REQUEST FOR PROPOSAL (RFP)

1. INVITATION

The Brazilian Center for Research in Energy and Materials – **CNPEM** invites your company to participate in this Request for Proposal for: **ELECTRIC HEATER FOR COLD NITROGEN GAS**.

2. CONTEXT

The Brazilian Center for Research in Energy and Materials (**CNPEM**) is a private non-profit organization supervised by the Ministry of Science, Technology, and Innovation (**MCTI**). Located in Campinas, SP, CNPEM houses four world-class laboratories open to the scientific and business community:

- **National Synchrotron Light Laboratory (LNLS)**, operating the only synchrotron light source in Latin America – the new Brazilian fourth-generation accelerator, Sirius – used for analysis of various organic and inorganic materials;
- **National Biosciences Laboratory (LNBio)**, conducting cutting-edge research in the life sciences, focusing on biotechnology and pharmaceuticals;
- **National Biorenewables Laboratory (LNBR)**, dedicated to biotechnological solutions for the sustainable development of advanced biofuels, biochemicals, and biomaterials using Brazilian biomass and biodiversity;
- **National Nanotechnology Laboratory (LNNano)**, performing research on advanced materials with high economic potential for the country.

CNPEM promotes a research and innovation environment in the areas of Health, Energy and Renewable Materials, Agricultural and Environmental Sciences, and Quantum Technologies. Since 2022, with the support of the Ministry of Education (**MEC**), CNPEM also offers an interdisciplinary higher education program through the **ILUM School of Sciences**, focusing on Science, Technology, and Innovation. This program provides full-time, free education fully immersed in CNPEM's research environment.
For more information, visit: www.cnpem.br

3. GENERAL INFORMATION

Proposals and relevant documentation should be sent via e-mail to the purchasing contact:

Name: Murilo Rodrigues Martins
E-mail: murilo.martins@cnpem.br

Technical evaluation contact:
Name: Alvaro Luis Cerone Rosa
E-mail: alvaro.cerone@cnpem.br

4. SCHEDULE

Date	Event
25/11/2026	RFP Issuance
09/12/2026	Proposal submission deadline
09/12/2026-11/12/2026	Proposal evaluation period
17/12/2026	Expected issuance of purchase order

5. RELATED DOCUMENTS

The following attachments are integral parts of this RFP (previously sent to participants):

- Technical Specification
- CNPEM website publication

6. PROCEDURES

PRICE PROPOSAL REQUIREMENTS

- Commercial Proposals must be submitted separately;
- Full identification and address of the participant;
- Price table with unit and total values, expressed numerically and in words, excluding financial charges or adjustments;
- Minimum payment term: 30 days after issuance of the invoice or CAD;
- Delivery timeline for the items;
- Delivery terms (Incoterms);
- Proposal validity: 30 days from the submission date.

EVALUATION CRITERIA

- Document review;
- Commercial evaluation – price, payment terms, delivery time, warranty.

INVOICING AND PAYMENT

- Invoices must be issued according to Purchase Order milestones; payment as agreed.

7. ADDITIONAL INFORMATION

Failure to comply with the requirements of this document exempts CNPEM from any penalties and may lead to the rejection of materials or services in cases of discrepancies or non-compliance. Invoices must contain banking information and be sent to the **responsible buyer** and to **comex@cnpem.br** at least 28 days prior to the due date.

8. BILLING AND DELIVERY INFORMATION

CENTRO NACIONAL DE PESQUISA EM ENERGIA E MATERIAIS – CNPEM
Rua Giuseppe Máximo Scolfaro, 10.000 – Polo II de Alta Tecnologia
CEP: 13083-100 – Campinas/SP, Brazil
CNPJ: 01.576.817/0001-75
Please also include on the invoice:

- Purchase Order number (and Contract, if applicable);
- Complete description for each item;
- Supplier/Manufacturer Part Number;
- Net Weight per item (must be listed at least on Packing List);
- Incoterms 2020;
- Payment Terms;
- Banking information;
- Manufacturer and Country of Origin;
- Project information: **FONTE DE RECURSO SIRIUS FASE 2**

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CNPEM
Brazilian Center for Research
in Energy and Materials

Technical Specification

Heater for Cold Nitrogen

GSC-012-26



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DATE	REVISION	DESCRIPTION
01/04/2026	1.0	Versão inicial

AUTHORS	GROUP	SIGNATURE
Alvaro Luis Cerone Rosa	**GSC**	Alvaro Cerone
Henrique Ferreira Canova	**DMU**	HENRIQUE FERREIRA CANOVA

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1 PURPOSE

This document defines the minimum technical requirements for the supply of an electric heater for cold nitrogen gas.

2 SCOPE OF SUPPLY

2.1 Process Parameters

2.1.1 Nitrogen inlet temperature: 80 K

2.1.2 Nitrogen outlet temperature: room temperature

2.1.3 Maximum operating pressure: 10 bar.g

2.1.4 No condensation shall occur on external surface of the heater

2.2 Mechanical Features

2.2.1 External housing shall be manufactured from AISI 304L

2.2.2 Nitrogen inlet and outlet connection shall be ½" NPT threaded connections

2.2.3 The heating element shall be removable and replaceable if necessary

2.3 Electrical Features

2.3.1 Nominal power rating: 4 kW

2.3.2 Power supply: 220V, 60 Hz, single-phase

2.3.3 The temperature control system shall use solid-state technology (SSR or SCR)

2.3.4 Integrated type K Thermocouple

2.3.5 Digital PID temperature controller

2.3.6 Display of Process Variable (PV) and Set Point (SP)

2.3.7 Temperature control accuracy: ±1 K

2.3.8 Control panel shall be fully assembled, tested, and factory-configured

2.3.9 The system shall be fully wired for field installation

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2.3.10 Ultra-low watt density heating elements

2.3.11 The heater and control panel shall operate safely under varying flow conditions

2.3.12 The control panel shall be manufacture from carbon steel and painted

3 DOCUMENTATIONS

3.1 Datasheet

3.2 General arrangement dimensional drawing

3.3 Electrical schematic diagrams

3.4 Recommended spare parts list

3.5 Operation and maintenance manual