROPEAN COMMISSION