

Funding programme for applied research and experimental development EPSILON

1. Name of programme

Funding programme for applied research and experimental development EPSILON (hereinafter referred to as “programme”).

2. Legal framework for the programme

The programme will be implemented with regard to:

- Act No. 130/2002, on the support of research, experimental development and innovation from public funds and amending certain related laws (Support of Research and Experimental Development and Innovations Act), as amended;
- Act No. 218/2000, on budgetary regulations and amending certain related laws (budgetary regulations);
- **Commission regulation (EU) No 651/2014 of 17th June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty - OJ L 187, 26th June 2014** (hereinafter referred to as “Regulation”), **esp. articles 25, 28 and 29;**
- **Communication from the Commission — Framework for State aid for research and development and innovation - OJ C 198, 27th June 2014** (hereinafter referred to as “Framework”);
- and other related laws and regulations.

The programme is exempt from the notification requirement of Article 108(3) of the Treaty on the Functioning of the European Union, as it complies with the conditions of the Regulation.

This programme excludes payments of individual aid to an undertaking against which a collecting order has been issued in response to a Commission decision declaring the aid illegal and incompatible with the internal market.

The programme will be implemented in accordance with the Updated National Policy on Research, Development and Innovation of the Czech Republic for the years 2009 to 2015 with a view to 2020, approved by Government Resolution No. 294 of 24th April 2013, National Priorities of Oriented Research, Experimental Development and Innovations adopted by Government Resolution No. 552 of 19th July 2012 (hereinafter referred to as “Priorities”), and the national and sectoral strategies.

The programme is divided into three subprogrammes. Implementation and recipients of support will be the same for all subprogrammes.

3. Provider

The aid is to be provided by the Technology Agency of the Czech Republic (hereinafter referred to as “TA CR”) based in Prague.

4. Programme Identification Code

The information system for research, experimental development and innovations registers the programme under the code “TH”.

5. Duration and date of announcement

The programme is supposed to run from 2015 till 2025, i.e. for a period of 11 years.

The call for proposals in applied research and experimental development and innovations (hereinafter referred to as “public tender”) for selecting projects eligible for the programme will first be open in 2014 and the funding will first be distributed in 2015. Subsequent public tenders will be announced every year from 2015 till 2018, with the funding starting in 2016 through 2019. In the period of 2023-2025, evaluation activities will be performed after accomplishing all projects including the application of the results. Therefore, no public funds are requested for 2023-2025.

To ensure effective implementation of the programme, a report on programme implementation will be submitted to the Research, Development and Innovation Council six years after the programme announcement. The report will take into account updated strategic and legislative documents (the relevant regulation of the European Commission, updated Priorities, updated National Policy on Research, Development and Innovation of the Czech Republic, etc.).

The maximum duration of projects under this programme is 48 months. An average length of 36 months can be expected.

Project duration must not exceed the duration of the programme itself.

6. Programme focus

The programme focuses mainly on improving the position of the Czech, and, from a global perspective, also the European industry by supporting projects **falling under the category of applied research according to Article 25(2)(b) and (c) of the Regulation and Article 1(3)(e) of the Framework (including industrial research, experimental development or a combination thereof)**, the results of which have a high potential for rapid application in new products, manufacturing processes and services.

The projects addressed will focus on the following priority areas in particular:

- Competitive knowledge-based economy
- Sustainability of energy and material resources
- An environment for quality life

7. Programme objectives

The aim of the programme is to support projects in applied research, the results of which have a high potential for rapid application in new products, manufacturing processes and services. This will help maintain and develop a global position in technologies, research, development and innovations underpinning the competitiveness in many both existing and emerging fields of industry and other sectors. A tool to achieve this goal is to implement the Priorities defined in accordance with the national and sectoral strategies by supporting projects in which the research objectives of the areas and sub-areas of the priority areas will be accomplished. The objectives for each priority area are set out in the Annex (Chapter 21). The annex also contains the relevant research objectives for the Healthy Population priority area, which can be achieved by implementing the projects under the subprogrammes listed below.

To achieve the goal, the programme is divided into 3 subprogrammes:

Subprogramme 1 - Knowledge Economy

Subprogramme 2 - Energy and Materials

Subprogramme 3 - Environment

The subprogrammes also provide horizontal links between the Priorities and the priority areas.

8. Total expenditure on the programme

The total expenditure on the programme is scheduled for the duration of the programme in accordance with the planned progression of announcements of individual public tenders in research, development

and innovation.

Table 8.1: Programme Budget [mil. CZK]

YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Total expenditure	1 167	2 167	3 133	3 083	3 000	2 167	1 200	233	0	16 150
Public funds	700	1 300	1 880	1 850	1 800	1 300	720	140	0	9 690
Non-public resources	467	867	1 253	1 233	1 200	867	480	93	0	6 460

9. Form, level and amount of support

The maximum allowable rate of aid for the programme as a whole is 60%.

Aid intensity for **each beneficiary** and for **every other participant** shall not exceed the maximum allowable aid rate determined by the Regulation. For each public tender, an individual maximum permissible aid intensity per individual project will be determined as an average value for all recipients. In compliance with the Regulation, it is possible to provide bonuses for fulfilling the conditions of effective collaboration under Article 25(6)(b)(i). Applicants will be required to participate in the financing of the costs.

The maximum allowable aid intensity rates for **industrial** research and experimental development and individual categories of participants are listed in the following table:

Table 9.1: Maximum allowable funding intensity rates for industrial research and experimental development and individual categories of participants

Participant	<u>Industrial</u> research		Experimental development	
	Maximum allowable aid intensity, incl. bonuses for small and medium-sized enterprises	Maximum allowable aid intensity with demonstrated effective collaboration with a research organisation	Maximum allowable aid intensity, incl. bonuses for small and medium-sized enterprises	Maximum allowable aid intensity with demonstrated effective collaboration with a research organisation
Small enterprises*	70%	80%	45%	60%
Medium-sized enterprises*	60%	75%	35%	50%
Large enterprises*	50%	65%	25%	40%
Research** organisations	100% ¹⁾	100% ¹⁾	100% ¹⁾	100% ¹⁾

* Note: An SME is defined in Annex 1 of the Regulation

** The indicated funding intensity refers to research organisations' non-economic activities

¹⁾ Whilst respecting the maximum permissible funding intensity per project to be set individually for each public tender.

Pursuant to **Article 25(5)** of the Regulation, for aids provided to research and development projects carried out in cooperation between research organisations and enterprises, the total aid resulting from direct government support of a specific project and contributions from research organisations constituting aid must not exceed the maximum allowable aid rate for any enterprise receiving the aid.

In relation to the focus of the programme and the experience from previous programmes supporting applied research from public funds, an average amount of aid from public funds of CZK 10 million per project is expected.

The maximum amount of financial support from public sources spent is limited to € 3 million per project (calculated according to the exchange rate of the European Central Bank in force on the date of granting the aid for the project).

Information on each aid granted and exceeding 500,000. EUR (calculated according to the ECB rate applicable on the date of granting of the aid to the projects under this programme for the relevant year) shall be published in accordance with Regulation Article 9(1)(c).

10. Subprogrammes

All subprogrammes will be focused on industrial applications using new technologies and new materials, as well as energy, environment and transport applications.

10.1. Subprogramme 1 - Knowledge Economy

The Knowledge Economy (SP1) subprogramme focuses in particular on meeting the research objectives of the Competitive Knowledge Economy priority area. The aim in this area is to ensure the transfer and use of new knowledge in the application sphere and use research and development to increase the chances of sustainability of the sectors deeply rooted in the Czech economy. It is not only about trying to preserve the current state of the economy, or even ensuring the survival of companies in their present form, but to facilitate their adaptation to anticipated changes of both the internal and the external environment. Another research and development objective in this subprogramme is to improve the system of management and the parameters of products, services and processes to that increase their safety and reliability. At the same time, it is expected to reduce the social costs resulting from the failure of products, services and processes. Support for this subprogramme will create conditions for using the existing and a timely identification of new opportunities for strengthening the competitiveness of the Czech Republic.

The research objectives for the subprogramme are set out in the Annex (Chapter 21, Table 21.1).

Table 10.1: Expenditure on subprogramme [mil. CZK]

YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Total expenditure	421	781	1 127	1 109	1 080	781	432	83	0	5 814
Public funds	252	468	676	666	648	468	260	50	0	3 488
Non-public resources	169	313	451	443	432	313	172	33	0	2 326

10.2. Subprogramme 2 - Energy and Materials

The Energy and Materials subprogramme (SP2) is aimed at achieving a long-term sustainable energy mix based on a wide portfolio of resources, with the preferred use of all available domestic energy sources, an increased energy self-sufficiency and ensuring the energy security of the Czech Republic. The applied research carried out under this subprogramme aims to support a shift towards a less resource-intensive, low-carbon society that uses all resources efficiently. By separating the dynamics of economic growth from the consumption of resources and energy, the aim is also to reduce CO₂ emissions, increase the competitiveness and promote a greater energy security of the Czech Republic. The objective in the field of transport is to create the conditions for the development of a quality transport system based on the technical, economic and technological characteristics of individual modes of transport, on the principles of economic competition with regard to its economic and social impacts and its impact on the environment and public health. The subprogramme will further support the shift towards a less resource-intensive and low-carbon society that uses all sources efficiently. The

objective of the subprogramme is also to achieve a sustainable and competitive material economy and production with minimum environmental impact of material flows and the use of all resources and the implementation of technological changes leading to a reduced use of materials with high production energy demands.

The research objectives for the subprogramme are set out in the Annex (Chapter 21, Table 21.2).

Table 10.2: Expenditure on subprogramme [mil. CZK]

YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Total expenditure	373	693	1 003	987	960	693	384	75	0	5 168
Public funds	224	416	602	592	576	416	230	45	0	3 101
Non-public resources	149	277	401	395	384	277	154	30	0	2 067

10.3. Subprogramme 3 - Environment

The Environment subprogramme (SP3) focuses in particular on reducing the negative impacts of human activities, providing redress and removing damage plus monitoring changes in the quality of the environment. The aim of this subprogramme is to support applied research aimed at reducing the energy intensity of technologies, technological processes and equipment leading to the reduction of pollutant emissions, climate change scenarios and the identification and monitoring of its impacts. It further focuses on the thematic preference of applied research and experimental development in the fields of knowledge and evaluation of anthropogenic impacts on individual components of the environment, support of biodiversity research, ecosystem services and functions and analyses focused on the cost effectiveness of environmental measures. There is also great potential for the protection and improvement of the environment and sustainable development in new technologies, especially environmentally friendly technologies.

The research objectives for the subprogramme are set out in the Annex (Chapter 21, Table 21.3).

Table 10.3: Expenditure on subprogramme [mil. CZK]

YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Total expenditure	373	693	1 003	987	960	693	384	75	0	5 168
Public funds	224	416	602	592	576	416	230	45	0	3 101
Non-public resources	149	277	401	395	384	277	154	30	0	2 067

11. Beneficiaries of the funding

Eligible beneficiaries of funding for projects under all subprogrammes pursuant to the Support of Research and Experimental Development and Innovations Act, the Framework and the Regulation:

Businesses - legal and natural persons who, according to Annex 1 of the Regulation, are engaged in an economic activity and carry out the project alone or in collaboration with other participants and demonstrate the ability to co-finance the project from non-public sources.

Research and knowledge dissemination organisations (hereinafter referred to as “research organisations”) - legal entities that meet the definition of research organisation pursuant to **Article 2(83) of the Regulation** and which manage the project alone or in collaboration with other participants, demonstrate the ability to co-finance the project from non-public sources, and have a system for putting the results to practice.

Assessing whether an applicant fulfils the defining parameters of a research organisation under the Framework will be performed by the provider on an individual basis for each project applicant during

initial project evaluation and after completion. Compliance with the definition of a research organisation according to the Framework will be verified against the statutes, the constitution or foundation charter of the applicant or other participant, proof of separate accounting for economic and non-economic activities and verification of the absence of priority access to results or research capacities (not only in relation to the project in question).

12. Eligibility of applicants

Only those applicants who meet the eligibility conditions set out in Section 18 of the Support of Research and Experimental Development and Innovations Act can obtain funding for a project implemented under the programme. If more than one applicants are involved in one project, eligibility must be proven for all of them. Eligibility shall be substantiated by the applicant in accordance with the Support of Research and Experimental Development and Innovations Act, as determined by the Provider in the public tender specification.

13. Eligible and recognized costs

The aid will be granted against the eligible costs of the project, i.e. the eligible costs which the provider approves and which are justified. The applicant may suggest costs defined in accordance with the Support of Research and Experimental Development and Innovations Act and the Regulation. **Pursuant to Regulation Article 25(3), the eligible costs of research and development projects shall be allocated to a specific category of research and development and shall be the following:**

- a) **personnel costs: researchers, technicians and other supporting staff to the extent employed on the project;**
- b) **costs of instruments and equipment to the extent and for the period used for the project. Where such instruments and equipment are not used for their full life for the project, only the depreciation costs corresponding to the life of the project, as calculated on the basis of generally accepted accounting principles are considered as eligible.**
- c) **Costs of contractual research, knowledge and patents bought or licensed from outside sources at arm's length conditions, as well as costs of consultancy and equivalent services used exclusively for the project;**
- d) **additional overheads and other operating expenses, including costs of materials, supplies and similar products, incurred directly as a result of the project.**

Under Regulation Article 28, in the case of innovation aid for small and medium-sized enterprises subject to the conditions in Article 28(3) and (4), the following costs are eligible:

- a) **costs for obtaining, validating and defending patents and other intangible assets;**
- b) **costs for secondment of highly qualified personnel from a research and knowledge-dissemination organization or a large enterprise, working on research, development and innovation activities in a newly created function within the beneficiary and not replacing other personnel;**
- c) **costs for innovation advisory and support services**

Under Regulation Article 29(3), in the case of aid for process and organisational innovation, subject to the conditions in Article 29(2) and (4), the following costs are eligible:

- a) **personnel costs;**
- b) **costs of instruments, equipment, buildings and land to the extent and for the period used for the project;**
- c) **costs of contractual research, knowledge and patents bought or licensed from outside sources at arm's length conditions;**

- d) **additional overheads and other operating costs, including costs of materials, supplies and similar products, incurred directly as a result of the project.**

14. Comparison of the current situation in the Czech Republic and abroad

One of the main prerequisites for increasing the competitiveness of both companies and the economies of advanced countries is the ability to create and use the new results of applied research. With the growing competition in a globalized market, the ability to adapt quickly to new technologies and processes and apply this new knowledge commercially has become the key aspect of economic growth.

The global environment is clearly changing rapidly and the objectives of smart and sustainable growth are becoming, especially for the European market, challenges and opportunities. In this context, the Czech Republic also needs to accelerate innovation while transforming the accumulated knowledge in research and development to support and improve the existing products, services and markets and to create new ones.

In the past years, the Czech Republic has gradually lost the competitive advantage consisting of a lower price of production through lower production costs, especially labour costs. In the long run, the Czech Republic has the fastest growth in unit labour costs within the EU27. While in the EU27 average unit labour costs decreased by more than 5% between 1995 and 2011, they grew by more than 11 % in the Czech Republic over the same period. At the same time, the Czech Republic chose a slow shift towards a more sophisticated production, which would make it possible to offset this change in terms of its impact on the economy's position. This process is the result of the otherwise welcomed approximation of the level of economic development to our natural partners, i.e. the countries of Western Europe, and is ongoing, albeit unevenly, most of the time since the start of the economic transformation.

From the point of view of individual groups of factors of competitiveness, the Czech Republic has a relatively good position among the factors showing technological readiness (31st place), qualitative business conditions (35th) and environment for innovation (34th). In the ranking of countries according to the level of competitiveness measured by the Global Competitiveness Index, the Czech Republic occupies 39th place.

Nevertheless, the Czech Republic lags behind the world and European leaders substantially (USA, Japan, or Finland, for instance, from among EU27). An important step towards strengthening the position of the Czech Republic is to raise Czech research teams up to a global level and develop the potential of Czech research organisations and companies to rank among the global leaders in their individual fields. Although the Czech Republic has come a long way in recent years and is approaching the European average in many R&D indicators (such as the share of private and public investment, where the Czech Republic ranked 13th in the EU27 in 2009), it still falls behind from the broader point of view of overall competitiveness.

To achieve a leading position in global competition with a strong technological base and industrial capabilities, investment in research and development of new technologies, advanced materials, competitive and sustainable energy and transport, including the potential of a healthy environment, needs to be strengthened. Given that the Czech Republic wants to consolidate and even strengthen its position not only in the European market, it is essential to invest in applied research, focusing on cooperation between the private sector and research organisations.

Listed below are examples of programmes and procedures in research and development to increase competitiveness in selected EU countries to strengthen the cooperation between the private sector and research organisations.

Finland: The Finnish Agency for Technology and Innovation (TEKES), under the Ministry of Employment and Economy, finances applied research and development programmes focusing on industrial enterprises, universities and public research institutions. The programmes funded from TEKES are not created through central strategic planning; the initiative for their creation usually comes from universities, research institutions, businesses, industrial associations, etc. The

programmes are used as financial tools to direct the research and development potential of companies, research institutions and universities into selected technologies, priority areas, or similarly predefined goals. The Finnish Innovation Fund (SITRA), which manages research programmes in areas that are crucial for Finland's competitiveness and economic growth, also provides thematic support for research and development. At present, SITRA actively focuses on 6 areas: Business, Business, Countryside, Energy, Future, Leadership, and Municipality. SITRA programmes not only provide R&D funding, but some of them (e.g. Energy) also allow venture capital to flow into companies with advanced technologies and services. Aid is intended both for private companies and public research institutions and universities.

Austria: The Research Support Agency (FFG) is the central and largest implementation agency to support applied research and innovation. The Agency is jointly owned by the Ministry of Transport, Innovation and Technology (BMVIT) and the Ministry of Economy, Family and Youth (BMWFJ). The dominant beneficiary of aid implemented by the FFG is the business sector, which absorbs more than three quarters of all funds. Projects are delivered and implemented by businesses either individually or in collaboration with research organisations. The basic programmes to support applied research, funded by the FFG, are the most important tool for supporting industrial R&D projects in Austria. Structural programmes are programmes funded by the FFG to support research and innovation infrastructure, improve cooperation between universities and the industry, or enhance the innovation potential of individual regions. Among this type of programmes are, for example, the AplusB programme to support academic spin-off companies focusing on advanced technologies, or the COMET programme to support pools of excellence. Programmes focusing on selected national priority areas of research or areas of strategic importance for the economic and social development of the country are initiated and "owned" by individual ministries responsible for R&D and managed by one of the implementation agencies, mostly FFG. At present, there are about 15 thematic programmes covering several dozen subareas (subpriorities). Programmes funded by AWS (Austria Wirtschaftsservice GmbH), a 100% state-owned banking institution (over 50% of the Agency's shares are held by the Ministry of Transport, Innovation and Technology, BMVIT) are designed to support innovation in the corporate sector.

Sweden: The main beneficiaries of R&D support provided by the VINNOVA agency are businesses, but projects are usually implemented in close cooperation with universities and research institutions. In providing support, VINNOVA (in line with the Ministry of Trade, Energy and Communications) adopts the so-called sectoral approach to support selected advanced fields of the Swedish industry - focusing in particular on supporting research in technology, transport and the working environment. Support for research projects is provided up to a maximum of 50% to ensure that research actually meets the needs of the holder(s) of the project. At the same time, this approach increases the leverage on public funds. Among other agencies focusing on supporting targeted research are the Swedish National Space Board (SNSB) and the Swedish Energy Agency (STEM), which are more specialized. Universities and public research institutions support centres of competence with significant involvement in the industry. The funding institutions are the VINNOVA agency, the Swedish Research Council, the Fund for Strategic Research and the Knowledge Fund.

United Kingdom: R&D targeted funds are distributed in the UK mainly through competitive project financing and government contracts for research and development. Most of the "responsive mode funding" is provided through grants and programmes of individual Research Councils. Most of the remaining targeted support falls within a broad range of innovation aid, including various tools supporting the transfer of knowledge and tax relief for research and development. These tools are intended for a diverse group of research entities, with the predominance of the private sector. The most important instrument of targeted support for corporate R&D is the Smart programme, funded by the *Department of Business, Innovation and Skills* and targeted exclusively at SMEs. The range of tools is aimed at linking the public and private sectors and creating "research networks" by directing new research ideas into new technologies, products, processes and services. To quote an example, there is the *Technology Strategy Board* with Knowledge Transfer Networks, Collaborative R&D and Knowledge Transfer Partnerships. These programmes are designed for private companies as well as university and public research institutions, technology and innovation centres or various associations (such as chambers of commerce, etc.). The most important source of government funding for corporate R&D is indirect support provided through R&D tax relief.

The Netherlands: Programmes to support applied R&D, funded by NL Agency, the government agency under the Ministry of Economy, Agriculture and Innovation (EL&I). The NL Agency programmes cover several thematic areas: energy and climate, environment, innovation, international cooperation. Most of these programmes stimulate public-private partnerships for R&D. Programmes supporting the use of research results in the private sector and the creation of innovation - such as the Innovative Vouchers for Private Enterprises programme, funded by the Ministry of Economy, Agriculture and Innovation.

15. Incentive effect

As a provider and in order to meet the objectives of the Programme and the conditions of the Regulation, TA CR will assess the presence of the incentive effect of the aid under Article 6 of the Regulation as part of the initial evaluation of projects. The beneficiary shall submit a written application for the aid before work on the project or activity starts. The application for the aid must comply with the requirements of Article 6(2) of the Regulation. All recipients must submit a project proposal before starting work. The incentive effect will be assessed for beneficiaries as well as for other participants collectively for the whole project in the sense that the funding will contribute to a larger scope of the project, more ambitious objectives, a higher financial participation of the enterprises in the project or shorter deadlines compared to the same without the funding, or, especially with small enterprises, making the participation itself possible at all. The assessment of the incentive effect will be part of the evaluation report prepared by the expert advisory body, which will be established by the provider for the evaluation of project proposals.

16. Expected results and benefits of the programme

Only projects that can reasonably be expected to accomplish at least one of the following types of results (categorization according to the result information register) can be supported under this programme:

P - patent;

G - technically realized results - prototype, functional sample;

Z - pilot plant, proven technology;

R - software;

F - industrial and utility model;

N - Certified methodologies, procedures and specialized maps with professional content.

Results not to be recognized by the provider as a single result of a given project, but only in combination with at least one other result listed in the list of result types above:

H - results reflected in the legislation and standards and the reflected in non-legislative directives and regulations binding within the competence of the respective provider.

Among the expected benefits of the programme are mainly the improvement of the quality and number of R&D results that will be put to practice in the form of products, services and manufacturing procedures. These innovations will then also show as a secondary effect in improving the supported entities' indicators (e.g. growth in turnover, export, etc.). For collaborating research organisations, the benefits will materialize, for example, in an increased number of results applied, in the number of patents commercialized and a growing commercialization potential. Another secondary effect can be seen in strengthening the effective transfer of know-how and technologies into practice.

17. General criteria for the evaluation of project proposals

17.1. Compliance with the conditions of the public tender

In accordance with the rules laid down by the Support of Research and Experimental Development and Innovations Act, the Provider shall appoint a commission to receive the project proposals. The commission shall verify whether all of the conditions for admitting the project proposals in the public

tender for research, development and innovation have been met, namely:

- Adherence to the formal conditions for the submission of a project proposal specified in the public tender,
- Demonstration of the candidate's and other participants' eligibility.

Failure to comply with any of the above conditions will result in a refusal to accept the project proposal in the public tender for research, development and innovations.

Evaluation of the content of project proposals

Project proposals will be comprehensively evaluated in accordance with the Support of Research and Experimental Development and Innovations Act. In order to evaluate the project proposals admitted to the public tender, the provider shall establish a professional advisory body.

Criteria for project selection:

A) Binary

- The project proposal is a project of applied research.
- The project proposal is in line with the focus and objectives of the programme and the selected subprogramme and with the conditions of the tender.
- The project proposal relates to a specific goal or goals from among the Priorities.
- The nature of the project proposal or part of it has not been known or administered as part of another project or activity benefiting from public funds targeted at research, development and innovation and/or the project proposal or part of it is currently not subject to any other project proposal or other activity.
- The funding granted must not be used to finance activities that are required by law or other regulations and which would have to be implemented by the beneficiary anyway (i.e. without aid).
- The participants have demonstrated the required co-financing for the project and maintained the maximum allowable aid intensity.
- The beneficiary has demonstrated that the project will generate at least one applied result from among the set of eligible results, and that it will be implemented within three years after completion of the project.
- The duration of the project is in line with the programme.

B) Scoring

- Application and market potential of the expected R&D results.
- Research, innovation and application overlay or complementarity of the project with projects already supported.
- Economic efficiency of the project (proportionality of the project timetable and proportionality of the proposed total costs of the project).
- Quality, up-to-dateness, novelty, and feasibility of the research agenda.
- Economic competence of the applicant.
- Organization of project activities.
- Consistency with priority areas and sub-areas.
- Scope of incentive effect of the aid.
- Risk analysis of the project.
- Research team capacities.
- Expected benefits of the project in terms of programme objectives.
- Effective collaboration between businesses and research organisations.

The methodology for project evaluation and the points and thresholds for the individual evaluation criteria are set out in the tender specification for each tender.

To exclude possible overlaps of projects covering the priority area of "Healthy population" under this programme with the programmes of the Ministry of Health (MH), specific public tenders will be set

up in cooperation between TA CR and MH. MH representatives shall be members of the expert advisory body for the evaluation of project proposals.

17.2. Interim evaluation of admitted projects

Interim evaluations of project progression will be carried out regularly throughout the project lifetime and are intended to prevent the funding of projects failing to meet the agreed schedule and address the objectives set in the approved project proposal. Evaluations will be made by the provider on the basis of the report submitted by the beneficiary, or by checking the material performance of the project. The interim evaluation of the results will determine whether the project is to continue to receive funding, to be limited or to be stopped.

Due to the nature of supported projects, special consideration will be given to the commercial use of prototypes and pilot projects being developed in the course of the project. In such a case, any revenue from this business use will be deducted from the eligible costs. The interim evaluation shall also assess the fulfilment of the obligations to provide information to the information system for research, development and innovation (pursuant to section 31 of the Support of Research and Experimental Development and Innovations Act).

During the project development, beneficiaries of the public financial aid shall be subject to control pursuant to section 13 of the Support of Research and Experimental Development and Innovations Act.

17.3. Evaluation of project results

a) Evaluation in Final Report

The results accomplished in the project shall be evaluated in the final report on the project solution.

Project solutions are evaluated in three categories:

Category A: The project has met the objectives defined.

Category B: The project has not met the objectives defined for reasons that neither the provider nor the beneficiary could have foreseen.

Category C: The project has not met the objectives defined.

The final project report in particular, including the Implementation Plan, and the Contract on the Use of Results (pursuant to Section 11 of the Support of Research and Experimental Development and Innovations Act) and on the Provider's Inspection will be used to evaluate the objectives. An implementation plan, covering the 3 year period after project completion, shall be required upon project completion. The beneficiary shall be required to report regularly on the practical impacts of the project implementation and the economic benefits of the results.

b) Assessment of the practical impacts of project implementation

As the programme supports applied research projects with practical implications for innovation, the beneficiaries will be required to submit a contract on the use of the results before completing the project and, in the final project report, describe a plan for the implementation of the results achieved. Within three years of project completion, the beneficiaries of the funding shall be required to notify the provider of the practical implications of putting the project results in practice, as set out in the implementation plan.

c) Assessment of the fulfilment of the legal conditions concerning funding of research, experimental development and innovation

The final evaluation will assess the beneficiary's fulfilment of obligations to provide information to the information system for research, experimental development and innovation (pursuant to section 31 of the Support of Research and Experimental Development and Innovations Act).

18. Expected programme parameters

With regard to the overall programme budget, at least 800 admitted projects are foreseen. The programme assumes the participation of at least 1,600 entities in the projects, in the following structure:

Table 18.1: Expected programme parameters

	Number	share
Total	1600	100 %
Small and medium-sized enterprises	512	32%
Large enterprises*	288	18%
Research organisations	800	50%

19. Criteria for meeting programme objectives

The achievement of the main and the partial objectives of the programme shall be evaluated in accordance with the Methodology for evaluating the results of the research organisations and the results of the completed programmes valid at the time of evaluation of the programme, or the conditions set by the provider. Achieving the objectives of the programme shall be evaluated on the basis of a set of indicators designed to monitor the progress of programme implementation and to evaluate its overall performance and success. The selection and setting of indicators shall also respect the requirement to ensure and monitor the incentive effect of the aid in compliance with the Framework.

The indicators are divided into four categories by their nature, namely programme implementation, programme results, programme objectives, and incentive effect:

Table 19.1: Indicators

Indicator	Number
Programme implementation	
Minimum number of projects selected (supported)	800
Minimum number of projects administered in collaboration of businesses and research organisations	720
Minimum number of successfully completed projects, total	640
A minimum of 80% of projects shall be completed successfully	
Programme Results	
Minimum number of patents	50
Minimum number of utility models and industrial designs	200
Minimum number of pilot plants and proven technologies	300
Minimum number of prototypes and functional samples	150
Minimum number of software	50
Minimum number of certified methodologies, procedures and specialized maps with professional content	45
Minimum number of results reflected in legislation and standards and non-legislative directives and provisions	5
Minimum number of programme results applied	800
Programme objectives	

At least 75% of the programme objectives shall be achieved	
Incentive effect	
Minimum share of non-public resources in total programme expenditure	40%

20. Evaluating the benefits of the programme

In accordance with the Methodology for evaluating the results of the research organisations and the results of the completed programmes valid upon programme completion, its benefits for the Czech Republic and its competitiveness shall then also be evaluated. The benefits will be assessed in relation to the programme objectives in particular.

The expected benefits of the programme shall be assessed in particular by:

- The number of ideas proven to be applicable;
- The number of results of research organisations applied;
- The number of new and improved products and services marketed, the number of new and improved manufacturing processes introduced and the associated interannual growth in revenue (turnover) for the users;
- The interannual increase in beneficiaries' turnover;
- The total number of applied R&D results;
- The number of patents resulting from the research and commercialized in the form of product or process innovation or licensing;
- The revenues obtained based on these commercialized patents;
- The number of licenses to the results of projects offered by research organisations;
- The number of license agreements concluded and the amount of royalties;
- The revenues generated by the sale and use of prototypes;
- The number of verified and implemented functional prototypes based on the experimental development conducted;
- The number of new pilot plants;
- The number of transfers of know-how and technologies from research organisations to enterprises;
- The volume of corporate investment in the R&D sector.

21. Annex

The programme aims primarily to support new features of products through new materials and technologies in various fields of economic activity so that the products become globally competitive. The current list of areas with high potential includes, among others, the development of new, advanced materials, the development of biotechnologies and nanotechnologies, space technologies and the means of transport of the future.

Table 1: Structure of the priority area Competitive knowledge-based economy

Priority area	Subarea	R&D Targets
1. Application of new findings from the area of General Purpose Technologies	1.1 GPTs for innovations of processes, products and services	<p>1.1.1 To gain new utility values of the products by using new findings from area of GPTs</p> <p>1.1.2 To improve efficiency, safety, sustainability and reliability of processes (including lowering of energy intensity and costs of material) by using GPTs</p> <p>1.1.3 To streamline offered services and processes in direct services by using GPTs</p> <p>1.1.4 To streamline offered services and processes in the public sector by using GPTs</p>
2. Strengthening of sustainability of production and other economic activities	2.1 Economy, efficiency and adaptability	<p>2.1.1 To increase economy, efficiency and adaptability in transport - transport and handling systems and vehicles production to make these areas globally competitive</p> <p>2.1.2 To improve economy, efficiency and adaptability in industries to empower global competitiveness in this area</p> <p>2.1.3 To improve economy, efficiency and adaptability in electrical engineering, including IT industry and services to empower global competitiveness in this area</p> <p>2.1.4 To improve adaptability of products by cross departmental</p>
	2.2 Use values of products and services	<p>2.2.1 To innovate products in the branches important for export by joint activities of manufacturing and research areas</p> <p>2.2.2 To improve competitiveness of products and services by improving their use values</p>
3. Strengthening of safety and reliability	3.1 Safety and reliability of products and services	<p>3.1.1 To establish complex policy to safety and reliability of products and services</p>

		3.1.2 To improve reliability and safety of network systems by development and introduction of smart networks
	3.2 Safety and reliability of processes	3.2.1 To gain permanently high degree of the data protection and communication security in a dynamically changing environment
		3.2.2 To increase use and quality of autopilots and automation
		3.2.3 To increase quality of process monitoring and early warning systems
		3.2.4 To increase security and reliability of processes by using simulator and virtual reality means to gain significant reduction of both direct and indirect costs caused by their failures
4. Maping and analysis of competitive advantages	4.1 Identification of the new opportunities of competitive advantage	4.1.1 Actual identification of the economic opportunity by the continuous global trends monitoring and scoring

Table 2: Structure of the priority area Sustainability of energetics and material resources

Priority area	Subarea	R&D Targets
1. Sustainable energetics	1.1 Renewable resources of the energy	1.1.1 Development of the economically efficient solar energetics 1.1.2 Development of the economically efficient geothermal energetics 1.1.3 Development of the economically efficient use of the biomass
	1.2 Nuclear resources of the energy	1.2.1 Efficient long-term use of nowadays nuclear power plants 1.2.2 Support of the security of the nuclear facilities 1.2.3 Research ensuring support of the construction and running of the new economically efficient and secure blocks

		1.2.4 Research and development of the fuel cycle
		1.2.5 Deposition of the nuclear waste and used combustibles
		1.2.6 Research and development in the area of reactor of the IV generation, mostly effective and secure fast reactors
	1.3 Fossil resources of the energy	1.3.1 Economically efficient and ecological fossil energetics and heating industry
	1.4 Power lines including power accumulation	1.4.1 Capacity, reliability and safety of the spinal power lines
		1.4.2 Modification of the lines for the „demand-side management“
		1.4.3 Power accumulation including use of the hydro
		1.4.4 Safety and durability of the power lines
	1.5 Production and distribution of the heat / coldness including cogeneration and trigeneration	1.5.1 Heat withdrawal from power stations in the basic load
		1.5.2 Effective cogeneration (trigeneration) in SCZT sources in works with partial load (system services)
		1.5.3 Distributed combined production of the energy, heat and coldness from every kind of resources
		1.5.4 Transport and accumulation of the heat
		1.5.5 Efficient management of the modification of the indoor environs
		1.5.6 Alternative resources - exploitation of wastes
	1.6 Energy in the transport	1.6.1 To increase the quotient of the agro fuel as a compensation for the

		<p>1.6.2 To increase the quotient of the use of the electric energy in the transport as a compensation for fossil sources</p> <p>1.6.3 To establish in the perspective the use of hydrogen as a transport power source</p>
	<p>1.7 System development of the Czech energetics in the context of the development of the EU energetics</p>	<p>1.7.1 System analysis for the support of the balanced state energetics conception (SEC), another related strategic documents of the state and regional developing concepts considering the EU frame</p> <p>1.7.2 Integral conception of the development of the municipalities and regions with the verification with the demo projects (linked to the SET Plan –Smart Cities and Smart Regions)</p>
2. Lowering the energetic demands of the economy	<p>2.1 Lowering the energetic demands of the economy</p>	<p>2.1.1 Energy budget of the materials and fuels for the whole stroke</p> <p>2.1.2 Research and development of the new energy saving industrial technologies</p> <p>2.1.3 Increases in the use values and durability of the buildings</p>
	<p>2.2 New technologies and processes with a potential utilisation in the economy</p>	<p>2.2.1 Participation of the R&D in the international activities in the area of the utilisation of the nuclear fusion</p> <p>2.2.2 New methods and procedures in the area of the diagnostic to increase the reliability, security and durability of the energy devices</p> <p>2.2.3 Biotechnology, bioengineering and genetics</p>
3. Material base	<p>3.1 Advanced materials</p>	<p>3.1.1 Long-term perspective of the provision of the raw materials for the economy of the Czech Republic</p>

		3.1.2 Advanced materials for the competitiveness
		3.1.3 Innovation and sustainability of the classical materials
		3.1.4 Use of the nanomaterials and nanotechnologies

Table 3: Structure of the priority area Environment for quality life

Priority area	Subarea	R&D Targets
1. Natural resources	1.1 Biodiversity	1.1.1 Increase of the long-term efficiency of the particular territorial natural and landscape preservation leading to the support of the metapopulations of decreasing threatened species and species with the focal point of occurrence in the biotopes created or strongly influenced by humans
		1.1.2 Formation of the efficient kinds of measures to maintain natural associations and natural biotopes of species
		1.1.3 Valuation of the impact of the plant and animal invasions and development of the instruments for their limitation
		1.1.4 Valuation, survey and categorization of ecosystem services including creation of the instruments for valuation of their fact accuracy and practical utility
	1.2 Water	1.2.1 Reduction of the water pollution from point and non-point sources and the sustainable use of the water resources
	1.3 Soil	1.3.1 Increase of the content of the stable organic mass and the support of functional

		diversity of soil organisms with collateral maintenance of the productivity character of soil
		1.3.3 Increase of the retention ability of the wetland soil and implementing of the retention zones
	1.4 Air	1.4.1 Limitation of the emissions of polluting substances from anthropogenic sources 1.4.2 Gadgetry of the spread and deposition of the polluting substances
	1.5 Mineral deposits and effects of mining on the environment	1.5.1 Enforcement of the sustainability of the procurement with mineral primary commodities
2. Global changes	2.1 Methods of mitigation and adaptation for global and local changes	2.1.1 Proposition of the adaptive measures in the particular sector of the economy of the Czech Republic and proposition of the instruments for GHG emissions lowering
	2.2 Biogeochemical cycles of nitrogen and phosphorus	2.2.1 Optimisation of the streams of the reactive forms of nitrogen and phosphorus (Nr a Pr)
	2.3 Dangerous substances in the natural environment	2.3.1 Natural environment and health
3. Sustainable development of landscape and settlements	3.1 Green infrastructure - stable structure of the landscape	3.1.1 Creation of the conceptual instruments of the landscape planning
	3.2 Agriculture and forestry	3.2.1 Acquisition of practically useful information for effective agricultural production in the ecologically and economically long-term sustainable
	3.3 Urbanism and intelligent human settlements	3.3.1 Design of modern methods and systems of construction and keeping of the intelligent human settlements with minimum impacts on the environment

4. Environmental technologies and eco-innovations	4.1 Environment-friendly technologies, techniques and materials	4.1.1 Technologies and products increasing complex efficiency of the exploitation of primary sources
	4.2 Biotechnology, material, energetic and emissive efficient technologies, products and services	4.2.1 To gain qualitatively new primal product by using biotechnological methods 4.2.2 To prepare biotechnological methods for the complex wasteless use of the biomass
	4.3 Minimisation of the waste production and their re-use	4.3.1 New recycling technologies - their output being substances with comparable quality to the input raw materials 4.3.2 New effective methods of energetic use of wastes with a minimisation of the negative environmental influences
	4.4 Removing of the dangerous substances - old damages from the environment	4.4.1 Increase of the efficiency of the redevelopment technologies and introduce of the new methods of redevelopment
	4.5 Minimisation of the chemical substances risk	4.5.1 Technology for the minimisation of the risks of the POPs, toxic metals, hormonal disruptors, pharmaceutical residuals, pesticides and another pollutants for the human health and 4.5.2 Technologies for replacement of the risk substances under the REACH legislation and replacement of the dangerous substances by less harmful
5. Environment-friendly society	5.1 Patterns of consumption of the population	5.1.1 To develop efficient methods for the change of patterns of consumption in the direction of minimisation of the effects of consumption on the stable function of natural resources and ecosystem services
	5.2 Measures of the environment-friendly growth	5.2.1 To design innovative instruments of the environmental preservation

		with the target of minimisation of the costs of their functioning
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Table 4: Structure of the priority area Healthy population

Priority area	Subarea	R&D Targets
1. Origin and development of diseases	1.2 Circulatory system diseases	1.2.2. Development of early diagnostics of cardiovascular and cerebrovascular diseases and discovery of therapeutic modalities and processes in therapy of cardiovascular and cerebrovascular diseases with higher therapeutic efficiency and which is also more patient-friendly
	1.4 Neural and psychic diseases	1.4.2 Diagnostic of neural system
		1.4.3 Improved efficiency of treatment methods of neural system diseases
		1.4.4 Ensuring the quality of life of patients with neural system diseases
2. New diagnostic and therapeutic methods	2.1 In vitro diagnostics	2.1.1 Deepening of the knowledge in the area of – omic and high capacity methods 2.1.2 New IVD technologies
	2.4 Drug delivery systems	2.4.1. Development of new carriers for directed administration and transportation of drugs
	2.5 Genetic, cellular therapy and tissue replacements	2.5.3 Biomaterials
	2.6 Development of new medical instruments	2.6.1 Electric and magnetic mapping
		2.6.2 Endovascular procedures

		2.6.3 Navigational and robotic system, neurostimulants. Improved accuracy and supervision of invasive techniques
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