



15–16 SEP 2026

4U-PI Kick-off Meeting

Welcome

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with Leonida A. Gizzi

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EXTREME LIGHT
INFRASTRUCTURE

A EUROPEAN RESEARCH INFRASTRUCTURE CONSORTIUM

ELI Members and Observers

The Extreme Light Infrastructure is the world's largest laser-based research infrastructure.

A user facility dedicated to multi-disciplinary science, ELI operates as a **European Research Infrastructure Consortium**, a legal entity under EU law, created by EU countries and partners to develop and operate **pan-European research infrastructures**.

ESFRI LANDMARK PROJECT

MEMBERS



CZECH REPUBLIC* HUNGARY* ITALY LITHUANIA BULGARIA

OBSERVERS



ROMANIA* GERMANY SLOVAKIA MONTENEGRO POLAND

* Host Countries



ELI Beamlines



ELI ALPS



ELI NP

Three facilities, **one user programme**



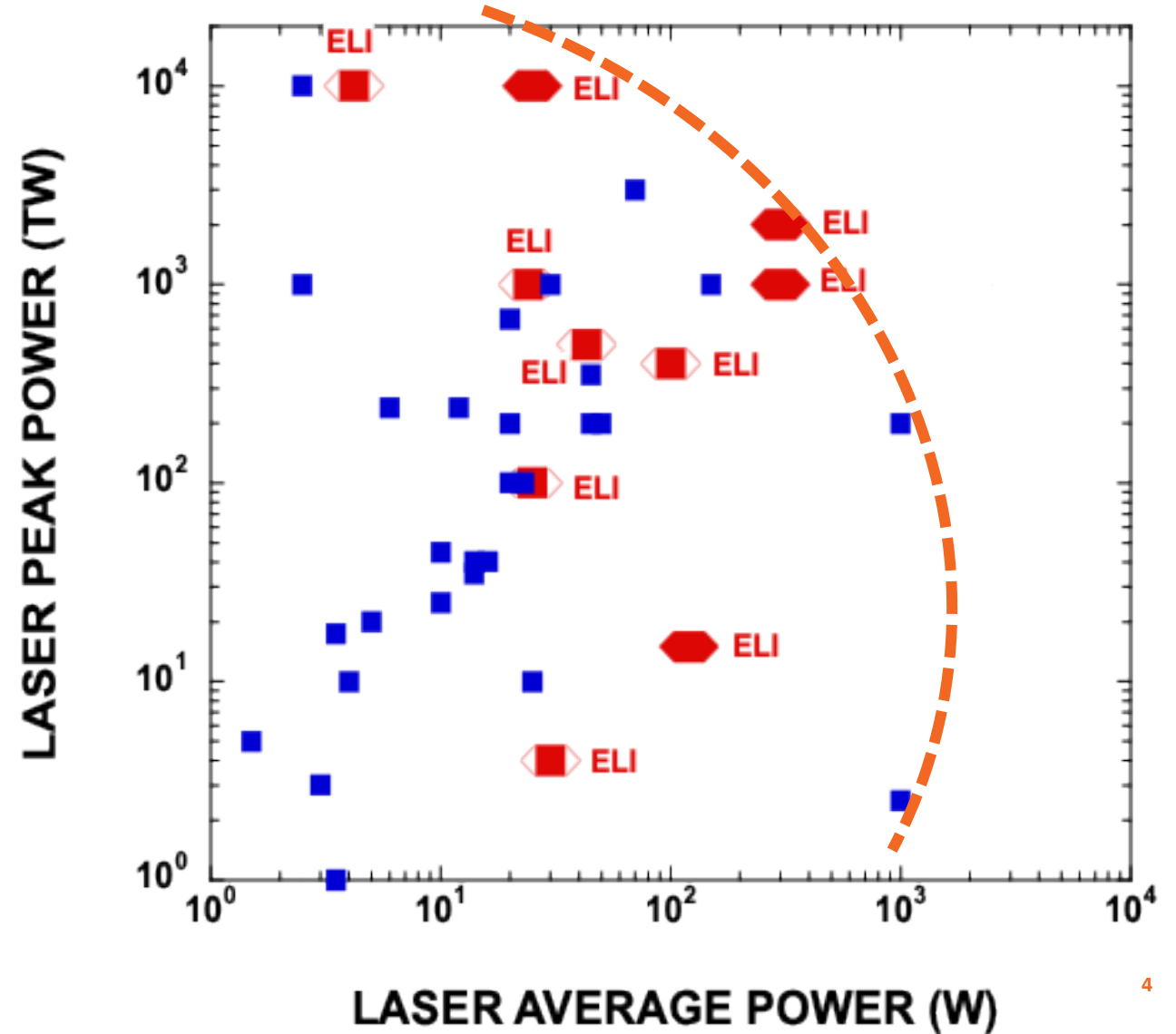
Demand is substantial and international

Calls 1–8: 879 experiment proposals received from researchers in 39 countries.

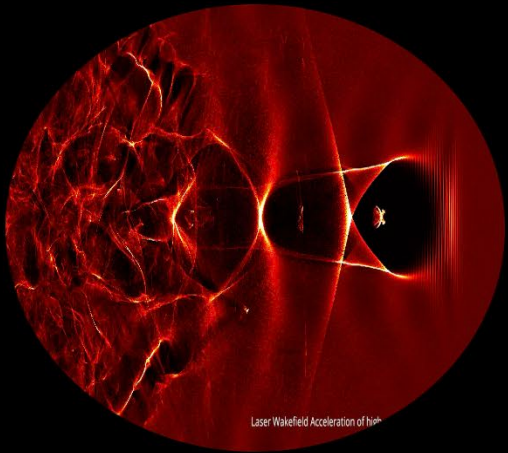
Dominating the laser landscape

The Extreme Light Infrastructure is the world's largest and most advanced high-power laser infrastructure and a global technology and innovation leader in high-power, high-intensity, and short-pulsed laser systems.

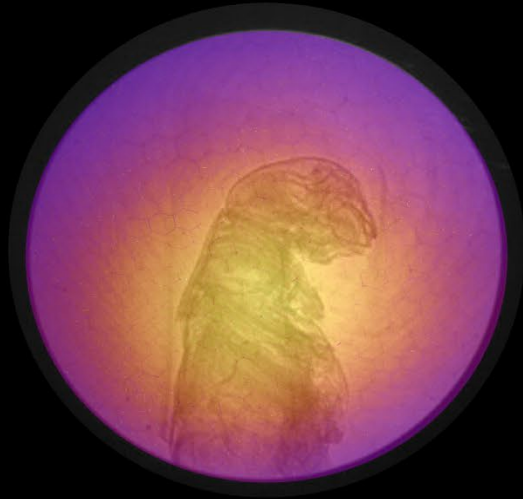
ELI's suite of lasers cover the full spectrum of average and peak power.



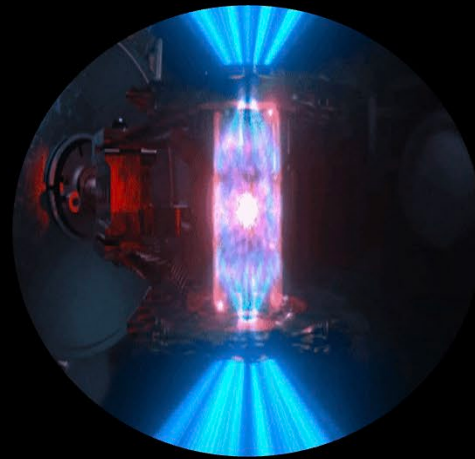
Science at ELI



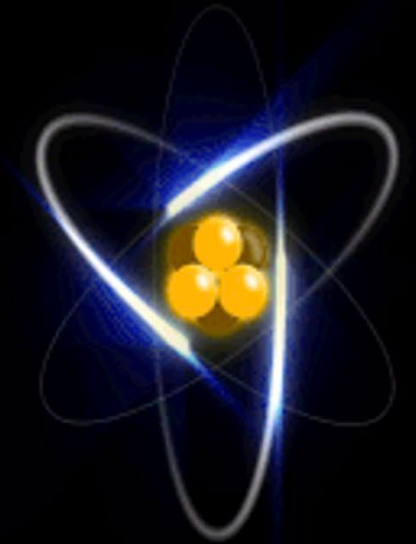
particle
acceleration



broad
spectrum
radiation
physics



plasma
high-energy
density(HED)
fusion
astrophysics

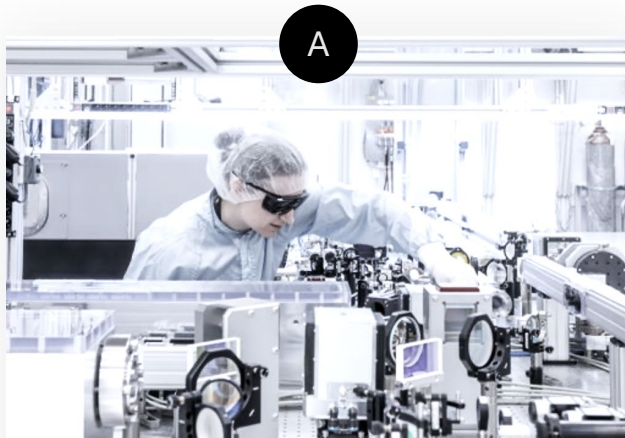


ultrafast
structural
dynamics
material science
biology

One user facility, three modes of access

ELI USER PROGRAMME

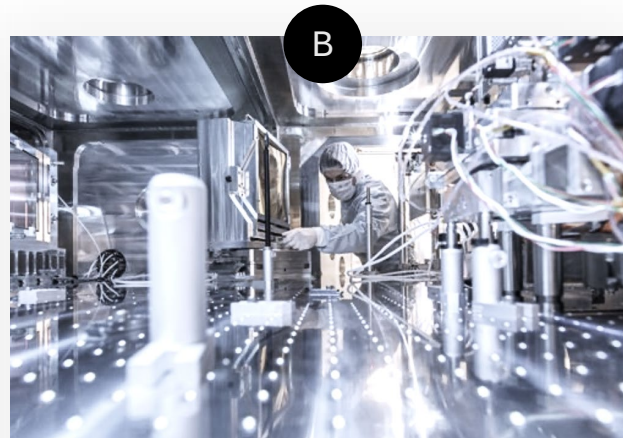
A flexible model that serves academia, start-ups and industry alike.



Excellence-based Access

Evaluation of proposals by international peer-review panels.

RESULTS PUBLISHED AND OPEN



Mission-based Access

Thematic research granted on the basis of scientific missions. Proposals reviewed by international panels.

RESULTS PUBLISHED AND OPEN



Proprietary Access

Paid access for industrial or other users.

RESULTS RETAINED BY THE USER



Steady Growth in Submitted Proposals and Available Instruments

Beamtime allocated / Not allocated

Available instruments

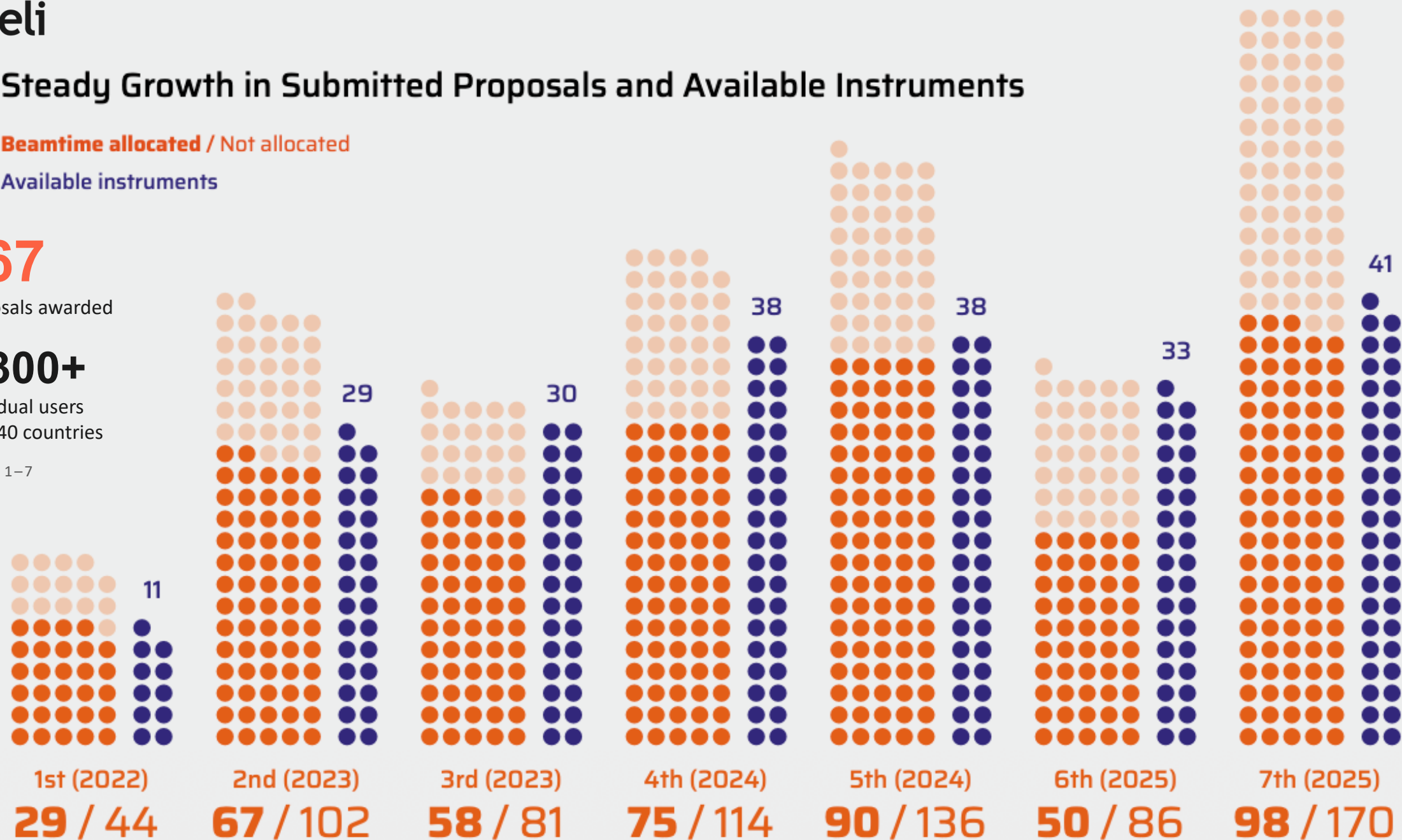
467

proposals awarded

1,300+

individual users
from 40 countries

CALLS 1-7



A growing ecosystem

ELI is open to the user community, to start-ups and to industry — enabling new science and pushing the technological development that makes that science usable.

Energy Fusion

Laser-driven inertial fusion energy: high-repetition-rate drivers, targetry and burn diagnostics

4U-PI

Medical Applications

Ultrahigh-dose-rate ion and neutron beams for FLASH therapy, radiation biology and isotope production

4U-PI

Security & Space

Multimodal imaging and stand-off inspection; radiation-hardness testing for space systems

New Materials

Matter under extreme fields, ultrafast structural dynamics, advanced optics and coatings

4U-PI

AI & Autonomy

AI/ML-enabled diagnostics and feedback loops for reproducibility and autonomous operation

4U-PI

4U-PI sits directly on the medical axis — and draws on every other one.

Innovation & Industry

ELI works with industry as supplier, co-developer and user. Proprietary access lets companies and start-ups buy beamtime and keep their results.

We are continuously expanding our base of qualified suppliers worldwide.

THALES

Rigaku

THORLABS

SPECSGROUP

OptoSigma®

Amplitude

CLASS

5

LAYERTEC®
OPTICAL COATINGS · OPTICS

IOPTEC
light is our profession

UFI
UltraFast
Innovations

TRUMPF

FOCUSED
ENERGY

LIGHT
CONVERSION

EKSPLA

STREICHER

MarvelFiber

4U-PI in the ELI ecosystem

1 September 2026 – 31 August 2030 · 48 months · 12 partners · 6 countries · Project 101290656

What ELI brings to 4U-PI

- Three facilities inside one legal entity — ELI Beamlines and ELI ALPS and ELI NP
- PW-class drivers across the full range of peak and average power
- Joint enabling technologies: targetry, optics and coatings, integrated diagnostics, biolabs
- A running user programme with international peer review and three access modes



What 4U-PI delivers back

- User-ready ultrafast, ultrahigh-dose-rate ion and neutron platforms
- Standardised dosimetry and radiobiology protocols for comparable results
- AI/ML-enabled diagnostics on the path to autonomous operation
- A clinical and industrial route to exploitation with PTC, Mirrotron, Focused Energy and EIT Manufacturing

Welcome to Dolní Břežany — over the next four years 4U-PI turns ELI capability into user capability.