LARGE RESEARCH INFRASTRUCTURES OF THE CZECH REPUBLIC – POLICY OUTLOOK FOR 2030

Mr Pavel Doleček
Deputy Minister for Higher Education, Science and Research
Ministry of Education, Youth and Sports
CONTENTS

1. Large Research Infrastructures – agenda development
2. Large Research Infrastructures – legislative setting
3. Large Research Infrastructures – landscape & gap analysis
4. Large Research Infrastructures – international assessment
5. Large Research Infrastructures – networks & clusters
6. Large Research Infrastructures – funding framework
7. Large Research Infrastructures – monitoring and KPIs
1. LARGE RESEARCH INFRASTRUCTURES – AGENDA DEVELOPMENT

**2019**

*Landscape & Gap Analysis*

The Ministry of Education, Youth and Sports created “sectorial platforms” with Ministries responsible for policy-making in the areas of industry, trade, energy, transport, agriculture and environment, health, food, culture, and social affairs. The primary goal is, jointly with research community, analyse the large research infrastructures landscape and identify possible gaps.

**2020**

*Assessment Methodology*

The methodology framework for international peer-review assessment of large research infrastructures (2021) will be updated, followed by a call to submit documentation for the rigorous monitoring exercise.

**2021**

*New Legislative Framework*

Provided that the Act No. 130/2002 Coll., on Support of R&D and innovations is amended, it shall bring an updated definition of large research infrastructure and institutional funding of the facilities – providing them with long-term budgetary predictability and stability (based on the presumption that 7-year funding decision will be adopted for 2023+).

**2022**

*Seven-Year Funding Decision*

Following the international assessment of large research infrastructures in 2021, the Ministry of Education, Youth and Sports will aim for 7-year funding decision (2023-2029), to be adopted by Government.

**2023**

*Roadmap Update in 2023*

The 5th edition of National Roadmap of Large Research Infrastructures of the Czech Republic will be released as a follow-up to the political decision on large research infrastructures funding in the 2023+ period. In 2023, the Roadmap will continue following “ESFRI Roadmap” pattern and good practice examples of policy-making in Europe and worldwide.
2. LARGE RESEARCH INFRASTRUCTURES – LEGISLATIVE SETTING

ACT ON SUPPORT OF R&D AND INNOVATIONS FROM PUBLIC FUNDS

• The amendment to enter into force and effect in 2020
  ➢ Scientific results reached by users of large research infrastructures shall not only be registered in the information system on R&D and innovations of the Czech Republic, but also directly linked to individual projects of large research infrastructures

• The amendment to enter into force and effect in 2021
  ➢ New definition of a large research infrastructure keeping the essence in a better way, particularly in terms of specifying that large research infrastructure is a 100% service-based R&D facility, operated on the basis of open access policy to meet users’ needs
  ➢ Support of large research infrastructures from public funds shall be categorised as institutional support, not project-based targeted support, and financial framework adjusted accordingly (i.e. long-term strategy investment)
  ➢ The Ministry of Education, Youth and Sports shall remain policy-maker and public funding provider for large research infrastructures
3. LARGE RESEARCH INFRASTRUCTURES – LANDSCAPE & GAP ANALYSIS

• In 2019, Sectorial Platforms of Large Research Infrastructures Council (advisory board to Minister of Education, Youth and Sports) were established, gathering representatives of:
  - **Ministry of Education, Youth and Sports** as large research infrastructures policy-maker and provider of financial support from public funds of the Czech Republic
  - **Ministries of Industry and Trade, Transport, Environment, Agriculture, Health, Culture, and Labour and Social Affairs** as stakeholders of sectorial policies of utmost importance
  - **Leading large research infrastructures** as providers of expertise and technologies to reach knowledge-based solutions to socioeconomic challenges

• Sectorial platforms cover all scientific fields, including the physical sciences and engineering, energy, environment, health and food, social sciences and humanities, and e-infrastructures
WHAT ARE THE TASKS OF SECTORIAL PLATFORMS?

• Facilitate **long-term strategy debate** on large research infrastructures agenda development among all interested stakeholders (i.e. policy-makers, research community, end users, etc.)

• Analyse **how large research infrastructures meet priorities of sectorial policies** of the Czech Republic and identify the potential for a closer interaction between the relevant stakeholders

• Identify **possible gaps in the landscape of large research infrastructures** of the Czech Republic and stimulate already operating large research infrastructures to apply more synergy approach

• **Balance bottom-up and top-down policy approach** to large research infrastructures in terms of priority setting as regards potential new project proposals of large research infrastructures

• **Determine R&D fields of strategy importance to focus new large research infrastructure project proposals**, to be submitted for the 2021 ex-ante international peer-review evaluation
4. LARGE RESEARCH INFRASTRUCTURES – INTERNATIONAL ASSESSMENT

WHAT IS THE SCOPE?

• Interim evaluation of 48 large research infrastructures adopted for public funding by 2022
• Ex-ante evaluation of possible new large research infrastructure projects to be submitted

WHAT IS THE GOAL?

• Expert basis for adopting evidence-based policy-decision of the Government of the Czech Republic on the large research infrastructures public funding in the period 2023-2029
• 2023 Update to the Roadmap of Large Research Infrastructures of the Czech Republic
5. LARGE RESEARCH INFRASTRUCTURES – NETWORKS & CLUSTERS

- In 2017, the international assessment of large research infrastructures of the Czech Republic revealed **huge potential of clustering** of the facilities at the Czech national level in a number of scientific disciplines (specific recommendations were given by the assessment committee).

- **First achievements** have been already reached in the areas of e-infrastructures (e-INFRA CZ), physical sciences and engineering (CzechNanoLab), as well as social sciences and humanities (LINDAT/CLARIAH-CZ), where facilities have merged into larger project consortium platforms.
6. LARGE RESEARCH INFRASTRUCTURES – FUNDING FRAMEWORK

- Given the knowledge and technology demands and duration of individual life-cycle phases (i.e. concept, design, preparatory phase, implementation phase, operation phase, upgrade, and decommissioning), a large research infrastructure needs to be viewed and handled as a long-term strategy investment of the state, which results cannot be delivered overnight.

- In general, strategy planning decisions taken by large research infrastructures necessarily go beyond horizon of one decade, and call for long-term financial sustainability, stability and predictability in terms of public funding available.

  - The Ministry of Education, Youth and Sports aims to achieve 7-year funding cycle for the large research infrastructures in 2023-2029.

  - Periodic international assessments of the large research infrastructures shall not lead to binary decision-making process „funded x not funded“.

  - Only if a large research infrastructure performs poorly over longer period of time, funding shall be stopped; otherwise → tool for improvement.
7. LARGE RESEARCH INFRASTRUCTURES – MONITORING AND KPIs

- Interim monitoring of large research infrastructures in the course of the period 2023-2029 shall be based on a set of **key performance indicators (KPIs)**, to be filled by their operators.
- The monitoring system will be to a large extent inspired by KPIs developed by the European Strategy Forum on Research Infrastructures (ESFRI) to monitor the “ESFRI Landmarks” → the KPIs methodology is being prepared by the **ESFRI Working Group on Monitoring**, which was established following the “EU Competitiveness Council Decision on Accelerating Knowledge Circulation in the EU” – inviting the ESFRI to develop a common approach for monitoring of performance of research infrastructures in Europe.
- The **KPIs monitoring system** will be introduced by the Ministry of Education, Youth and Sports in 2021 international assessment methodology.
- **Target KPIs values** will be set by large research infrastructure operators on individual basis and assessed by international evaluation committee as regards suitability, relevance and ambitions.
- KPIs values will be fixed in the **grant agreements**.
# KPIs FOR ASSESSMENT OF “ESFRI LANDMARKS” PRELIMINARY DRAFT

<table>
<thead>
<tr>
<th>Monitoring objective</th>
<th>Key performance indicators</th>
</tr>
</thead>
</table>
| Achieving scientific excellence                           | 1. Number of user requests for access  
2. Number of users served  
3. Number of publications  
4. Percentage of top (10%) cited publications               |
| Delivery of education and training                        | 5. Number of MSc. and Ph.D. students using the research infrastructure  
6. Training of people who are not research infrastructure staff |
| Enhancing collaboration in Europe                         | 7. Number of Members of the research infrastructure from ESFRI countries  
8. Share of users and publications per ESFRI member country |
| Facilitating economic activities                          | 9. Share of users associated with industry and publications with industry  
10. Income from commercial activities and the number of entities paying for service |
| Outreach to the public                                    | 11. Engagement achieved by direct contact  
12. Outreach through media  
13. Outreach via the research infrastructure’s own web and social media |
| Optimising data use                                       | 14. Number of publicly available data sets used externally                                                     |
| Provision of scientific advice                            | 15. Participation by research infrastructure in policy related activities  
16. Citations in policy related publications                |
| Facilitating international co-operation                   | 17. Share of users and publications per non-ESFRI member country  
18. International trainees  
19. Number of members of the research infrastructure from non-ESFRI countries |
| Optimising management                                     | 20. Revenues  
21. Extent of resources made available                                                                          |
Thank you for your attention!

Mr. Pavel Doleček  
Deputy Minister for Higher Education, Science and Research  
Ministry of Education, Youth and Sports  

Karmelitská 529/5  
118 12 Prague 1 – Malá Strana  
Czech Republic  

Tel.: +420 234 812 101  
E-mail: pavel.dolecek@msmt.cz  
Web: www.vyzkumne-infrastruktury.cz/en/