

Enel GP Innovation Competition Regulations

1. Introduction

Enel Green Power S.p.A. (hereinafter "Enel GP"), the Enel Group company dedicated to developing and managing worldwide energy generation from renewable sources is looking for low-cost solutions for technical issues and problems that Enel GP group encounters in its daily renewable energy production activities. To this purpose, effective on 24/04/2018, Enel GP has launched on Enel group Open Innovability platform [www.openinnovability.enel.com] an innovation competition on one (1) issue to be solved (hereinafter the "Competition").

2. Description of the issue

The Competition is relevant to the following issue:

1) Reduction of offensive odors in Muña reservoir and pumping station (Colombia)

To reduce the impact of offensive odors in the Muña reservoir and the pumping Station in Colombia, Enel Green Power is looking for solutions to reduce offensive odor emissions due to some gases (e.g. H₂S). According to the Environmental Management Plan, a quarterly periodicity is established in the measurement of odors, in which the results must be presented in the respective environmental compliance reports on an annual basis.

A complete description of the issue is attached to these Regulations as ANNEX 1.

3. Definition of Submission

The proposer who takes part to this Competition (hereinafter the "Applicant") will submit information through ENEL group Open Innovability platform [www.openinnovability.enel.com] related to the issues described in paragraph 2 (collectively referred to as the "Proposal").

4. Payment

The best Proposal will be paid with 5,000 euro. If no Proposal is deemed deserving by Enel GP's evaluation committee, no prize will be awarded. If the winning Proposal is submitted by a team, the payment shall be made to the team representative and it will be the sole responsibility of the latter to distribute it among the team participants. However if withholding taxation or different tax treatment are required for the members of the team, payment will be made pro quota to each of them. If more than one proposal is selected, the prize amount will also be distributed pro quota among the winners (ex aequo). If the winning Proposal is submitted by a legal entity, the representative must be empowered to receive the payment in the company's name.

Payment will be made in Euros, or if required by the winner's local law, in its local currency equivalent based on the foreign exchange rate in effect on the date of the communication to the winner of the outcome of the Competition. The above amount represents a complete payment, net of any local taxes that Enel GP may be required to withhold, for any Accepted Proposal and the winner is not entitled to any other compensation of any kind. If local law does not require withholding of taxes, all taxes on the payment shall be the winner's sole responsibility. When applicable under the relevant tax regulations, payment will be made upon receipt of invoice.

5. Eligibility of participants

The Applicant, if a natural person, (as well as the natural persons in his/her team) must be at least 18 years old and have age of majority and legal capacity in the jurisdiction where he/she resides.

Eligibility will not however be granted to people involved in the organization and management of the Competition or admitted to the Open Innovability Portal back office, nor to their spouses or partners and their relatives up to the fourth degree determined according to Italian law.

Also, employees of the companies of the Enel Group who have worked in the technical sector of the hydro or geothermal field or in the Procurement department, as well as their spouses or partners and their relatives up to the fourth degree, are not eligible for participation. Single natural persons, legal entities, as well as teams participated by natural persons and/or entities are allowed to participate. In case the participation in the Competition is made by a team or legal entity, the Proposal should be submitted by a representative who shall be the only contact person for the team or legal entity in relation to the Competition and shall have full representation powers and responsibility towards the team or legal entity. By applying to the Competition, the Applicant represents and warrants that:

- 1) He/she and the member of his/her team are eligible to participate in the Competition. With regard to the eligibility criterion requesting the absence of any lien of kinship or marriage with the people involved in the organization and evaluation process of the Competition and the people of the Enel Group who have worked in the technical sector of the hydro or geothermal field or in Procurement department, it is the Applicant's responsibility to verify with the members of his/her kinship or spouse or partners (or with his/her team members' or legal entity's top management's kinship or spouse) whether any of them is connected in anyway with the Competition and request (by e-mail to scouting_innovation_egp@enel.com), if necessary, any additional information to EGP to fulfill such obligation;
- 2) All the information contained in his/her Proposal is true, accurate and complete;
- 3) He/she has viewed and accepts the privacy policy of the Enel Open Innovability platform;
- 4) The Applicant owns all the rights, including, but not limited to, all intellectual property rights and/or has obtained any and all consents, approvals, or licenses required in order to make the Proposal and by participating to the Competition no third party rights are breached; Enel GP is not requested to verify the authenticity of the ownership of the rights of the proposal and any issues derived from third party claims that may arise are the solely responsibility of the applicants; nonetheless, Enel GP reserves the right to disclose the identity of the Applicant to any third party claiming that the material posted or uploaded by the Applicant to the Competition platform [www.openinnovability.enel.com] constitutes a violation of their IPRs, or their confidentiality/privacy rights. Enel GP reserves the right to ask for additional evidence or documents to validate that all information supplied by applicants is true and complete;
- 5) In case The Applicant is an employee of a legal entity, he/she is responsible for ensuring that his/her participation in the Competition complies with any policy of his/her corporation, agency, or institution may have regarding participation in contests of this type. If Enel GP has reason to believe that the Applicant may violate any of those policies, Enel GP reserves the right to prohibit the participation in the Competition or withheld the payment at any time.
- 6) If the Applicant is an employee of one of the Enel group companies, he/her undertakes to perform all activities necessary for the preparation and submission of the Proposal outside of his/her working obligations ;
- 7) The Applicant has not breached any laws in his/her country of residence regarding the legality of entering the Competition;
- 8) The Applicant is not in a position of conflict of interest with the Competition;
- 9) His/her Proposal does not: (i) violate the rights — including, but not limited to, copyrights, trademark rights, patent rights, or privacy rights— of any third party; (ii) prominently feature any trademarks or logos; (iii) contain content that is defamatory or in violation of any law, irrelevant to the Competition, or otherwise inappropriate, as determined by Enel GP, in its sole discretion;
- 10) The Applicant releases and undertakes to hold harmless Enel GP, and its subsidiaries, affiliates, employees and agents from any and all liability or any injury, loss or damage of any kind arising from or in connection with this Competition or any prize won.

Enel GP informs that Enel Group in managing the business activities and the relationships refers to the principles contained in its Code of Ethics, in the Zero Tolerance Plan against the corruption and in the Compliance Program pursuant to Italian Legislative Decree 231/2001 (available at www.enel.it, section "Company"). The Applicant shall comply with equivalent principles in conducting hereunder your business activities and in the management of your relationship with third parties.

Enel GP reserves the right to reject any Proposal that does not comply with these Regulations.

6. Application

Proposals will be submitted exclusively online through the Enel Group Open Innovability platform [www.openinnovability.enel.com] and shall be exclusively in English. Proposals submitted by any other means will not be considered. Proposals will be submitted in a single stage, by submitting an online Proposal, which will include:

- 1) Information about the Applicant; in case the Applicant is a team or legal entity, the natural person submitting the application shall be automatically treated as the team or legal entity authorized representative; in case the Applicant is a team, each team member must meet the eligibility criteria set forth above and must be indicated in an attached file "TEAM Composition";
- 2) Information about the Proposal [for more details, please read the issue description and the ANNEX 1];
- 3) A list, which shall specify all rights of ownership and use in the pre-existing intellectual property rights, see Article 8 below.
- 4) Possibility to upload documents for a maximum of 5 files

Applicants are strongly recommended not to wait until the last minute to submit the Proposal. Failure of the proposal to arrive in time for any reason, including extenuating circumstances, will result in rejection of the Proposal.

7. Phases and deadlines

The Competition is structured in the following steps:

Phase 1 – Submission

It will be possible to submit Proposals on the Enel Group Open Innovability platform [www.openinnovability.enel.com] from April 24, 2018 to May 31, 2018 (within 23.59 CET). Enel GP may decide to extend the deadline, for a maximum of additional 30 days.

In order to be eligible for evaluation, Proposals should be complete and submitted before the deadline through the Competition platform; Applicants must accept these Regulations, the Terms of Usage and Private Policy of the Open Innovability platform, as well as declare under their own responsibility the ownership or right of usage of any intellectual property rights involved in the proposal and the absence of conflicts of interest.

Each submission must include the following:

1. Detailed description of the proposed solution that must meet the Solution Requirements reported in the description of the Challenge (see the platform and Annex 1).
2. Rationale as to why the Applicant believes that the proposed solution will work. This rationale should address each of the Solution Requirements and in general described in the Detailed Description and Background should be supported with relevant examples.
3. Data, drawings, case studies, references or any additional documents that supports the proposed solution.

Communication to participants: after a formally valid submission, the applicants will receive a confirmation by email.

Phase 2 – Evaluation

Enel GP, availing itself of both internal and external resources, as deemed fit, will evaluate the Proposals from June 01 2018 to July 15, 2018 (within 23.59 CET), with a proportionate postponement in case of extension of the submission deadline. The Proposals must satisfy the requirements specified in ANNEX 1 and they will be evaluated based on the criteria below (in order of importance):

- 1) Technical feasibility and potential: the proposed technological solution can be used and has a high level of quality and distinctiveness
- 2) Economics: Accuracy and credibility of the costs/benefit analysis

- 3) Business Potential: Relevance of the technology proposed to generate economic value
- 4) Presentation of the Proposal: Completeness and clarity of the material.

The Proposals lacking major elements for their proper evaluation or manifestly unsubstantiated will be discarded.

Communication to participants: Specific communication will be sent to the winner and to the unselected applicants.

Phase 3 –Winner Announcement

By July 31, 2018 (within 23.59 CET), with a proportionate postponement in case of extension of the submission deadline, Enel GP will contact the winner asking for some additional information in view of payment which will be made to each winner by Enel GP within approximately 90 days after the completion of Enel GP's verification procedures and the submission by the Applicant of the required declarations. Payment is conditioned upon the winner's cooperation with Enel GP's verification procedures. An example of the required declaration is available as ANNEX 2 to these Regulations. Moreover Enel GP will ask the winner the tax code (or the VAT number if a legal entity) and a certification of the winner's signature from a Public Notary or its foreign equivalent.

After the payment to the winner, Enel GP will publish the name and the details of the winner of each issue with a description of their Proposal and the reasons for their choice on the Open Innovability platform, Enel.com and enelgreenpower.com websites and Enel Group's social channels (Facebook, LinkedIn and twitter).

8. Intellectual property rights

8.1 For the purpose of these Regulations, "Intellectual Property Rights" also abbreviated "IPRs" means rights in, to and under:

- i. inventions, patents, patent applications and statutory invention registrations;
- ii. know-how such as any information, including, without limitation, product designs, processes and processing methods, apparatus specifications, production specifications and techniques, raw material specifications and sources, test methods and standards, manuals, invention records, formulae, calculations, research records and reports, and marketing surveys and reports, which are possessed and known in any form whatsoever, whether communicated orally or embodied in plans, drawings, photographs, tapes, discs, memoranda, notes, reports, studies, or samples, and whether such information is patentable or unpatentable;

8.2 Participation in the Competition does not grant any protection to intellectual property rights ("IPRs"). Although the Proposals may refer to an innovative and creative use of already existing tools that cannot be protected as an intellectual property right, it is possible that IPRs are involved in the Proposal. In such case, Enel GP recommends that Applicants provide adequate protection to their IPRs prior to submission of the Proposal, as following the submission or any relevant information published on the Enel Open Innovability platform (including information about the winner) the IPRs may enter the public domain. Enel GP waives any liability connected to the use of unprotected IPRs by the applicants.

Where industrial and intellectual property rights, including rights of third parties, exist prior to the Competition ("pre-existing intellectual property rights"), Applicants shall establish a list which shall specify all rights of ownership and use in the pre-existing intellectual property rights and must submit this list when the Proposal is submitted as its attachment.

9. Enel GP rights on submissions

By entering this Competition It is also understood and accepted that

- 1) Enel GP has the right to (and is licensed to with no extra charges) (i) use, review, assess, test, and otherwise analyze Proposals and all their contents in connection with this Competition; and (ii) feature Proposals and all their contents in connection with this Competition (including but not limited to internal

and external presentations, tradeshow, and screen shots of the Competition entry process in press releases) in all media (now known or later developed);

- 2) The Applicant agrees to sign any necessary documentation that may be required for Enel GP and its designees to make use of the rights granted above;
Enel GP may have developed or commissioned materials similar or identical to the Proposal and any claims resulting from any similarities to the Applicant Proposal is waived;
- 3) Enel GP cannot control the incoming information disclosed to Enel personnel in the course of entering the Competition, or what Enel personnel will remember about any Proposal. It is also understood and accepted that Enel GP will not restrict work assignments of the personnel who have had access to the Proposal. By entering this Competition, the Applicant agrees that Enel GP cannot be held liable under this section or copyright or trade secret law for the use of information which Enel personnel may retain in their memories while developing or deploying our products or services;
- 4) After the winner announcement, Proposals may be posted on a website selected by Enel GP or viewing by visitors to such website. Enel GP is not responsible for any unauthorized use of the Proposal by visitors to such website. While Enel GP reserve these rights, is not obligated to use the Applicant's Proposal for any purpose, even if it has been selected as a winning Proposal.

10. Changes to Regulations

BY submitting the Proposals, Applicants acknowledge and accept that Enel GP could vary these Regulations at any time. This includes changes to dates for deadlines and events, locations or specifications of the Competition.

Enel GP will post any change to these Regulations on the Competition platform [www.openinnovability.enel.com]. Applicants should regularly visit the Competition platform to check if any update of the Regulations has been posted.

11. Conflict

In the case of any conflict between the terms of these Regulations and the Terms of Usage of the Open Innovability platform, these Regulations and their Annex 1 shall prevail.

12. Cancellation, changes or suspension of the Competition in case of irregularities in the Competition

If someone cheats, or a virus, bug, internet bot, catastrophic event, or any other unforeseen or unexpected event that cannot be reasonably anticipated or controlled (also referred to as force majeure) affects the fairness and/or integrity of this Competition, Enel GP reserves the right to cancel, change, or suspend this Competition. This right is reserved whether the event is due to human or technical error. If a solution cannot be found to restore the integrity of the Competition, Enel GP reserves the right to select winner from among all eligible entries received before Enel GP had to cancel, change or suspend the Competition. If any Applicant or member of a team attempts to compromise the integrity or the legitimate operation of this Competition, or if Enel GP has reason to believe that an Applicant or member of a team have compromised the integrity or the legitimate operation of this Competition by cheating, hacking, creating an internet bot or other automated program, or by committing fraud in any way, Enel GP may seek damages to the fullest extent permitted by law. Further, Enel GP may disqualify and ban any unfair participant from any future competition.

13. Costs and taxes

Any cost and tax relevant to the participation to the Competition or the receipt of payment shall be exclusively borne by the Applicants. Applicants are requested to check the applicable costs, duties and taxes according to the laws of the jurisdiction where they reside or where are otherwise obliged to pay taxes.

14. Limitation of liability

In addition to any other limitation of liability contained in these Regulations, Enel GP is not liable for possible deficiencies of the platform. Enel GP is not responsible for problems regarding computers, networks or any other reasons that may lead to lost, damaged or late entries.

15. Future collaborations

Winning the Competition does not give any other right than receiving the payment. Nevertheless, Enel GP may, at its sole discretion, negotiate with winner and other Applicants future agreements.

16. Governing law and jurisdiction

The Competition is ruled by Italian law. Any disputes shall be exclusively set by the Courts of Rome.

ANNEX 1 Challenge Description.

TITLE: Reduction of offensive odors in Muña reservoir and pumping station (Colombia)

ABSTRACT

To reduce the impact of offensive odors in the Muña reservoir and the pumping Station in Colombia, Enel Green Power (here after the **Seeker**) is looking for solutions to reduce offensive odor emissions due to some gases (e.g. H₂S). According to the Environmental Management Plan, a quarterly periodicity is established in the measurement of odors, in which the results must be presented in the respective environmental compliance reports on an annual basis.

DESCRIPTION

SCENARIO

In Colombia, Enel Green Power, through its subsidiary Emgesa, manages the El Paraíso and La Guaca hydroelectric plants that make up the Pagua chain. These run-of-river hydroelectric plants capture the waters of the Bogotá River from the Muña reservoir, which comes from the city of Bogotá, with a large amount of waste that produces polluting gases, mainly Hydrogen Sulfide (H₂S), which is a gas with a very offensive smell.

To fill the reservoir, a pumping station increased the water level of the Bogotá river towards the Reservoir, in order to have a reliable flow for the operation of the Guaca and Paraiso hydroelectric power plants

Reported odor emission rates at different points of the reservoir range from 8.0 to 52.5 ($\mu\text{g}/\text{m}^3$)

BACKGROUND

El Paraíso and La Guaca hydroelectric plants make up the Pagua chain. These run-of-river hydroelectric plants capture the waters of the Bogotá River from the Muña reservoir, which contain polluting gases, mainly Hydrogen Sulfide (H₂S), which is a gas with a very offensive smell. (See figure 1 of Annex 1)

MUÑA RESERVOIR

Located between the municipalities of Soacha and Sibaté, with a maximum water elevation of 2569.5 meters above sea level.

General characteristics.

Location	26 km south west of Bogotá
Source	water from the Bogota river
Área	950 Ha
useful volume	12,64 Hm ³
Total Volume:	25,80 Hm ³

MUÑA PUMPING STATION

It consists of three pumping stations, Muña I, Muña II and Muña III located on the banks of the Bogotá River. The objective of the stations is to raise the volumes of water from the Bogotá River in the Alicachín ponds towards the Muña reservoir in order to have a reliable flow of water for the operation.

MEASUREMENT OF HYDROGEN SULFIDE EMISSION, APPLYING THE METHODS OF ANALYTICAL AND SENSORIAL EVALUATION

The following table shows the values found for the measured emission factors in the two most important points, Alicachin Floodgates and Reservoir discharge (see figure 2,3 and 4 of Annex 1)

Location	Concentration ug/m ³	H2S at Exhibition time of 1 hour	H2S at Exhibition time of 24 hours
	ug/m ³	Limit (30 ug/m ³) (ug/m ³)	Limit (7 ug/m ³) (ug/m ³)
Reservoir discharge	3,1	19,6	8,0
Alicachín Floodgates	8,4	52,5	21,6

It is observed that the highest emission point was "Alicachin floodgate", it is at this point, where greater turbulence of the waters is generated when allowing the opening of the floodgates, suddenly increasing the speed of the water at this point, that promotes a greater volatilization of the compounds that form the odorous substances.

According to the Environmental Management Plan of the plant, an odors measurement with quarterly periodicity is established, whose results must be presented in the respective environmental compliance reports on an annual basis.

THE CHALLENGE

The **Seeker** is looking for solutions that can be applied to existing facilities to control the emissions of offensive odors and, possibly, evaluating their effectiveness through an exercise of on-site application and direct measurement. These solutions could be, for example, chemical substances.

Any proposed solution should address the following **Solution Requirements**:

1. The proposed solution should demonstrate quantitatively compliance with the parameters shown below, by means of a real application exercise on site and its direct measurement (before and after its application).

Pollutant	Maximum permissible levels (ug/m ³)	Exhibition time
Hydrogen sulfide H ₂ S	30	1 hour
	7	24 hours

2. The proposed method must be economically viable.
3. The proposed method should include the description of social impact on the local stakeholders (in qualitative and/or quantitative manner), clearly identifying the benefits the solution can bring to the local territory.

The proposed system should offer the **Seeker** “freedom to practice”.

ANNEX 2 EXAMPLE of WAIVER Declaration

Company (the “Employer”) is aware that _____ (the “Employee”) has suggested a solution for the Enel Open Innovability Challenge, entitled “TITLE” which the Employee has disclosed to Enel Green Power S.p.A. under a submission made on (DATE) accepting the Regulations of the Challenge and the Terms of Usage of the Open Innovability platform.

The Employer is aware that the solution submitted by the Employee won the Challenge mentioned above and the relevant prize will be awarded according to the condition already defined in the Regulations.

Employer hereby acknowledges that the above solution has been developed by the Employee exclusively for the Enel Open Innovability Challenge and not within the scope of the employment, and unconditionally, absolutely, and forever waives and releases the Employee from any obligation of assignment of the intellectual property rights to the Employer with respect to the solution developed for Enel Green Power S.p.A. and/or any of its nominees.

This letter is hereby executed by a duly authorized representative of Employer.