

# The Extreme Light Infrastructure

EXTREME SCIENCE

A European Research Infrastructure Consortium



# ELI ERIC – The World's Largest Laser Infrastructure

ELI 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**.

The **international laser user facility** ELI accommodates some of the most intense lasers in the world. ELI's lasers produce ultra-short pulses of high energy **photons, electrons, protons, neutrons, muons and neutrinos in the (sub-)attosecond regimes** on demand.

**Legal status:** European Research Infrastructure Consortium (ERIC)

**Established:** 2021

**Founding members:** Czech republic, Hungary, Italy, Lithuania, Bulgaria

**Founding observes:** Germany, Romania

**Statutory seat:** ELI Beamlines facility, Dolní Břežany, Czech Republic

**Staff members:** 604 (48 nationalities)





## Technological innovations

**ELI ERIC** operates two major facilities:

**ELI Beamlines** (Czech Republic): Focus on particle acceleration, plasma physics and structural dynamics using PW lasers.

**ELI Alps** (Hungary): Focus on attosecond physics, investigating ultrafast dynamics on the atomic scale





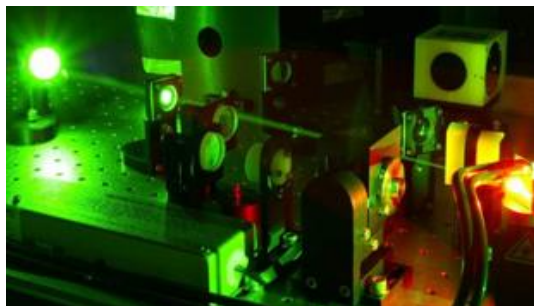


## Introduction to ELI ERIC

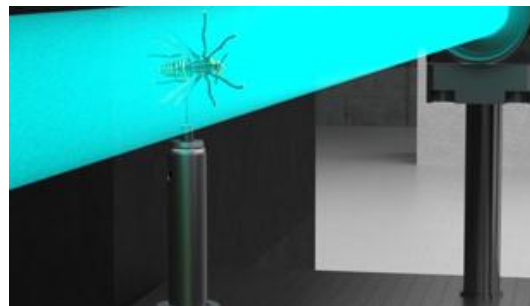
- ELI ERIC is specializing in **ultra-intense and ultra-short laser pulses**
- ELI ERIC supports both academic and industrial users, offering **open access** to unique laser systems and experimental capabilities.
- Our mission is to enable **world-class research**, promote **technological innovation**, and support **real-world applications** in science and industry.



# ELI Science Case



Laser research



Soft to hard x-rays



Particle Acceleration  
250 MeV Ions, 10 GeV  $e^-$



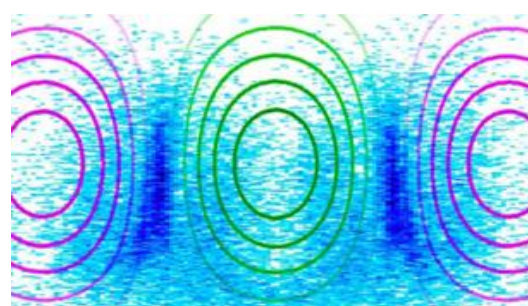
Nuclear Physics and Photonics



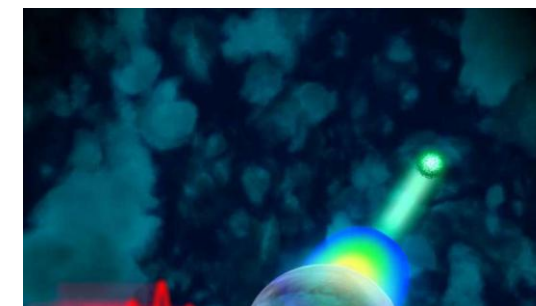
Material Science and Biology



Plasma Physics and High  
Energy Density, Astrophysics



Ultra High Intensity Interactions  
High-field physics and theory



Ultrafast, attosecond dynamics



# Collaboration Opportunities

## **1. Suppliers**

- Seeking new suppliers to support scientific and operational needs
- Expanding collaboration with existing suppliers for advanced services and solutions

## **2. Innovation Partners**

- Joint development of research and innovation projects
- Participation in collaborative R&D initiatives

## **3. Contract Research Clients**

- High-precision measurements
- Scientific and engineering calculations
- Feasibility studies
- Licensing of ELI-developed technologies

## Vacuum systems & components



- Prevac, X-ray Project (PL)
- Fantini, Alca (IT)
- VAT (CH)
- AVS (ES)
- Hositrad (NL)
- Vakuum Praha, Streicher (CZ)

## Optics & Photonics



- VIGO, Lambda (PL)
- INFN (IT)
- FEI (NL)
- Crytur, Nuvia (CZ)

## Detectors, Sensors, Cameras



- Onefive, PSI (CH)
- Holland Shielding Systems (NL)
- Sphere (ES, PT)
- Delong Instruments (CZ)

## Ultrafast electronics, Oscillators



- Creotech, CRI Jolanta (PL)
- Holland Shielding Systems (NL)
- Ateko (CZ)
- Seven (ES)



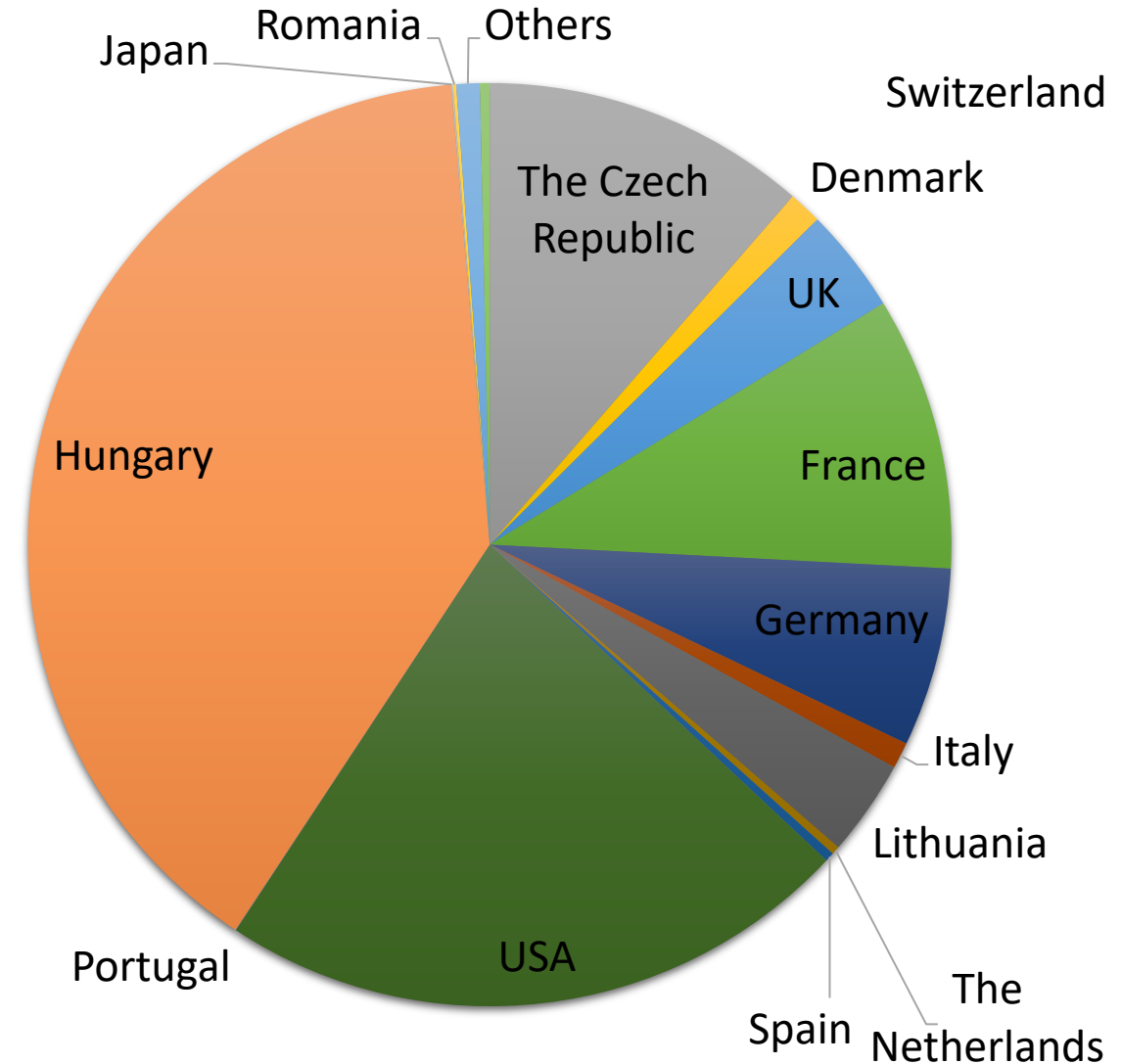


# Overview of existing suppliers to ELI

## Contracted value of supplies in 2012 – 2022

- Total investment  
**580 million EUR**
- Investment in technologies and instrumentations  
**415 million EUR**

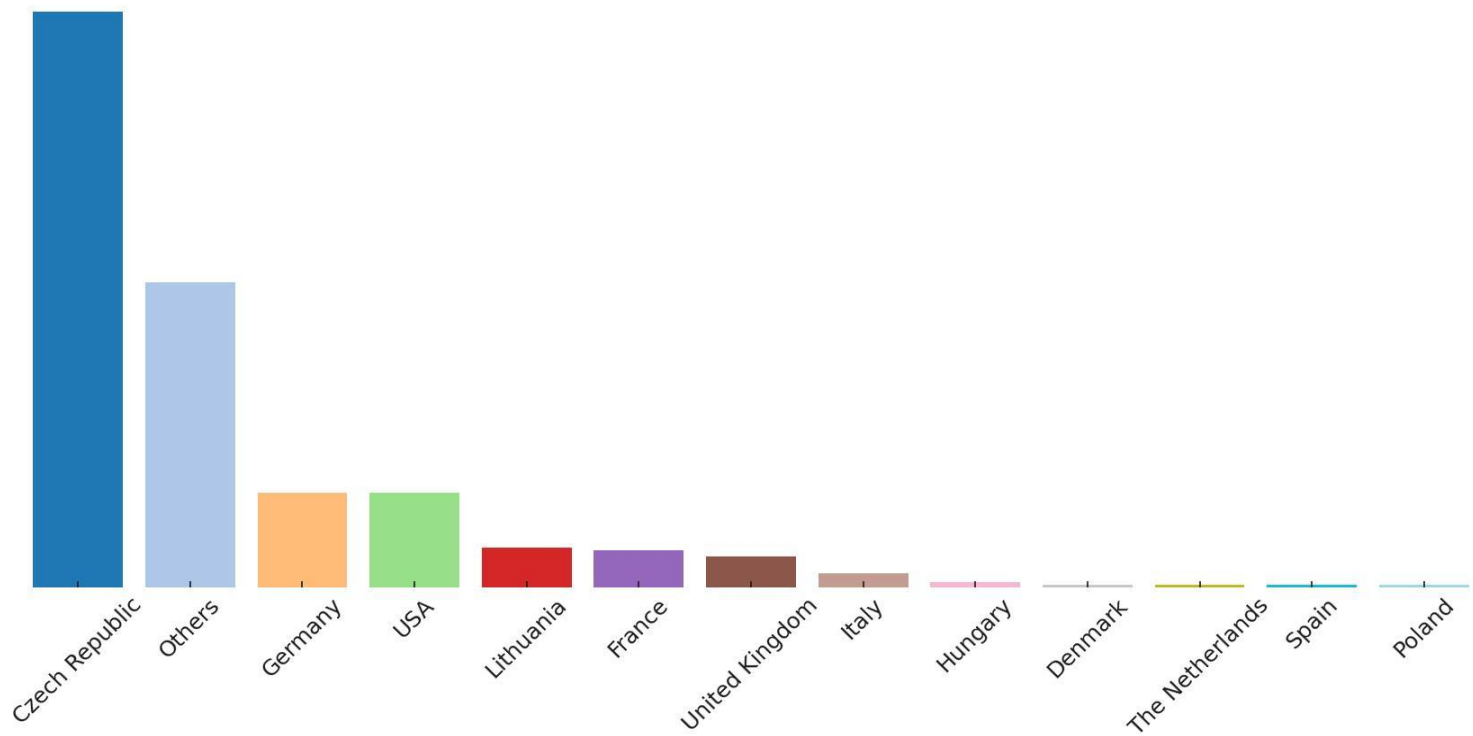
Country	Contracted value m EUR
<b>Czech Republic</b>	<b>42.7</b>
Denmark	4.8
United Kingdom	15.3
France	39.8
Germany	26
<b>Italy</b>	<b>3.8</b>
<b>Lithuania</b>	<b>14</b>
<b>The Netherlands</b>	<b>1.2</b>
<b>Spain</b>	<b>1.4</b>
<b>Portugal</b>	<b>0.06</b>
USA	92.4
<b>Poland</b>	<b>0.8</b>
<b>Hungary</b>	<b>163.5</b>
Japan	0.2
Romania	0.5
<b>Switzerland</b>	<b>1.4</b>
<b>Others</b>	<b>3.4</b>
<b>TOTAL</b>	<b>415</b>





# Overview of existing suppliers to ELI Beamlines

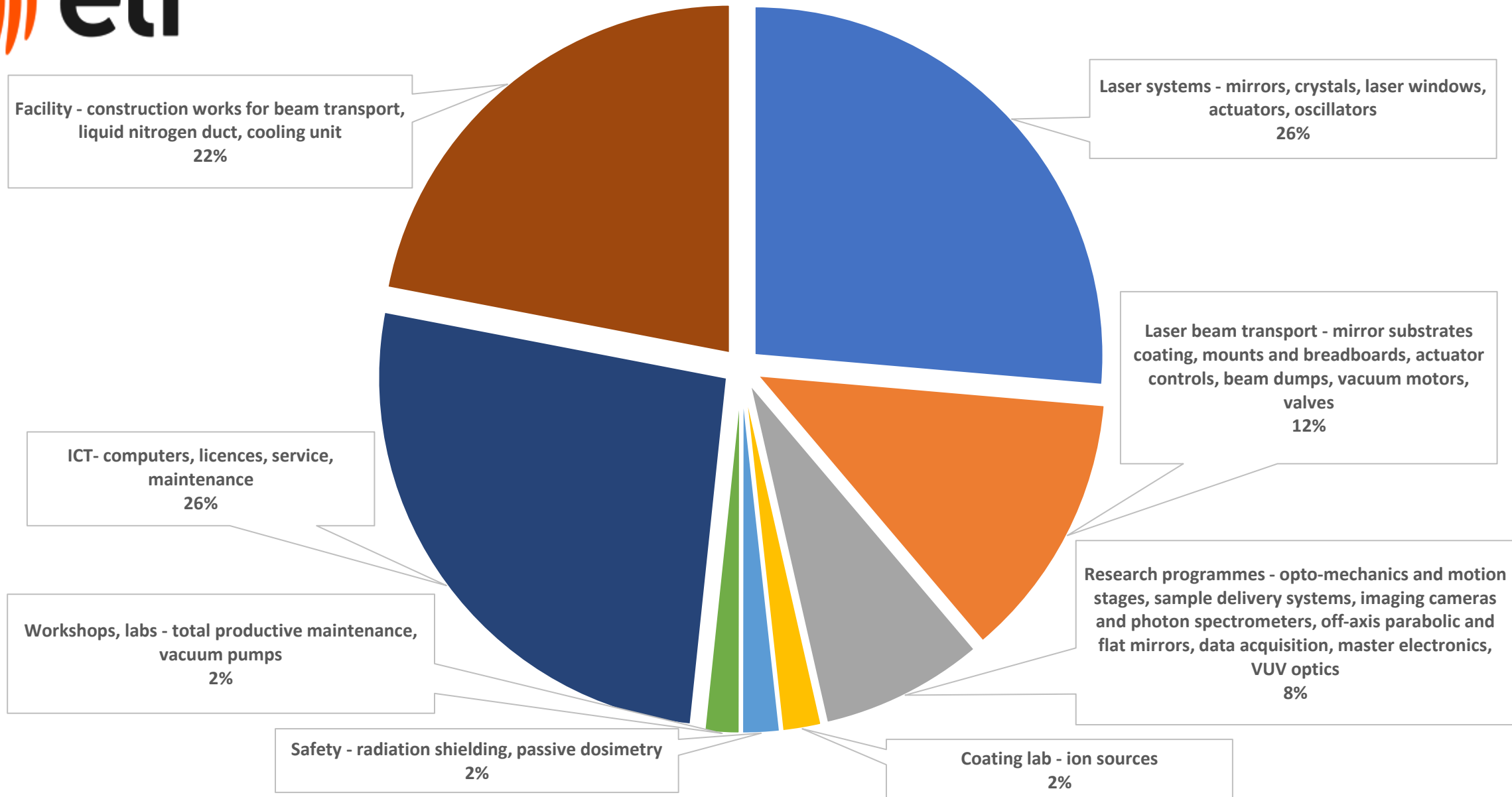
## Contracted value of supplies in 2023 and 2024



Country	Contracted value m EUR
Czech Republic	20.0
Denmark	0.1
United Kingdom	1.1
France	1.3
Germany	3.3
Italy	0.5
Lithuania	1.4
The Netherlands	0.1
Spain	0.1
Portugal	0.02
USA	3.3
Poland	0.1
Hungary	0.2
Japan	0.04
Romania	0.001
Switzerland	0.01
Others	10.6
TOTAL	42,171



# Strategic procurement areas





# Overview of planning investments 2024-2029 (in KEUR)

Cost category Users Programme	ELI ERIC					
(kEUR)	2024	2025	2026	2027	2028	2029
Instruments and Technology	22 356	12 651	12 777	12 905	13 034	13 165
Infrastructure	20 597	12 739	12 866	12 995	13 125	13 256
External Services and Specific costs	2 983	2 204	2 257	2 312	2 367	2 425
Rolling Investments/Projects	0	8 700	7 500	7 685	7 875	8 069
Cost category Users Programme	ELI BEAMLINES					
(kEUR)	2024	2025	2026	2027	2028	2029
Instruments and Technology	13 672	6 823	6 891	6 960	7 030	7 100
Infrastructure	8 297	6 449	6 513	6 579	6 644	6 711
External Services and Specific costs	771	1 297	1 323	1 349	1 376	1 404
Rolling Investments/Projects	0	6 500	4 000	4 080	4 162	4 245
Cost category Users Programme	ELI ALPS					
(kEUR)	2024	2025	2026	2027	2028	2029
Instruments and Technology	8 684	5 828	5 886	5 945	6 004	6 065
Infrastructure	12 300	6 290	6 353	6 416	6 481	6 545
External Services and Specific costs	2 212	907	934	962	991	1 021
Rolling Investments/Projects	0	2 200	3 500	3 605	3 713	3 825





## Categories of supplies with low number of spare parts suppliers

- Optics and opto-mechanics components
- Optics coating
- Detectors
- Electronics
- Data infrastructure
- Cyber security infrastructure
- Vacuum infrastructure
  - Vessels, valves, bellows



# ELI tender process and procurement rules

## 3 financial limits >> increasing formalization of the procurement process

- Contracts **below EUR 25 000**: procurement rules don't require formalised process, proper level of competition
- Contracts **between EUR 25 000 and 200 000**: simplified open or restricted procedure
- Contracts **above EUR 200 000**: more formalized procedures resembling the EU procurement law

2 types of procedure available:

**A) Open procedure** = Request for Quotations published on ELI ERIC web / certified on-line tool

**B) Procedure without publication** = At least 3 suppliers invited to bid without publication

- Deadline: typically 10 calendar days
- Tenders submission: paper envelopes/ on-line electronic



Basic option: **Open procedure** = Call for Tenders published on ELI ERIC web

**Other procedures** in specific cases: Competitive dialogue, Innovation partnership, Procedure with direct negotiations

- Deadline: 30 calendar days (20 if preliminary notice)
- Tenders submission: paper envelopes / on-line electronic



# 2024 concluded contracts by price and subject type

■ Building ■ Technology ■ Others

