



EGI Council Participant: HUN-REN SZTAKI

Participating in EGI Impact Report

Hungary_

www.egi.eu

2025

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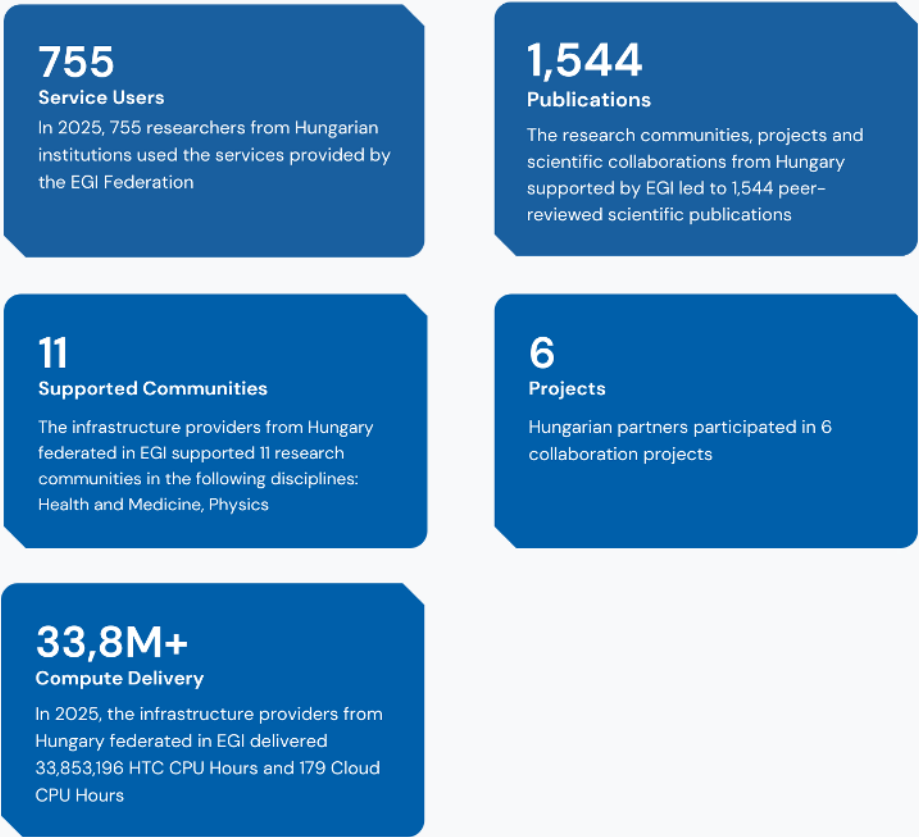
Overall EGI Impact

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**EGI Contribution
to the Country
Excellence in
Science**

Infographic_

Hungary_



Country Overview_

Number of supported publications	1,544
Number of total service users	755
Scientific Communities supported	11
Data Centres contributing to the Federation	2
Collaboration projects	6
Total HTC CPU hours	33,853,196
Total Cloud CPU hours	179

About EGI_

EGI is a federation of providers delivering advanced computing, data, and digital services for research and innovation, while driving collaborative development and impact across scientific communities.

The EGI Federation brings together national and international service providers to deliver the computing and data services that research teams rely on across Europe. Working as a coordinated federation, EGI enables research communities to access advanced capabilities in computing, data analytics, and artificial intelligence, while also supporting research and development that pushes the frontiers of digital innovation for science.

Through this collaborative model, EGI helps its members transform emerging technologies and approaches, such as big data, cloud computing, artificial intelligence, digital twins, and FAIR data, into reliable, environmentally and financially sustainable services for research and education. These services are designed to ensure continuity and stability beyond individual projects, enabling scientific communities

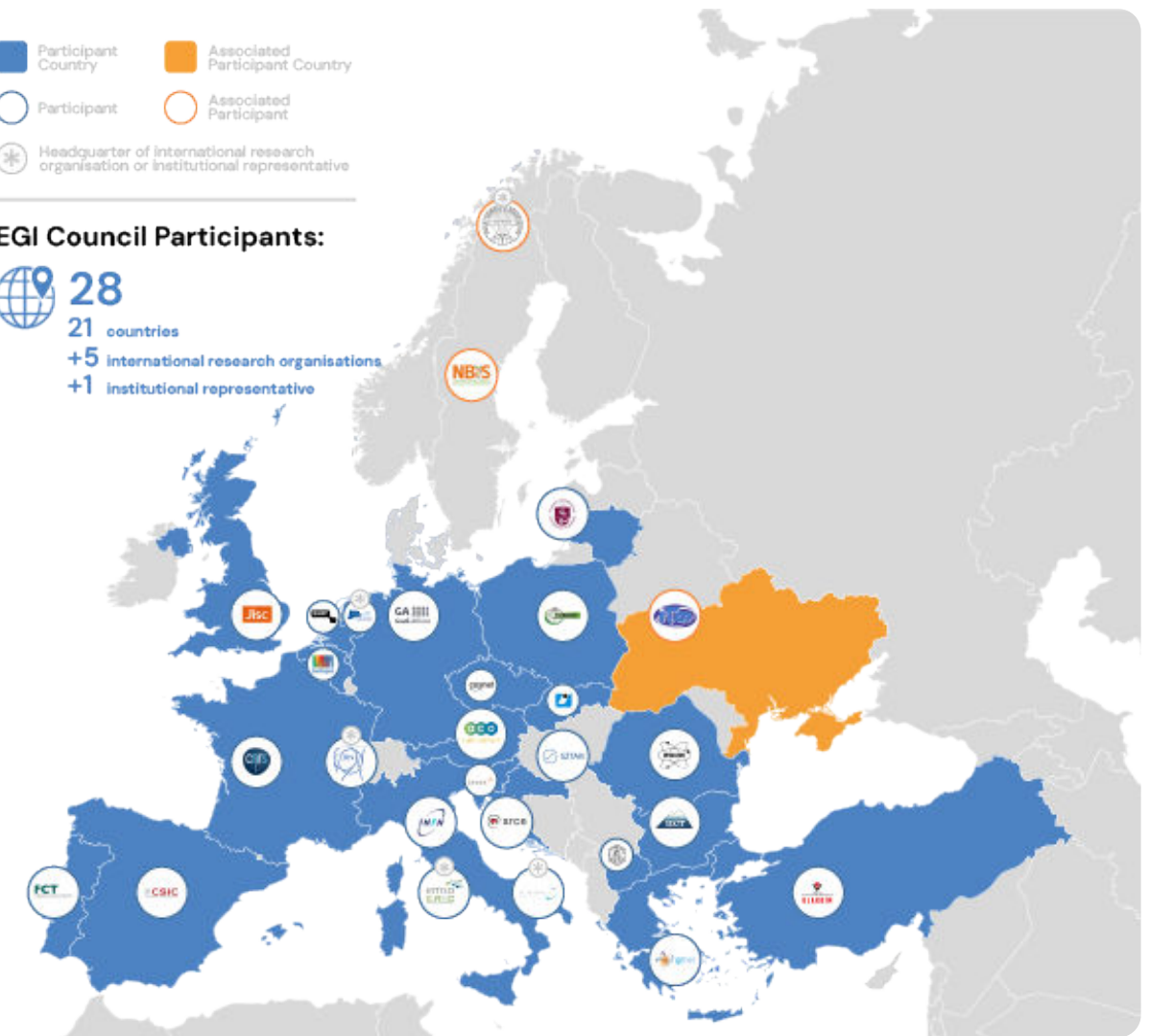
across disciplines, countries, and funding cycles to benefit from ongoing digital innovation. At the same time, the federated infrastructure and its associated R&D activities generate impact across all fields of science, from physics to the humanities, fostering new discoveries and novel research approaches.

Coordinated by the EGI Foundation, the Federation operates through a shared IT platform that connects hundreds of providers with research groups across Europe and beyond. By aligning and aggregating national capacities with European and global priorities, EGI ensures that researchers can seamlessly access digital resources and expert support. Together, EGI and its members establish a strong and lasting foundation for open, collaborative, and data-intensive science, strengthening Europe's capacity for research and innovation.



EGI Council Participants:

 **28**
21 countries
+5 international research organisations
+1 institutional representative



Council Participant HUN-REN SZTAKI_

About SURF

HUN-REN SZTAKI is a research institute, governed by the Eötvös Loránd Research Network. Upon the charge by the Secretary-general of the Academy, the supervision of the scientific activity pursued at the Institute is provided by the Board of the Institute. The fundamental task of the Institute is to perform basic and application-oriented research in an interdisciplinary setting in the fields of computer science, engineering, information technology, intelligent systems, process control, wide-area networking and multimedia. Contract-based target research, development, training and expert support for domestic and foreign industrial, governmental and other partners are important activities at the Institute. The mission of SZTAKI includes the transfer of up-to-date research results and state-of-the-art technology to university students.

Overall EGI Impact_

The EGI Federation is composed of e-infrastructure providers from national and community initiatives, forming one of the largest distributed computing infrastructures for researchers in the world, integrating about 1,243,400 CPU cores and over 1,4 Exabyte of storage space from hundreds of data centres.

In 2025, the EGI Federation served around 150,000 users (+29%). EGI users consumed 8 Billion HTC CPU hours (+8%), 43 Million Cloud CPU hours (-19%), ran over 351 Million computational jobs (-12%) and published over 2,300 open access publications.

As of the previous year, the research community with the largest number of users is Medical and Health Sciences, while the community with most extensive HTC CPU/h consumption is CMS.

From the scientific communities engaged in 2025, the one with most extensive Cloud CPU/h consumption is WeNMR.

Moreover, EGI engaged with 219 scientific communities, including SMEs and business pilots, and 41 Research Infrastructures

EGI Contribution to Excellence in Science in Hungary

HUN-REN SZTAKI coordinates the Hungarian participation to the EGI Federation. SZTAKI promotes the building and operation of a multidisciplinary national Distributed Computing Infrastructure open to all sciences and to developing countries in Hungary. This report provides an overview of the activities of HUN-REN SZTAKI in EGI, and the impact that was achieved thanks to this participation. The annual membership fee contributed by HUN-REN SZTAKI to the EGI Foundation in 2025 was 11,500 EUR.

EGI federates hundreds of resource centres that are located at participant countries, organizations and at collaborating e-Infrastructures worldwide. This federated infrastructure supports data- and compute-intensive research across Europe and the world. In 2025, our federation has been accessed by over 150,000 users.

Research Infrastructures and multi-national research collaborations are the largest adopters of EGI Services, the main contributors of thematic portals, and operate community-specific compute, storage and data systems based on EGI federation capabilities.

The services of the EGI federation have been used by 755 researchers from Hungary over the year. The estimated annual scientific output produced by research communities, projects and scientific collaborations from Hungary and supported by the EGI Federation in 2025 is estimated to amount to over 1,540 peer reviewed scientific publications. The EGI Federation is currently working with almost 50 Research Infrastructures, 11 of which include Hungarian partners. These EGI-enabled research infrastructures, their Hungarian members and their scientific output (publications) are detailed in the following pages of the report.

Hungarian Research Collaborations in EGI

ALICE (High Energy Physics)

- Wigner Research Centre for Physics (Wigner RCP)

EGI Supported Activities and Services

ALICE has been supported since 2012 as part of the EGI - WLCG collaboration. Federated services delivered include:

- Software support
- Infrastructure and Operations Services (infrastructure

- catalogue, Software Distribution Services (UMC, CMD, operations documentation)
- Operations Coordination (middleware deployment campaigns, procedures, innovation of tools)

- Security Services and Activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)

43 SCIENTIFIC PAPER(S) PUBLISHED IN 2025

Hungarian Research Collaborations in EGI

CLARIN (Linguistics)

- Research Institute for Linguistics, Hungarian Academy of Sciences

EGI Supported Activities and Services

CLARIN thematic services has been supported by EGI since 2018. CLARIN has a Service Level Agreement with EGI, using the following services:

- EGI Cloud (Compute + Online Storage) for hosting the Virtual Language Observatory

- (VLO)
- Technical support
- Service integration

0 SCIENTIFIC PAPER(S) PUBLISHED IN 2025

Hungarian Research Collaborations in EGI

CMS (High Energy Physics)

- Astronomical Institute - AVCR
- Charles University
- Palacky University

EGI Supported Activities and Services

CMS has been supported since 2012 as part of the EGI - WLCG collaboration. EGI Federated services delivered include:

- Software support (consultancy to users and system administrators, (software maintenance and validation)

- Infrastructure and operations Services (infrastructure catalogue, accounting repository and portal, helpdesk, monitoring, operations portal, AAI)
- Software distribution services (UMC, CMD, operations documentation)
- Operations coordination (middleware deployment

- campaigns, procedures, innovation of tools)
- Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)

135 SCIENTIFIC PAPER(S) PUBLISHED IN 2025

Hungarian Research Collaborations in EGI

DUNE (Astroparticle Physics)

- Eötvös Loránd University

EGI Supported Activities and Services

The DUNE experiment has been using compute resources from EGI partners for more than a decade. The services from the EGI federation that DUNE uses include:

- EGI HTC services from 6 EGI participant countries (CH, CZ, ES, FR, NL, UK)

- Software distribution services (UMC, CMD, operations documentation)
- Operations coordination (middleware deployment campaigns, procedures, innovation of tools)
- Security services and activities (CSIRT, Software

- vulnerability group, international security coordination, policies, IGTF distribution)

41 SCIENTIFIC PAPER(S) PUBLISHED IN 2025

Hungarian Research Collaborations in EGI ELI-BEAM (Physical Sciences) Ministry for Innovation and Technology	EGI Supported Activities And Services ELI works with EGI since 2016 on exploring and validating approaches for off-site computing and data management. ELI-Beams setup a High Throughput Compute Service on EGI resources and works with EGI providers on	- Refining the user requirements and translating these to e-infrastructure requirements, and - Identifying and validating services from EGI that can be relevant for ELI (besides HTC and compute). - Mobilising already existing HTC compute, cloud	compute and storage resources from EGI for ELI piloting and demonstration activities.	35 SCIENTIFIC PAPER(S) PUBLISHED IN 2025
Hungarian Research Collaborations in EGI ELI-NP (Nuclear Physics) Institute for Nuclear Research of the Hungarian Academy of Sciences (MTA-Atomki)	EGI Supported Activities And Services ELI works with EGI since 2016 on exploring and validating approaches for off-site computing and data management. ELI-NP setup a High Throughput Compute Service on EGI resources and works with EGI providers on	- Refining the user requirements and translating these to e-infrastructure requirements, and - Identifying and validating services from EGI that can be relevant for ELI (besides HTC and compute). - Mobilising already existing HTC	compute, cloud compute and storage resources from EGI for ELI piloting and demonstration activities.	90 SCIENTIFIC PAPER(S) PUBLISHED IN 2025
Hungarian Research Collaborations in EGI ILC (High Energy Physics) Wigner Research Center for Physics, Hungarian Academy of Sciences	EGI Supported Activities And Services The ILC experiment has been using compute resources from EGI partners since 2004. The services from the EGI federation that ILC experiments uses include EGI HTC services from 27 EGI federated sites from	IL, DE, FR, ES, NL, PL, UK - Software distribution services (UMC, CMD, operations documentation) - Operations coordination (middleware deployment campaigns, procedures, innovation of tools) - Security services and activities (CSIRT, Software vulnerability group,	international security coordination, policies, IGTF distribution)	50 SCIENTIFIC PAPER(S) PUBLISHED IN 2025
Hungarian Research Collaborations in EGI LSST (Astronomy) - Eötvös Loránd University - Konkoly Observtorary	EGI Supported Activities and Services The LSST compute federation benefited from the following EGI services: - Software support - Infrastructure and operations Services (infrastructure catalogue, accounting repository and portal, helpdesk, monitoring, operations portal, AAI)	- Software distribution services (UMC, CMD, operations documentation) - Operations coordination (middleware deployment campaigns, procedures, innovation of tools) - Security services and activities (CSIRT, Software vulnerability	group, international security coordination, policies, IGTF distribution)	20 SCIENTIFIC PAPER(S) PUBLISHED IN 2025

Hungarian Research Collaborations in EGI VIRGO (Astrophysics) Institute for Nuclear Research Wigner RCP	EGI Supported Activities And Services The Virgo experiment has been using compute resources from EGI partners for more than a decade. The services from the EGI federation that VIRGO uses include: - EGI HTC services from data centres in FR, IT, NL, ES and UK - Software distribution	services (UMC, CMD, operations documentation) - Operations coordination (middleware deployment campaigns, procedures, innovation of tools - Security services and activities (CSIRT, Software vulnerability group, international	security coordination, policies, IGTF distribution)	23 SCIENTIFIC PAPER(S) PUBLISHED IN 2025
Hungarian Research Collaborations in EGI WeNMR (Structural Biology) - University of Debrecen - SZTE - Hungarian Academy of Sciences, Research Centre for Natural Sciences - University of Pecs - SOTE - Biological Research Centre - ELRN Biological Research Centres - Eötvös Loránd University - RCNS	EGI Supported Activities and Services ThWeNMR is supported by EGI since 2011 and has a	Service Level Agreement since 2016. The EGI Services used by the community include: High-Throughput, Cloud + Online Storage services from 23 EGI federated sites from NL, IT, FR, DE, PL, UK, the Asia Pacific region, IberGrid (Spain and Portugal), the	Latin America region. - EGI Workload Manager - Trust and identity management with Check-in	10 SCIENTIFIC PAPER(S) PUBLISHED IN 2025

Service Level Agreements_

During 2025, ELKH-CLOUD supported 1 Service Level Agreements for international scientific communities via EGI, delivering Cloud Computing and Online Storage services.

Participated Projects_

In the reference period, the EGI Foundation was leading seven Horizon Europe Projects, two of which started in 2025:

- iMagine (September 2022–December 2025)
- interTwin (September 2022–August 2025)
- ENVRI-Hub NEXT (February 2024–January 2027)
- EOSC Beyond (April 2024–March 2027)
- EOSC Data Commons (April 2025–March 2028)
- RI-SCALE (March 2025–February 2028)

- SPECTRUM (January 2024–June 2026)

Furthermore, the EGI Federation was involved in 6 additional projects, increasing the innovation potential of its participants.

The EGI Federation participates in Horizon 2020 and Horizon Europe projects together with Dutch institutions to facilitate the uptake and use of e-infrastructure services for science. A summary of these projects, the involved institutes and the scope of the collaboration is provided in the next table.



interTwin



Project Title	Scope of Collaboration		
	EGI advances the development of innovative approaches for communication, dissemination, and exploitation management. It contributes technical expertise to the definition of the project's architecture and guidance	framework, supports the harmonisation of trust and interoperability policies, and participates in the validation process. EGI also contributes to the preparation of the Compendium and to formulating recommendations that inform the project's future directions..	Participating beneficiaries from the country • Pro-M

Project Title	Scope of Collaboration		
	EGI supports the research and integration of datasets, tools, and workflows from diverse sources into ECHOES's technical framework. It provides scalable, secure storage and compute infrastructure, alongside a federated authentication and authorisation infrastructure (AAI) for seamless cloud access.	EGI also contributes expertise to the project's long-term sustainability and open innovation strategies through private sector engagement.	Participating beneficiaries from the country • National Archives of Hungary

Project Title	Scope of Collaboration		
	EGI contributes multi-faceted research expertise across key work packages, including governance, funding models, and cost structures for EOSC sustainability (WP1). It plays a leading role in inter-project collaboration (WP4/	WP5), coordinating grants, technical alignment, and joint communications among Horizon Europe INFRAEOSC projects. EGI also supports effective project execution and coordination (WP9)..	Participating beneficiaries from the country • Pro-M

Project Title	Scope of Collaboration		
	EGI conducts environmental impact assessments across the EGI Federation and partner ESFRIs, identifying sustainability best practices. It develops environmental metrics publication systems, energy-aware workflow	brokering for HTC/ cloud/AI services, and self-assessment questionnaires for Research Infrastructures. EGI also provides training, consultancy, and communications support.	Participating beneficiaries from the country • HUN-REN SZTAKI

Project Title	Scope of Collaboration		
	EGI leads communication, dissemination, and exploitation efforts (WP1), including stakeholder mapping and service catalogue promotion. It develops climate risk training modules and provides access	to training/computing infrastructure (WP3), while contributing to FAIR frameworks, AAI analysis, and access policy alignment for integrated knowledge services (WP6)	country • HUN-REN Ökológiai Kutatóközpont
	Participating beneficiaries from the		

Project Title	Scope of Collaboration		
	EGI leads WP4 on Feasibility Assessment and Roadmap, developing realistic infrastructure upgrade scenarios and cooperation mechanisms documented in the AI in Science Roadmap. As WP8/WP9 lead, it drives communication,	dissemination, engagement, the annual AIS Summit, RAISE Secretariat setup, and stakeholder management	Participating beneficiaries from the country • HUN-REN SZTAKI

Infrastructure Contributions

The EGI Federation offers two complementary compute capabilities: the High-Throughput Compute (HTC) federation and the Cloud federation. 2 Hungarian data centres contribute to these federations:

HTC Federation:

- BUDAPEST (Wigner Research Centre for Physics)

Cloud Federation:

- ELKH-CLOUD

The data centres provided 2 service endpoints and delivered 33,853,196 HTC CPUhours and 179 Cloud CPUhours in total to EGI communities over the year. With the help of the EGI Security Vulnerability Group, the Hungarian sites avoided 49 critical vulnerabilities in

foundational software systems during the year.

The most active international user groups of the country compute resources were:

- CMS: 60.71%
- ALICE: 39.29%.

Methodology

Data for this impact report has been collected from the following sources.

Users

EGI uses the following methodology to capture the number of EGI users who rely on EGI services

- EGI serves users in the form of ‘communities’, called ‘Virtual Organisations’ (VO in short). A VO’s members can range from one to tens of thousands. Members of a VO benefit from and use EGI services in different ways (e.g., by using Services for Federation or Services for Research).
- EGI establishes knowledge about its VOs as part of the user community support lifecycle; therefore, baseline information about VOs is collected through the Customer Relationship Management process (CRM).

At the end of 2025, there were 196 VOs in EGI. EGI Virtual Organisations (VOs) can rely on different technical and non-technical mechanisms to manage

their own members. Depending on their choice, the EGI Federation coordinator (EGI Foundation) has to follow different, corresponding approaches to know the number of members in a given VO, and to obtain additional information about these members (e.g. their ‘country’). The EGI Foundation uses the following mechanisms to obtain information about the VO users:

- Obtain user number statistics from the EGI Operations Portal for VOs, where the members register personally in a ‘VO membership management’ system that is either operated by EGI or can be accessed by EGI.
- Obtain user number statistics from Community VRE REST APIs for VOs that operate Virtual Research Environments (VREs) on top of EGI resources. Those VREs implement a specific API to report users (e.g., WeNMR, Virtual Imaging Platform (VIP), NBIS).
- Obtain user number statistics from interviews with VO coordinators for VOs coordinated by one person.

Publications

Publications are collected from each community’s public repository, if existing. Additional details are checked with the VO coordinators during the interviews to complement this information. EGI also consults OpenAIRE services to countercheck the data. You can check the list of repositories for each VO here (requires login): <https://operations-portal.egi.eu/vo/#collapseVoListOther>.

Institutional members supporting research communities

EGI relies on the information on each community’s website to list institutions supporting research communities at the national level. Additionally, EGI appreciates the feedback from its national representatives to refine and improve those lists.



EGI Membership Impact Report

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