



EGI Council Participant: IS-ENES

# Participating in EGI Impact Report: CMCC for IS-ENES

# 2024

[egi.eu](https://egi.eu)

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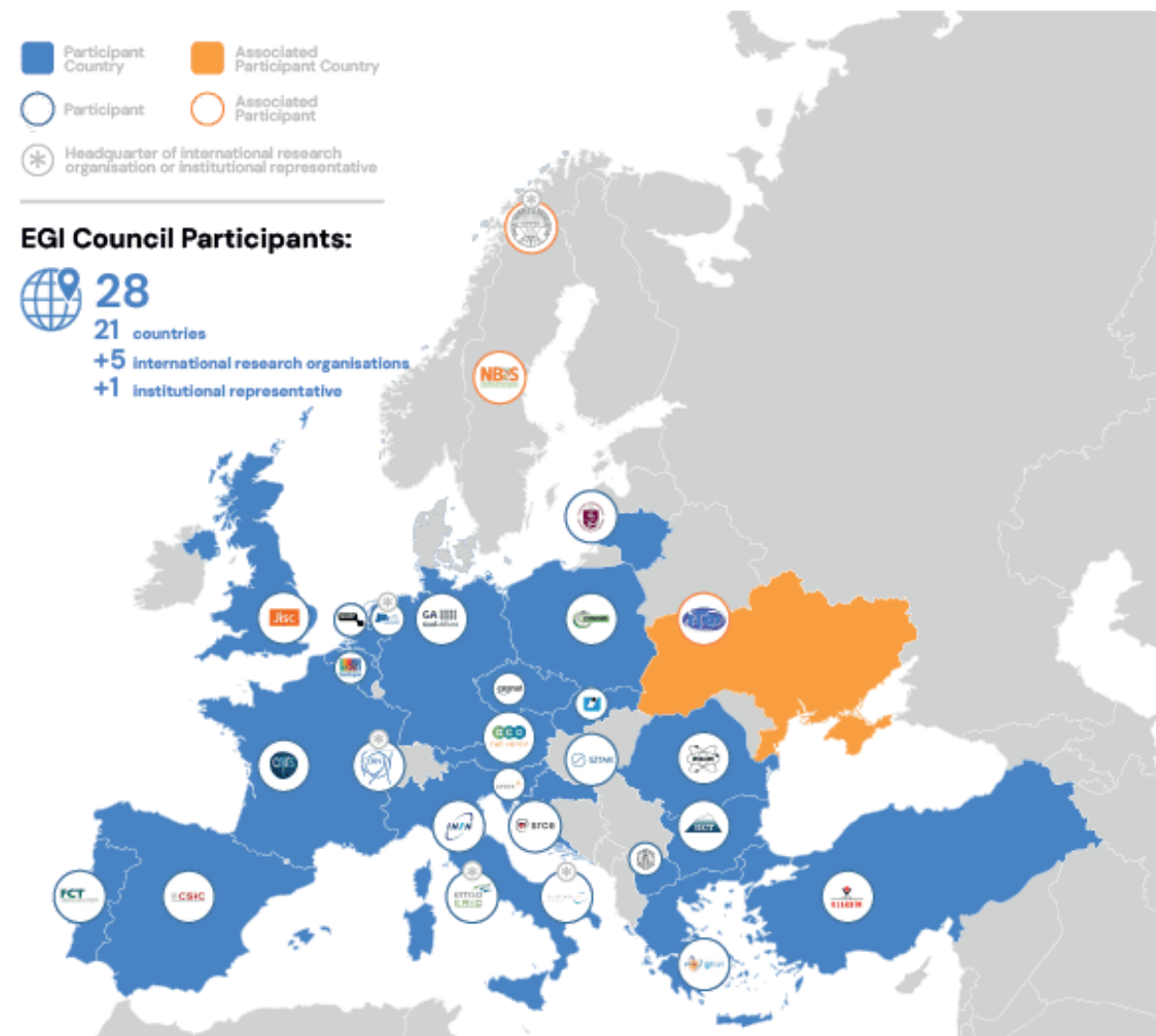
# About EGI

EGI is the federation of computing and storage resource providers united by a mission of delivering advanced computing and data analytics services for research and innovation.

The EGI Federation believes that all researchers should have seamless access to services, resources and expertise to collaborate and conduct world-class research and innovation. The EGI Federation is coordinated by EGI Foundation, an organisation with headquarters in Amsterdam. The Foundation offers a service federation and management platform, enabling the data centres to harmonise and integrate their services by connecting to a common hub. Moreover, it engages with international research communities using these services in order to understand and satisfy their demands for advanced computing for research.

The mission of EGI is pursued by coordinating and provisioning an international federated infrastructure that pools together service providers from both the public and private sectors in Europe to develop, integrate and deliver digital services for compute and data-intensive research and innovation. As an open initiative with a global outlook, the EGI Federation also connects service providers beyond Europe, following the collaboration needs of the served communities.

The latest Annual Report provides an extensive overview of the results that have been achieved through our collaborative efforts in 2024.



Approved EGI Council map from 2024



# About CMCC and ENES

CMCC has the mission to investigate and model our climate system and its interactions with society to provide reliable, rigorous, and timely scientific results. The extent is to stimulate sustainable growth, protect the environment and develop science driven adaptation and mitigation policies in a changing climate. Moreover, CMCC works to develop foresights and quantitative analysis of our future planet and society.

The European Network for Earth System modelling, ENES, was launched in 2001. It gathers the community working on Earth's climate system modelling with the aim to accelerate progress in this field. This community is strongly involved in the assessments of the Intergovernmental Panel on Climate Change (IPCC) and provides those predictions, on which EU mitigation and adaptation policies are elaborated.



# Overall EGI impact

On behalf of ENES, CMCC contributes to the Federation's mission to deliver open solutions for advanced computing in research and innovation, coordinating and provisioning an international federated infrastructure that pools together service providers from both the public and private sector in Europe to develop, integrate and deliver digital services for compute- and data-intensive research and innovation. In particular, ENES contributes to facilitating access to general & specialised ICT resources at pan-European scale and to making expert support teams across Europe accessible. The annual membership fee contributed by CMCC to the EGI Foundation in 2024 was 10,000 EUR.

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 2024, the EGI Federation served around 116,000 users (+23%). EGI users consumed 7,4 Billion HTC CPU hours (+5.7%), 62,7 Million Cloud CPU hours (-23,5%), ran over 402 M computational jobs (+8%)

and published over 2,560 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 2024, the one with most extensive Cloud CPU/h consumption is WeNMR.

Moreover, EGI engaged with a total of 249 scientific communities; 11 SMEs and business pilots, and 2 additional Research Infrastructure included in the ESFRI Roadmap, raising the total of number of ESFRI partners/users of EGI to 25.



# EGI's contribution to ENES excellence in science

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 2024, our federation was used by over 260 scientific communities, and has been accessed by around 116.000 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.

ENES is supported by 3 countries and several institutions as per the following table.



## ENES research collaborations in EGI

### IS-ENES (Climate Change)

- CMCC (Italy)
- TUBITAK (Turkey)
- CESNET (Czech Republic)

## EGI supported activities and services

ENES has been supported through the establishment of a Data Space in the EGI-ACE project. Since 2021 the ENES Data Space is using the following services from EGI:

- EGI Check-in
- EGI Cloud Compute
- EGI Online Storage
- EGI DataHub
- Technical support
- Software integration and piloting

## Number of scientific papers published in 2024

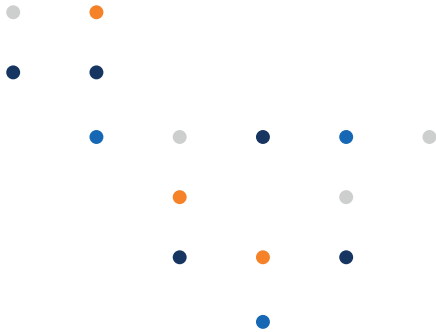
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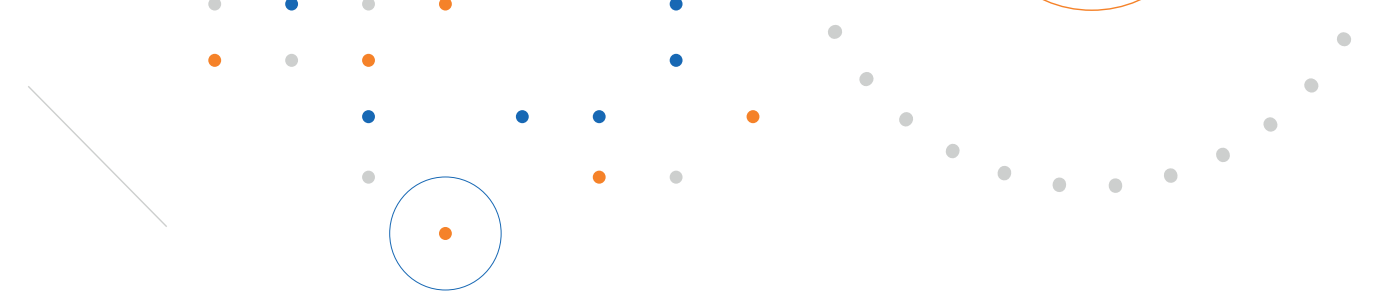
# Services from EGI and Providers

EGI and ENES stipulated an SLA (Service Level Agreement) in 2021. Since then ENES benefits from the following services:

- EGI Check-in
- EGI Cloud Compute
- EGI Online Storage
- EGI DataHub
- Technical support
- Software integration and piloting

During 2024, the ENES community consumed 3,380,007 cloud compute CPU-hours through EGI: 2,179,687 from the TUBITAK-ULAKBIM site (Turkey), and 1,200,320 from the CESNET site (Czech Republic).





# Methodology

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

## Users

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

- EGL 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 EGL services in different ways (e.g., by using Services for Federation or Services for Research).
- EGL 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 2024, there were 135 VOs in EGL.

EGL Virtual Organisations (VOs) can rely on different technical and non-technical mechanisms to manage their own members. Depending on their choice, the EGL Federation coordinator (EGL 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 EGL Foundation uses the following mechanisms to obtain information about the VO users:

- Obtain user number statistics from the EGL Operations Portal for VOs, where the members register personally in a 'VO membership management' system that is either operated by EGL or can be accessed by EGL.
- Obtain user number statistics from Community VRE REST APIs for VOs that operate Virtual Research Environments (VREs) on top of EGL 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. EGL 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

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





# EGI Membership Impact Report

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EGI Foundation



EGI

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