

Call for Bids for:



Article 1. Subject

NEXT ENERGY 4 is an initiative promoted by Terna S.p.A., the Cariplo Foundation and Cariplo Factory S.r.l., the key company of the Cariplo Foundation, with the aim of supporting and promoting talented professionals and encouraging the growth of teams with innovative projects based around the theme of **“A leading role in energy transition”**, through research and the adoption of new solutions and technologies able to consolidate the flexibility of the electricity system and make it more reactive to change by improving its security, efficiency and sustainability.

The NEXT ENERGY 4 Call for Bids is divided into three distinct and separate parts:

1. **Call for Talents**, aimed at new graduates in the fields of Engineering, Mathematics, Physics, Statistics and Economics, who will join Work Groups focused on the development and management of innovative projects.
2. **Call for Ideas**, aimed at established teams and/or start-ups proposing innovative projects, which will be supported through an incubation programme.
3. **Call for Growth**, aimed at established and post-seed start-ups able to offer innovative solutions to suit Terna’s specific fields of activity.

Article 2. Areas of interest

The world of energy is undergoing a period of intense change. In response to this, Terna is aiming to facilitate the transition to a more efficient, safe and sustainable system.

This phase of energy transition brings with it new challenges, such as the advanced digitalisation of processes and assets, and the need to guarantee a secure supply and affordable energy service for businesses and families.

Sustainability, intended in the broad sense, remains the key element in these new challenges and energy system scenarios, and consequently represents the ideal basis for the fourth edition of NEXT ENERGY.

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In light of this, the areas of interest for the three Calls for Bids can be described as, but are not limited to, the following.

Call for Talents

- Innovation, Digitalisation and Energy Solutions
- System Operators
- Transmission Operators

Call for Ideas

- Solutions in the field of automation and applied robotics.
- Industrial Internet of Things, sensors, energy harvesting systems and solutions.
- Energy tech: aggregators, demand response, microgrids, Energy Management Systems.
- Systems designed to integrate the demand for electric mobility into the grid, e.g. Vehicle to Grid.
- Energy storage management systems and alternative storage systems, e.g. Power to X.
- Advanced Materials, advanced materials and systems for high-voltage electricity transmission.
- Environmental integration of infrastructure.
- Digital Systems for field operations, process digitalisation and on-site safety for operatives.
- Advanced Analytics for the energy system.

Call for Growth

- **Full Internet of things**
 - Sensors for online monitoring, such as small, reliable and low energy sensors. The solutions must be aimed at monitoring the electrical and environmental parameters of equipment and components used in electrical substations, electricity cables and high-voltage cables, and be suitable for use in the Italian Transmission Grid.
 - Hardware and software solutions which can automatically process geo-positioned images and data taken from helicopter surveys, visual on-the-ground inspections and meter

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readings in order to identify possible critical areas. Survey images are taken using LIDAR equipment and are produced as visual and thermal images.

- Energy harvesting systems to supply sensors positioned on lines.
 - Innovative systems for the collection and transmission of data gathered by sensors.
 - Use of robots for inspections and to conduct minor maintenance work on lines, undersea and underground cables and electrical substations.
- **Energy tech**
 - Solutions and devices to increase grid efficiency in the presence of a growing number of distributed energy systems, the possibility for active electricity demand management and the increase in the number of storage systems connected to the NTG and the distribution networks.
 - Systems to integrate and manage demand relating to electric mobility.
 - Solutions and devices to increase flexibility in electricity system management, also aimed at reducing line congestion.
 - Systems and devices to increase the resilience of individual components of the NTG.
 - **Advanced Materials & Sustainability**
 - New systems and materials to increase the performance of transmission grids.
 - Materials and cladding to increase the durability of transmission lines and equipment, particularly against the formation of ice and deterioration in saline or otherwise harsh environments.
 - New construction and operation materials (oil, gas, insulation) for all substation elements.
 - Solutions and devices aimed at further safeguarding the environment and environmentally friendly technologies, and their integration into the Italian electricity system.

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- Solutions and devices to mitigate the environmental impact of electrical and civil infrastructure in Italy, designed and constructed to reduce the overall use of resources according to the principles of the Circular Economy.
- Innovative methods to increase stakeholder engagement and encourage public approval of the works envisaged in the Electricity System Development Plan.
- Systems to mitigate the effects of adverse or extreme weather events.
- **Digitalisation, Data Management and Analytics**
 - Development of models, systems, technologies, tools and digital platforms to support processes used by all company departments on a daily basis (not only considering core business activities), able to enable Terna to implement new tools and services.
 - Hardware and software solutions able to support the purchase and management of the increasing amount of data that Terna manages on a daily basis. Solutions must be aimed at real-time data management, with a view to providing information to support the monitoring and management of the Italian Transmission Grid, both in terms of data analysis during the planning phase and the settlements usually performed by Terna. Data storage, big data management and data analytics systems.
 - Hardware and software solutions for assessing the status of Terna's assets (pylons, equipment and structural works), and to produce photorealistic and geo-positioned polygon mesh models which can be used with CAD/CAM systems, the classification of elements, components and systems and the identification of interferences, faults and/or anomalies, improving activities in the field thanks to back-office support and, therefore, facilitating maintenance and inspection activities.
 - Hardware and software solutions to be integrated with the tools used to support Terna's Computer Emergency Readiness Team (CERT) and able to provide information of Cyber Threat Intelligence relevant to Terna, based on sources and data from the Deep/Dark Web. Particular focus on solutions based on Big Data Analytics and with technical evidence (e.g. data, mechanisms, modes, Indicator of Compromise - IoC, etc.) and with reference to emerging or existing threats in the context of Terna's Cyber Security.

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- Optimum grid design, smart asset management models and methods, and predictive infrastructure maintenance.
- Digital solutions and devices to support field operations, aimed at increasing the effectiveness of operations, the information available in real time to field personnel and safeguarding their health and safety in the workplace.
- Digital solutions and devices aimed at supporting the Observability of Distributed Generation (DG) and Data Exchange in order to fulfil the need for real-time visibility of DG and to implement the provisions of European Regulation 2017/1485, System Operation Guideline - SO GL (consultation no. 38 of 25/06/2018 Grid Code and annexes - Observability of data exchange).

Article 3. Requirements for the call for bids and application deadline

The **Call for Talents** is aimed at young, new graduates who, at the time of application:

- have earned a degree in Engineering, Mathematics, Physics, Statistics or Economics in the last 12 months;
- have received a score of no less than 110/110 or 100/100;
- are under 28 years old.

The **Call for Ideas** is aimed at existing teams of innovators and/or start-ups who, at the time of application:

- are developing projects based on initiatives and/or technologies with a TRL (Technology Readiness Level) of **3 to 6**, as defined in the Annex of Horizon 2020 - Work Programme 2014-2015 produced by the European Commission¹;

¹ http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf

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- include at least one member who is under 35 years old.

The **Call for Growth** is aimed at start-ups that haven't participated in previous editions of this Call and which, at the time of application:

- have already developed a client portfolio and/or have successfully tested at least one prototype and/or have a marketable product/service;
- work mainly in the EU;
- are developing projects based on initiatives and/or technologies with a TRL level of **6 to 8**, as defined in the Annex of Horizon 2020 - Work Programme 2014-2015 produced by the European Commission.

The final deadline for applications to the Call for Talents, Call for Ideas and Call for Growth, through the completion of the respective Application Form available on the NEXT ENERGY website (<https://nextenergy.cariplofactory.it/>), is **23:59 on 25 November 2019**.

Cariplo Factory S.r.l. reserves the right, should it deem necessary, to change the application methods and/or to extend the application deadline, publishing an announcement to this effect on the NEXT ENERGY website.

Please note:

- participation is free and does not represent any binding agreement or commitment of any kind beyond the conditions of the Call for Bids;
- all documents submitted as part of the application may be written in Italian or English;
- by submitting their application and the relative documents, applicants declare that the information provided is accurate and that all decisions of the Selection Committee, the Panel and the Terna Committee shall be accepted unconditionally;
- employees of Terna S.p.A., the Cariplo Foundation or their subsidiaries may not take part in the NEXT ENERGY 4 initiative.

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Article 4. Prize

Call for Talents

Ten new graduates will be selected for a six-month internship with Terna S.p.A., which involves:

- a structured training programme that will be held at the Terna Campus at Via Della Marcigliana 911 - 00138 Rome, focusing on content regarding the Italian electricity system, Terna's sphere of operation and other specific concepts of innovation, project management and safety;
- “on the job” training at one of Terna’s offices, as part of a team engaged in innovative management projects.

The selected new graduates will be awarded a grant of € 1,500 per month, before tax contributions, to cover expenses.

The new graduates who successfully complete the internship will be entered into an onboarding programme aimed at developing their abilities through job shadowing, continuous soft skills training and regular counselling sessions.

Call for Ideas

Up to a maximum of ten teams of innovators and/or start-ups will be selected for a three-month incubation programme at an accelerator/incubator selected by Cariplo Factory S.r.l. according to the needs of each team and/or start-up and their location.

As per Article 5, at the Final Event the best project will be awarded a **€ 50,000 voucher** which can be spent exclusively on services provided by the Cariplo Factory S.r.l. and its chosen accelerator to develop the project's acceleration and go to market process.

The voucher is non-refundable and may not be exchanged for cash.

Terna, at its sole discretion, reserves the right to acquire, with an exclusive right of first refusal, one or more of the projects according to the provisions of Article 12.

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Call for Growth

A maximum of five start-ups will be selected for access to the Open Innovation platform managed by Cariplo Factory S.r.l. as part of a course aimed at defining potential areas for synergy between the start-up and Terna.

The course described above (**Engage**), which will run for a maximum of four months, will aim to define a pilot project and testing activities which may eventually be implemented through a specific agreement with Terna.

Article 5. Initiative phases and deadlines

NEXT ENERGY 4 is structured as follows, with the deadlines indicated below:

I. Application submission:

For all Calls: until 23:59 on **25/11/2019**.

II. Assessment of applicants:

- a. **“Call for Talents”**: by **06/12/2019** a maximum of **120** candidates will be shortlisted for the final selection process (see section III).
- b. **“Call for Ideas”**: by **19/12/2019** a maximum of 20 projects will be shortlisted for the final selection process (see section III).
- c. **“Call for Growth”**: by **19/12/2019** a maximum of 10 projects will be shortlisted for the final selection process (see section III).

III. Final selection:

- a. **“Call for Talents”**: the candidates shortlisted by the Selection Committee pursuant to Article 7 will be invited, according to their location, to one of the two **“Selection for Talents”** events (Milan on **17/12/2019** and Rome on **19/12/2019**) during which ten new graduates will be selected for the internships.

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- b. **“Call for Ideas”**: the best projects will be evaluated by the Panel (according to Article 7) during the three-day **“Selection for Ideas”** programme (in Milan, **from 22 to 24 January 2020**), after which the best projects will be selected for entry to the incubation programme.
- c. **“Call for Growth”**: the best projects will be evaluated by the Terna Committee (according to Article 7) during a **“Selection for Growth”** programme (in Rome, on **28 January 2020**), which will select the start-ups to go through to the “Engage” phase, subject to the signing of the relevant confidentiality agreements to protect all those involved.

IV. Operational stage:

- a. **“Call for Talents”**: from **20/01/2020** to **17/07/2020**.
- b. **“Call for Ideas”**: from **17/02/2020** to **30/04/2020**.
- c. **“Call for Growth”**: from **17/02/2020** to **30/06/2020**.

V. Final Event for the **“Call for Ideas”**: in Milan, by **29/05/2020**.

Terna S.p.A. and Cariplo Factory reserve the right, as agreed between themselves and where deemed necessary, to modify the stages and deadlines described in this article and the application submission methods, and/or to extend one or more of the submission deadlines indicated herein, giving notice to this effect on the NEXT ENERGY website (<https://nextenergy.cariplofactory.it/>).

Article 6. Submission of applications

Candidates must submit their applications by completing the Application Form available on the NEXT ENERGY website (<https://nextenergy.cariplofactory.it/>).

The application involves:

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For the Call for Talents:

- a. Completion of the online Application Form (personal data and fields concerning motivational aspects)
- b. CV and academic record
- c. Video presentation (max. 3 minutes)
- d. Any attachments (dissertation, project work, etc.)

For the Call for Ideas:

- a. Completion of the online Application Form, indicating the project and the members of the team (each application must provide a reference).
- b. Upload of attachments such as:
 1. CVs of team members
 2. Slide deck of the project presentation in free text format (max. 30 slides)
 3. Scientific publications or other industry publications, proceedings papers, etc.
 4. Any technical annexes, tables or other useful documents (optional, max. 10 pages)
- c. URL of a video pitch uploaded to a free platform (YouTube, Vimeo), in which the team presents and describes the project (4/7 minutes), including through the use of animation and demos. If the video is password-protected, the access code must also be provided.

For the Call for Growth:

- a. Completion of the online Application Form, indicating the project and the members of the team (each application must provide a reference).
- b. Upload of attachments such as:
 1. CVs of management/team members

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2. Slide deck of the project/product presentation in free text format (max. 30 slides)
 3. Scientific publications or other industry publications, proceedings papers, etc.
 4. Technical annexes, any patents, product brochures already available on the market or any other relevant documentation
- c. Financial information and statements, with proof of any loans or grants already received.
 - d. Current client portfolio

Article 7. Assessment of applicants and final selection

Call for Talents

A Selection Committee, composed exclusively of Terna S.p.A. personnel, will review the applications received that comply with the criteria of Article 3 and will select the applicants who will be entered into the final selection and invited to attend one of the two “**Selection for Talents**” (Milan and Rome) according to Article 5, during which **10** new graduates will be selected for the internships.

Call for Ideas

All of the applications received that comply with the criteria of Article 3 will be reviewed by a Selection Committee, composed of representatives from Terna S.p.A. and Cariplo Factory S.r.l., who will examine the applicant teams. The selected teams will be judged by a Panel composed of nine representatives - three from each - of Terna S.p.A., the Cariplo Foundation and Cariplo Factory S.r.l. In particular, at the end of the “**Selection for Ideas**” pursuant to Article 5, the Panel will select the projects to be entered into the incubation programme, and, at the end of said programme, at the Final Event described in Article 5, the Panel will evaluate the results and award the prize pursuant to Article 4 to the best project.

Call for Growth

All applications that meet the criteria of Article 3 will be assessed by a Selection Committee, composed of representatives of Terna S.p.A. and Cariplo Factory, in order to select the start-ups to be entered into the “**Selection for Growth**” pursuant to Art. 5, during which a Committee composed

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exclusively of personnel from Terna S.p.A. will select up to a maximum of five start-ups to be entered into the “Engage” programme pursuant to Article 4.

Article 8. Assessment criteria

Call for Talents

- Academic career
- Motivation
- Training and/or professional experience in the fields of interest of the Call for Bids

Call for Ideas

- Fulfilment of a need/necessity
- Innovativeness of the solution
- Technological impact
- Technical viability and economic sustainability
- Quality and competency of the team
- Scalability/reproducibility

Call for Growth

- Value of proposition presented by the start-up with regard to Terna's areas for strategic development
- Innovativeness of the technological solution, quality, skills and proof of team execution
- Scalability of the proposed solution/market potential
- Compatibility of the proposed solution with Terna systems

Article 9 Protection of privacy and confidentiality

Under the terms of Article 13 of the General Data Protection Regulation (Regulation 2016/679 (EU) of the European Parliament and of the Council of 27 April 2016), applicants are informed that the

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processing of personal data provided by them in the context of this initiative or in any case acquired for such purpose by the controllers is used solely for the purpose of carrying out the activities envisaged by this Call and will be carried out by the persons in charge of the relative assessment process, also with the use of computerised procedures, in the manner and within the limits necessary to fulfil the aforementioned purpose, also in the case of communication to third parties.

The independent data controllers are Cariplo Factory S.r.l. with registered offices at Via Daniele Manin 23 - 20121 Milan, Italy, and Terna S.p.A., with registered offices at Viale Egidio Galbani 70, 00156 Rome, Italy.

All persons involved in any stage of this Call for Bids and afterwards guarantee the confidentiality of the information concerning the ideas and projects presented. In this regard, candidates selected for the Engage and Call for Growth programmes must sign a confidentiality agreement.

Provision of such data is necessary in order to verify the participation requirements; failure to disclose such data may preclude this verification. Candidates are afforded the rights set forth in articles 15 et seq. of aforementioned Regulation 2016/679, in particular, the right to access their personal data; request the correction, deletion, limitation of the processing thereof; oppose the processing thereof, on request addressed to the data controllers cited above.

Data subjects also have the right to lodge a complaint with the Personal Data Protection Authority (Article 77 of the Regulation), or appeal to the appropriate courts (Article 79 of the Regulation).

The projects selected for the “Call for Ideas” will be made public.

Article 10 Limitation of liability

Terna S.p.A. and Cariplo Factory S.r.l. do not accept any responsibility for technical malfunctions, hardware or software faults, network connection failures, failed, incorrect, incomplete, inaccurate, illegible, damaged, lost, incorrectly addressed or intercepted registrations, or applications that, for any reason, were not received, delayed electronic or other communications, or any other technical issues concerning the registration and uploading of content in the context of this initiative.

Terna S.p.A. and Cariplo Factory decline any form of partial or total reimbursement or compensation for any damages to property and/or persons caused by the participants or by third parties in the course of the various stages of the Call for Bids.

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Article 11 Guarantees, indemnities and liability

Participants in the NEXT ENERGY 4 initiative guarantee that the submitted content:

- does not contain unlawful material which is prohibited by law or goes against the indications of this Call for Bids;
- does not contain material in violation of the rights, positions or claims of third parties (with reference to copyright law, industrial property law and other applicable laws or regulations);
- is freely and legitimately usable in accordance with the provisions of this Call for Bids, as the participant is the owner of the rights to use them, or has acquired the appropriate consent from all other entitled parties, having ensured the full compliance and/or fulfilment of the rights, also of an financial nature, due to the authors of the contents and/or the works from which such contents are derived and/or extracted, or due to other entitled parties, or otherwise due as a result of the use of related rights pursuant to law.

All participants in the NEXT ENERGY 4 initiative declare that they are aware of the liability, including criminal liability, which they may become subject to in the case of non-veracity of the contents of the projects submitted and/or in the event of false declarations concerning the requirements of said projects for the purposes of participation in the initiative regulated by the Call for Bids, indemnifying Terna S.p.A. and Cariplo Factory S.r.l. against any third party claim.

Article 12 Intellectual property and confidentiality

The material and intellectual property presented with the applications submitted by participants remains the exclusive property of the respective owners. Terna S.p.A. and Cariplo Factory S.r.l. have the right to use said property exclusively in reference to the NEXT ENERGY 4 initiative.

If, at the end of the acceleration programme envisaged in the Call for Ideas or the Engage programme envisaged in the Call for Growth, patents which may be eligible for protection pursuant to current copyright laws should emerge (including but not limited to software, hardware, publications, etc.), Terna S.p.A. shall be granted first refusal for the exclusive purchase, until

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31/12/2020, of the rights to the aforementioned industrial patents, if such rights are subject to transfer/sale by the legitimate owners.

All participants in NEXT ENERGY 4 undertake to keep the information acquired as part of the initiative strictly confidential.

In any case, all start-ups and teams of innovators selected for the “Call for Ideas” and “Call for Growth” undertake to inform Terna of any relations with other parties, including if such relations concern activities and/or projects not included in the initiative regulated by this Call for Bids.

Article 13 Acceptance of the Call for Bids

Participation in the initiative implies the total and unconditional acceptance of this Call for Bids, which the participants declare to have read, understood and accepted.

Failure to accept the Call for Bids and/or the incomplete, inaccurate or false completion of the application form by applicants shall result in disqualification from NEXT ENERGY 4 and the loss of all rights to compensation.

Article 14 Updates to the Call for Bids

Any updates to the Call for Bids shall be published on the website nextenergy.cariplofactory.it and shall become binding upon publication.

Article 15 Applicable law and jurisdiction

This Call for Bids is regulated by Italian law.

All disputes are under the exclusive jurisdiction of the Court of Milan.