



# Upcoming Tenders at CERN

Visit of the Polish Electric Power Industry Association

Floris Bonthond

*IPT-PI*

*07-06-2024*

# 60-wire planetary cabling machine

**Procurement Code:** 02 25 05 03

**Cost Range:** ≤ 750 k CHF

**Planning:** MS: published (MS-4905)

IT: Q3 2024

## **Description & Specific Conditions:**

Supply of a cabling machine for the manufacturing of Rutherford and round cables with up to 60 superconducting or copper wires.

Interested firms shall have a proven experience and competence in designing and manufacturing planetary cabling machines for metal wires.



**Contact:** [Thierry.Boutboul@cern.ch](mailto:Thierry.Boutboul@cern.ch)

# Fibre-glass braiding machine for HFM Programme

**Procurement Code:** 02 25 04 03

**Cost Range:** 200 kCHF ⇔ 750 kCHF

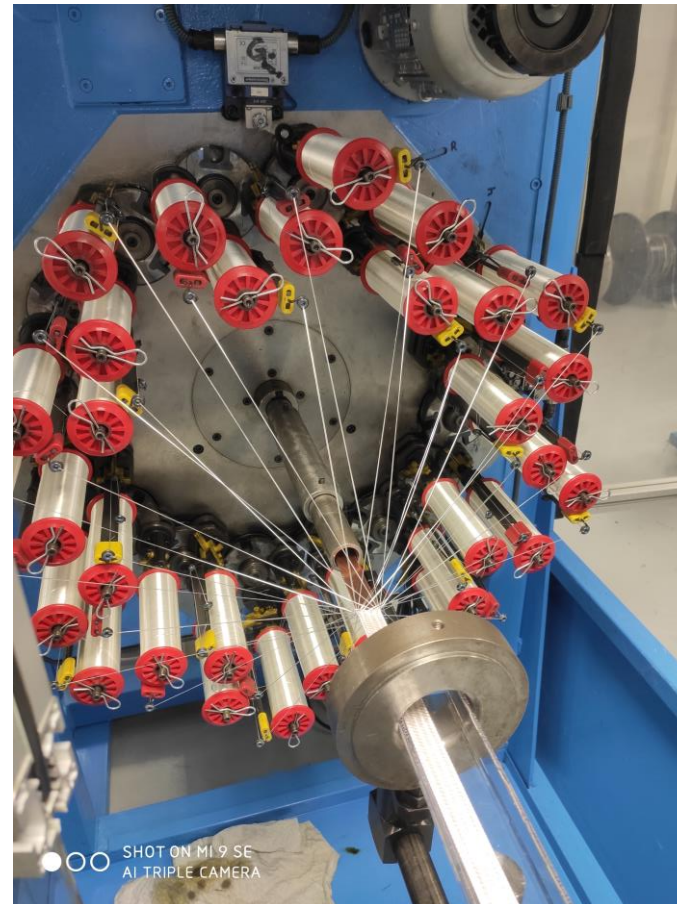
**Planning:** Tender: Q3 2024 - MS-4971/TE

**Delivery:** Q4 2024

## **Description & Specific Conditions:**

Supply of a fibre glass braiding machine for the insulation of superconducting cables:

- compatible with glass fiber;
- be equipped with a horizontal line with a horizontal pulling system;
- 32 carriers;
- a wind-off system for the cable drum;
- cable tension control;
- accurate braiding pitch regulation.



**Contact:** [Francois-Olivier.pincot@cern.ch](mailto:Francois-Olivier.pincot@cern.ch)

# Sensors for alignment

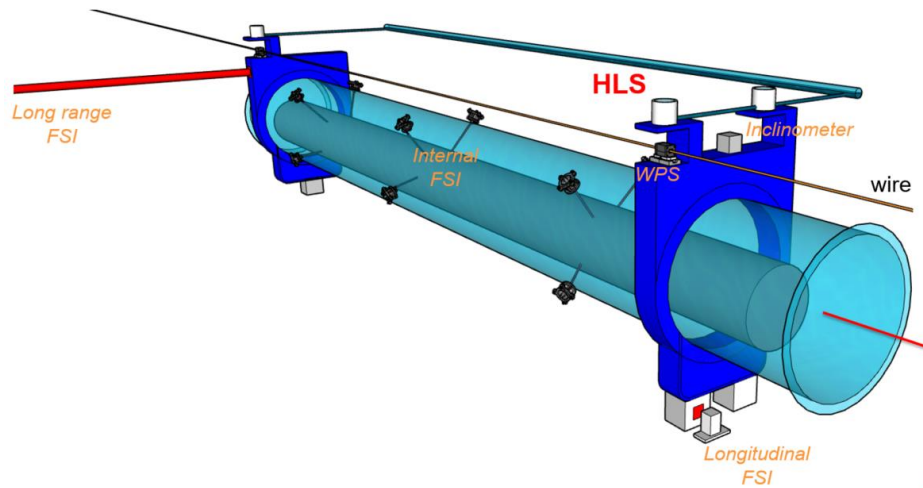
Cost Range :  $\leq 750$  k CHF

Planning: Q4 2024

## Description & Specific Conditions:

Alignment system including:

- Wire Positioning Sensors (WPS);
- Hydrostatic Levelling Sensors (HLS).



**Contact:** [Helene.Mainaud.Durand@cern.ch](mailto:Helene.Mainaud.Durand@cern.ch)

Capacitive WPS sensor

- X-Y measurement w.r.t. stretched conductive wire
- Accuracy  $< 5\mu\text{m}$ , Resolution  $< 1\mu\text{m}$
- Limited cable length (max. 30 .. 50 m)
- Conditioning electronics need to be RAD-TOL



# UPS 20-200 kVA

## Description & Specific Conditions:

Design, manufacture and supply of modular UPS.

CERN intends to place two contracts for the supply of:

- About 40 full modular UPS;
- High-Power UPS up to 3 MVA.

Procurement Code: 02 30 40 00

Cost Range: < 750 k CHF

Planning: MS-4959: Q2 2024, IT: Q4 2024

**Contact:** [Joel.Lahaye@cern.ch](mailto:Joel.Lahaye@cern.ch)



# Three Diesel Generators

## Description & Specific Conditions:

Supply, installation and maintenance of three diesel generators power stations (including the containers, the chimneys, the diesel tanks, the control systems, the testing and all the civil engineering works):

- One unit of 400 V 800 kVA ESP (replacement of an existing generator);
- Two units of 400 V 2MVA ESP (including chimney and diesel buried tank).

Interested firms shall have a proven experience and competence in:

- Design, supply, installation and commissioning of diesel generators power stations of an ESP (Emergency Standby Power system) of at least 2 MVA;
- Project management of a turnkey projects covering engineering, procurement, civil engineering works, installation, and commissioning of diesel generators;
- Civil engineering works following French regulations or an ability to evaluate, analyse and comply with them.

**Procurement Code:** 02 70 01 00

**Cost Range:** 750 kCHF ⇔ 5 MCHF

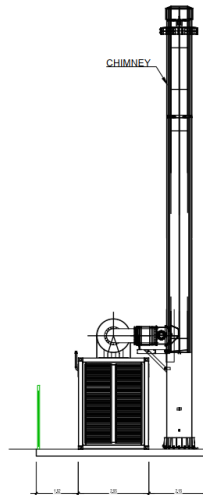
**Planning:** MS: published (MS-4974) / IT: Q3 2024

Pre-engineering (done by CERN) during 2024

Design + engineering during Q1 and Q2 2025

Start of commissioning Q4 2025

**Working on the CERN site:** France



**Contact: [Pablo.Valdes@cern.ch](mailto:Pablo.Valdes@cern.ch)**

# DCCTs 600 A – Standard and Radiation resistant

## Description & Specific Conditions:

Supply of current output DCCTs with 1000:1 ratio and 600A maximum current:

- 900 standard units;
- 636 radiation resistant DCCT's.

Five year blanket purchase contract.

Interested firms shall have a proven experience and competence in DCCT production during the last five years and shall propose off the shelf units.

Procurement Code: 02 10 09 00

Cost Range: 200 kCHF ⇔ 750 kCHF

Planning: MS: published (MS-4996)

IT: Q3 2024

**Contact:** [greg.hudson@cern.ch](mailto:greg.hudson@cern.ch)

# Power Modules 14 kA

## Description & Specific Conditions:

Design, manufacture and testing of power modules:

- 90 18kA, 10V;
- 168 3kA, 25V;
- 216 14kA, 8V.

Build-to-print.

Interested firms shall have a proven experience and competence in production and testing of power modules.

**Procurement Code:** 02 10 05 00

**Cost Range:** 750 kCHF ⇔ 5 MCHF

**Planning:** MS: published (MS-4854)

IT: Q3 2024

**Contact:** [Yves.Thurel@cern.ch](mailto:Yves.Thurel@cern.ch)





# Power Magnetics for 14 kA Power Modules

## Description & Specific Conditions:

Supply (production and test) of 580 Power Transformers and 580 Power Inductors that will be used for the series units of HL-LHC (14 kA;08 V) power converters.

Firms must have in-house facilities for the assembly and testing of the specified power magnetics and hold ISO9001-2000 quality certification or equivalent.

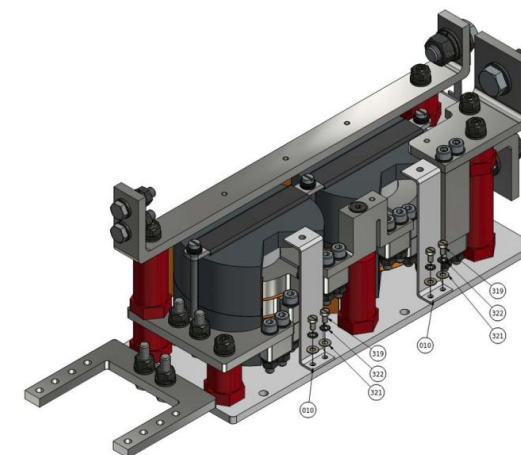
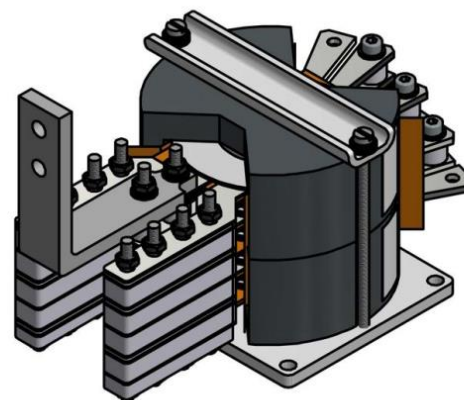
Procurement Code: 02 10 10 00

Cost Range: 200 kCHF ⇔ 750 kCHF

Planning: MS: published (MS-4982)

IT: Q3 2024

**Contact:** [Yves.Thurel@cern.ch](mailto:Yves.Thurel@cern.ch)



# Step-up transformers for RF LHC

## Description & Specific Conditions:

Supply of five oil tanks containing two identical transformers rated at 2MVA, 28kV/1kV each, insulated to ground at 60kV.

Each unit of this supply consists of two immersed oil transformers in one tank for outdoor use.

Interested firms must have in-house facilities for the production, assembly, and testing of Oil-immersed High Voltage Power transformers.

Procurement Code: 02 01 05 00

Cost Range: 200 kCHF ⇔ 750 kCHF

Planning: MS: published (MS-4979)

IT: Q3 2024

**Contact:** [davide.aguglia@cern.ch](mailto:davide.aguglia@cern.ch)



# Diode Bridge for RF LHC

## Description & Specific Conditions:

Supply of 5 air insulated and high-voltage diode bridge rectifier assemblies.

Each assembly shall be composed of sub-modules to compose a full diode bridge rectifier rated at 60kV- 40A<sub>dc</sub>.

Interested firms shall have in-house facilities for the production, assembly, and testing of the specified air insulated diode bridge rectifiers and shall have proven experience in the integration of High-voltage (up to 60kV 2.4MW) power electronics and in the use of standards for testing power electronic equipment.

Procurement Code: 03 01 02 09

Cost Range: 200 kCHF ↔ 750 kCHF

Planning: MS: published (MS-4976)

IT: Q3 2024

**Contact:** [davide.aguglia@cern.ch](mailto:davide.aguglia@cern.ch)

# Filter Choke for RF LHC

## Description & Specific Condition :

Supply of 5 units of oil-immersed High-Voltage filter chokes for twelve-pulse rectifiers.

The supply includes the production and testing of five oil tanks containing one filter choke (composed of at least 2 coils), rated at 2.4MW, 60kV each.

Interested firms must have in-house facilities for the production, assembly, and testing of Oil-immersed High Voltage Power inductors.

Procurement Code: 03 02 03 03

Cost Range: 200 kCHF ↔ 750 kCHF

Planning: MS: published (MS-4975)

IT: Q3 2024

**Contact:** [davide.aguglia@cern.ch](mailto:davide.aguglia@cern.ch)

# Fibre glass cable insulation

## Description & Specific Conditions:

3-year blanket purchase contract for the supply of an estimated length of 57 km of cables to be insulated.

Tailor-made insulation in fibre glass for magnet cables.

Production line shall be in a separate, dedicated space to avoid contamination.

The firm shall have a horizontal braiding machine which shall be dedicated for CERN products.

Key conditions:

- Clean room (grey, ISO8);
- Proven experience with fibre (glass) braiding;
- Proven experience with braiding around large rectangular cables;
- Proven experience with horizontal braiding systems.

Procurement code: 02 25 04 03

Cost Range: 750 k CHF ⇔ 5 M CHF

Planning: MS: published (MS-4968)

IT: Q3-2024

**Contact:** [Francois-Olivier.Pincot@cern.ch](mailto:Francois-Olivier.Pincot@cern.ch)



# Quadrupole Magnet Lamination (including electrical steel)

## Description & Specific Conditions:

Supply of 134 t of electrical steel with 10k laminations including the assembly of the punching tool and its storage, the lamination stamping and the complete metrology. The Supply shall be delivered within 36 weeks after entry into force of the Contract.

Key conditions:

- Production capacity;
- In-house tool production;
- Proven experience in production of large accelerator magnet/motor laminations;
- In-house metrology.

Start of the Contract: Q3 2024.

Procurement Code:

02 25 02 00

Cost Range:

200 kCHF ↔ 750 kCHF

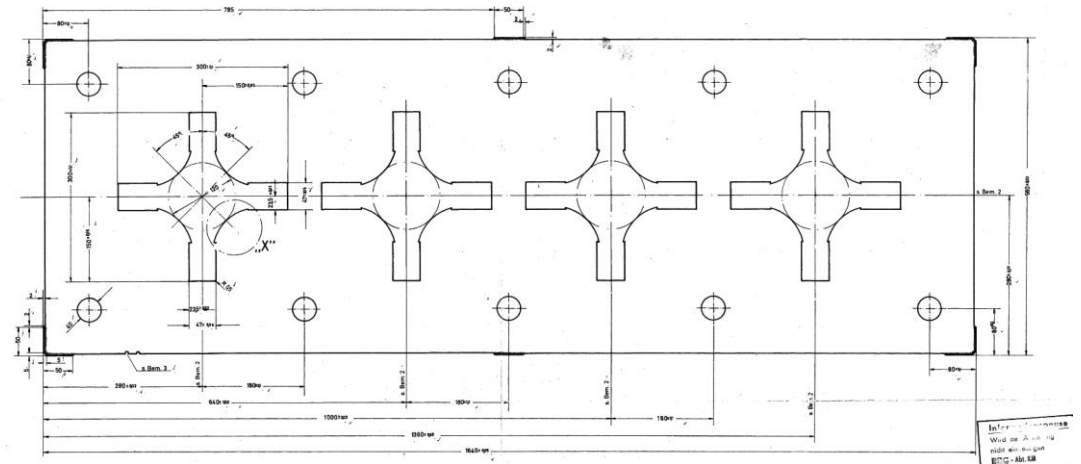
Planning:

MS: published (MS-4993)

IT: Q3 2024

**Contact:**

**[antony.newborough@cern.ch](mailto:antony.newborough@cern.ch)**



# Normal-conducting Electromagnets, Yokes, and Coils

## Description & Specific Conditions:

Assembly of eight focusing quadrupoles and four defocusing quadrupoles including the supply of normal-conducting electromagnets, yokes and coils, the design, the manufacturing of the tools and the tests. Pre-series shall be delivered within one year after the notification of the award of the Contract. The Series shall be delivered within one year after the acceptance of the Pre-series.

- Magnets:
  - Laminated (Air/Water Cooled) from 1 to 20 tons;
  - Solid (Air/Water Cooled) from 1 to 20 tons.
- Yokes:
  - Laminated (Air/Water Cooled) from 1 to 20 tons;
  - Solid (Air/Water Cooled) from 1 to 20 tons.
- Coils:
  - Length: Up to 1000 mm;
  - Length: From 1000 to 5000 mm;
  - Length: Above 5000 mm.

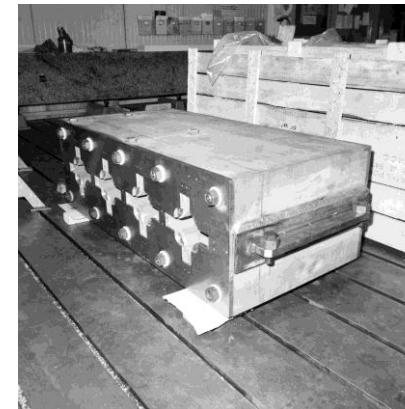
**Procurement Code:** 02 25 02 00

**Cost Range:** 750 kCHF ↔ 5 MCHF

**Planning:** MS: published (MS-4994)

IT: Q3 2024

**Contact:** [antony.newborough@cern.ch](mailto:antony.newborough@cern.ch)



# HL-LHC Crab cavities RF Circulators & Loads

## Description & Specific Conditions:

Supply of 18 circulators for the HL-LHC Crab cavities.

Key conditions:

- Design & manufacturing expertise: CERN will provide a functional specification and the Contractor shall design and manufacture accordingly (Detailed Design File to be approved by CERN);
- Capacity to manufacture 18 units in less than 3 years;
- Proven experience with circulators and loads for High Power RF Systems.

Start of the Contract: Q1 2025.

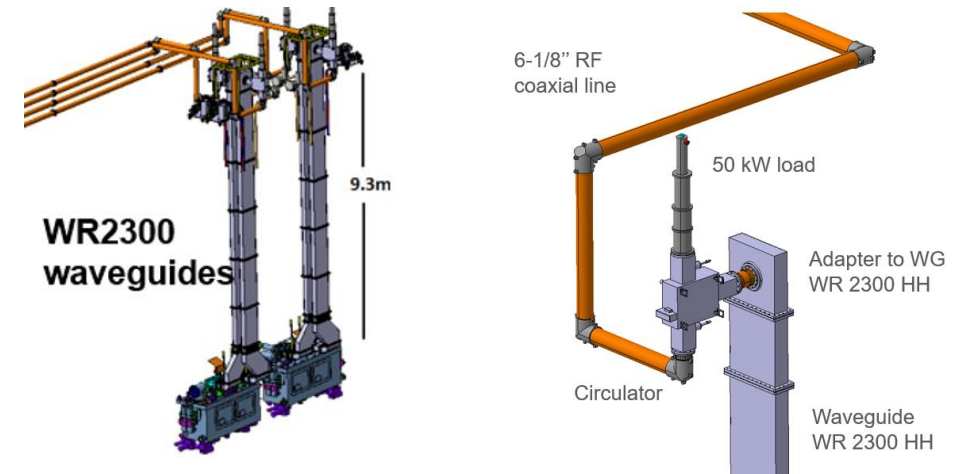
Procurement Code: 03 06 01 00

Cost Range: 750 kCHF ↔ 5 MCHF

Planning: MS: Q3 2024

IT: Q4 2024

**Contact:** [eric.montesinos@cern.ch](mailto:eric.montesinos@cern.ch)





# HL-LHC Crab cavities HPRF stations

## Description & Specific Conditions:

Supply of 18 High Power Radio Frequency stations powering IOTs for the HL-LHC Crab cavities.

Key conditions:

- Design and manufacturing expertise in HPRF equipment;
- Capacity to produce the systems in the required timeframe.

Start of the Contract: Q1 2025.

Procurement Code: 03 06 01 00

Cost Range: 5 MCHF ↔ 10 MCHF

Planning: MS: Q3 2024

IT: Q4 2024

**Contact:** [eric.montesinos@cern.ch](mailto:eric.montesinos@cern.ch)



Thank you



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