

V Call

Robotics and Image Recognition



1. GENERAL BACKGROUND

Transelec, Single Tax Role N° 76.555.400-4, domiciled for these purposes at Orinoco 90, Las Condes (from now on, the Company) is the main electric power transmission company in Chile, with more than 10,000 km of lines and 82 substations from the region of Arica and Parinacota to the region of Los Lagos. Transelec Ventures is its open innovation branch and launches out programs that seek to connect technology-based startups with various challenges of the company, as is the case of the Program object of these Program Bases, from now on the "Bases".

Transelec has decided to launch the fifth version of the "Transelec Ventures Open Challenge", whose objective is to support, validate and accelerate process, technology, product and other ventures, all of which must be innovative and with high scaling potential. The program will allow startups to connect directly with Transelec through a proposal based on a Venture Client model (possibility of becoming a strategic provider and scaling commercially).

For the purposes of these Terms and Conditions, the Company will assume that all members of the entrepreneurial team who apply to be part of this Program declare that they are aware of, accept and undertake to respect, for all applicable purposes, each and every one of the conditions and stipulations included in these Terms and Conditions. waiving from now on any subsequent claim with respect to these.

2. GENERAL OBJECTIVES OF THE PROGRAM

The purpose of these Terms and Conditions and the Program is to promote the initiative promoted by Transelec, with the purpose of convening and developing high-impact solutions in conjunction with entrepreneurs or innovative companies in the field of the energy transmission industry through processes, technology, products or services, in order to achieve alliances that allow the Company and the startups to become a customer/supplier and/or other option that could be defined between the parties.

3. CHALLENGES AND FOCUSES OF THE PROGRAMME - SPECIFIC OBJECTIVES

The main purpose of the Program is to collaborate with Startups or Companies that want and can solve the verticals defined by Transelec, which will be duly communicated on the program's website ([https:// www.transelec.cl/ventures/es/](https://www.transelec.cl/ventures/es/)).

4. ABOUT THE CHALLENGE – ROBOTICS AND IMAGE RECOGNITION

Remote Manipulation and Monitoring in Substations using Robotics and Image Recognition.

(I) CONTEXT OF THE CALL

Electrical substations are critical infrastructures for electricity transmission, and their operation requires both the manipulation of physical controls (knobs, buttons, levers, locking systems) and the constant monitoring of indicators and measurement parameters. Traditionally, these processes involve the physical intervention of operators in remote and potentially hazardous environments.

The challenge focuses on developing a comprehensive technological solution that allows both the remote manipulation of the physical controls of the substations and the remote reading of measurement systems. This solution should improve operator safety, reduce the need for physical travel, and optimize the efficiency and accuracy of real-time operations. By combining advanced robotics and image recognition systems, a solution that integrates precise handling and constant monitoring is sought.

(II) OBJECTIVE OF THE CHALLENGE

Develop technological solutions for the manipulation and remote monitoring of electrical substations using robotic systems and image recognition. This includes:

A. Develop innovative technological solutions that allow operators to remotely manipulate the control systems of electrical substations. This includes devices such as:

- Adjustment knobs.
- Tactile press buttons.
- Rotary levers.
- Pressure locking systems.

The solutions must be able to perform the functions of these operations remotely, considering the ability to move within substation rooms, on countertops, inside racks or in the substation yard.

B. Develop technological solutions that allow remote monitoring and real-time reading of the measurement systems of electrical substations, with a focus on:

- Remote monitoring of electrical parameters - reading data from meters and operating controllers. Some examples are: meters, levels, displays, signals and lights present in substation panels and equipment.
- Implement secure and resilient communication technologies to transmit data in real time.
- Data analysis and visualization in a clear and accessible way for operators.

(III) FOCUS AREAS FOR SOLUTIONS

A. Remote Manipulation of Physical Controls

- Develop robotic devices that allow remote movement and action on knobs, buttons and locking systems, with intuitive interfaces that emulate physical interaction.
- Use technologies such as IoT and robotic actuators to enable precise and secure control through remote systems, considering the possibility of programmed commands and automatic adjustments.

B. Image Recognition and Remote Indicator Monitoring

- Implement machine vision and OCR (Optical Character Recognition) systems to monitor and read data on measurement boards, counters, and other visual indicators, including moving them from one point to another inside the substation or control rooms.
- Develop centralised platforms that collect and display this data in real time, with the ability to move within the substation and analyse and generate alerts to anticipate failures and facilitate predictive maintenance.

C. Cyber Security and Communications Resilience

- Incorporate secure, low-latency communication technologies (such as 5G or low-power networks) to ensure that data and control commands are transmitted in real time, even under adverse conditions.
- Apply advanced authentication and encryption mechanisms to protect the system against unauthorized access or cyber threats.

D. Automation and Data Analytics

- Integrate data analysis and machine learning algorithms to predict and prevent failures in control and monitoring systems.
- Facilitate the automation of common and routine monitoring tasks, improving operational efficiency and reducing the need for physical interventions.

(IV) MOBILIZING QUESTIONS

1. What innovations in robotics and machine vision would allow physical interaction with substation controls to be replicated remotely and accurately?
2. How can we design control interfaces that allow operators to move inside a substation and remotely manipulate knobs, push buttons, type touch controllers and rotary levers, while maintaining precision and control of actions?
3. What emerging technologies (IoT, robotics, augmented reality, etc.) can be used to replicate physical interaction with substation controls remotely, ensuring an intuitive and effective experience?
4. How can we ensure that remote manipulation solutions are secure, avoiding unauthorized access or malicious interventions against unauthorized access, with advanced authentication and encryption mechanisms so as not to compromise the security of operations?
5. How can we integrate emerging technologies (IoT, machine vision, OCR, Optical Character Recognition, 5G, smart sensors) to remotely and efficiently monitor current metering systems of electrical substations?
6. What technologies can ensure the reliability and security of remote data transmission in challenging industrial environments such as substations?

7. How can we automate the monitoring of the operation of substation controllers and meters, reducing the need for manual intervention?

8. How could data analytics be applied to predict failures and enable predictive maintenance, reducing downtime and operating costs?

9. How to ensure the scalability of this solution to suit substations of different sizes and locations?

(V) KEY OBJECTIVES

- Operational Safety: Allow operators to manipulate and monitor control and measurement systems remotely and safely.
- Efficiency and Accuracy: Optimize response times and improve the accuracy of remote operations, minimizing the risk of errors and accidents.
- Reliability and Scalability: Ensure that solutions are robust to adverse grid conditions and can be applied in substations of various types and scales.

5. ABOUT THE PARTICIPANTS

This Program will be open to all those Startups and/or Companies that develop projects that aim at innovation in any type of process or product, related to the Company's field, as well as the challenges posed on the website. In this way, and considering the needs of the Company, this application is open to both Chilean and foreign Startups and/or Companies.

In order to participate in the Program and adhere to these Bases, interested Companies or Startups (hereinafter the "Participants") must have solutions that can be implemented quickly, and with at least one technical-commercial validation. In this sense, the ultimate objective of this process must allow the selected solution(s) to scale to the areas, channels, networks and/or industries associated with the Company.

The programme will be carried out online during the call, selection and validation stages. In case of advancing to the next stage of Piloting, each case will be reviewed in particular with each company, since the program considers companies from different countries around the world.

(I) PARTICIPANT REQUIREMENTS

- Be a legal entity with a company incorporated (nationally or internationally).
- Have technical-commercial validation (MVP, pilots, sales, customers).
- TRL 4 (Technology Maturity Level)
- Have growth potential and scalability.
- To form a team committed to the development of the project.
- Provide an implementation plan that contemplates the expansion and adaptation of the technology.

6. ABOUT THE STAGES OF THE PROGRAM

To participate in this call, participants must register and apply by entering directly to the Transelec Ventures website: <https://www.transelec.cl/ventures/desafios-venture/robotica/>

The date of receipt of applications will be from November 22, 2024 to December 30, 2024, and Transelec may modify these dates by giving timely notice.

(I) ABOUT THE CALL TO PARTICIPATE IN THE PROGRAM AND RECEPTION OF PROJECTS

The Program will be launched through the means defined by Transelec through its dissemination through the appropriate channels for such purposes, considering social networks, partner networks and the ecosystem in general. The challenges will be communicated periodically on the website: [https:// www.transelec.cl/ventures/es/](https://www.transelec.cl/ventures/es/) and the challenges and value offer of the program can be reviewed.

The application to the program, in which they can apply to one or more challenges, must be completed for each of them separately.

In case there are doubts regarding the form and its content, as well as with the application platform, Participants should contact the email innovacion@transelec.cl

(II) REVIEW OF ADMISSIBILITY OF THE APPLICATION

Once the call is closed, the Pre-Selection process will begin. This process begins with the review of the admissibility of each of the Participants who have registered and applied directly through the application platform. In the event that all the required fields in the application form are not complied with or if it was not sent, said Participant will automatically be excluded from the next Selection process.

(III) ABOUT THE PRE-SELECTION AND VALIDATION PROCESS.

The Pre-Selection Process (understood as pre-selection, as the possibility of being selected to participate in the program, but which does not mean that the Startup is assured of its inclusion as a supplier of the Company) includes two phases that will be executed successively and that are detailed below:

PHASE 1: "PRE-SELECTION"

After verifying the admissibility process, and only with respect to those Startups and Projects that have completed this stage, a Pre-Selection will be made of those Startups and Projects that it considers relevant and that are in line with the challenge, at the sole discretion of the Transelec Ventures team using the following criteria:

ITEM	VALUE
Team: The suitability of the team to execute the project will be evaluated, in relation to the experience of the members and their support networks, if any.	10%
Previous implementation: Experience of the Startup implementing the solution, level sales metrics, KPIs, and metrics that support the implementation in other customers.	40%
Feasibility of the solution: The technical feasibility and implementation time of the solution.	25%
Impact of the solution: The relevance and impact of the solution according to the postulated challenge(s). Evaluate the impact of the solution in terms of KPIs compared to the effort required to implement it (time, resources, etc.)	25%

The aforementioned Startups and Projects will subsequently be evaluated in depth by the Company's team. In this phase, additional information may be requested from the Pre-Selected Participants to answer some questions, which will be reviewed by the Transelec Ventures team to choose the solutions that will advance to the validation stage.

PHASE 2: "SOLUTION"

The objective of this phase is to delve into the value proposition and the match between the Startups or Companies and the challenges posed by Transelec Ventures, as well as the feasibility of implementing the solutions. In this phase, review and analysis days will be held, validation meetings with different areas of the Company, whose purpose is to develop a specific piloting proposal and the necessary requirements for it, which will be presented and evaluated by the Committee. The duration of this phase is estimated at 4 weeks from the end date of the Selection phase. A contract will also be signed for the protection of the Participants.

During this phase, the Program considers individual sessions and in-depth meetings between the Participants and representatives of the Company. Participants will be able to receive strategic support in the development of their Projects, advice from experts in the industry and the problems they are addressing, and support in the construction of pilot proposals or proofs of concept.

Finally, this stage ends with the creation of a committee in which it will be decided which proposals will go to the piloting phase, where they will begin to work directly with the Transelec team for the implementation of their solutions.

Notwithstanding the foregoing, the continuity and implementation of the solutions in the process will be the sole and exclusive responsibility of the agreement reached by both parties, provided that both parties are satisfied with it. Both the Startup or Company, as well as the Company, have the power to unilaterally terminate the process in the event that it is not reached.

(IV) ABOUT THE SELECTION PROCESS.

After the Validation process, the pre-selected Startups and Companies will have to present their solutions in a Pitch Day before a committee made up of the Transelec Ventures team and guests, who will finally decide which solutions will continue to a Piloting phase.

This Selection Committee will be held in virtual format. Here, the selected Participants will have the opportunity to present their solution to Transelec Ventures in a closed instance where they seek to present the project and use the remaining time to raise concerns, opportunities and give feedback for a possible implementation. At the end of this, the Transelec Ventures team will evaluate which of the proposals presented during the day best fit the requirements and challenges of the Company, finally selecting those that will continue to a Piloting phase.

The solutions they present to the committee:

- They must aim to solve a problem or address one of the industry opportunities defined in the challenges of the Program.
- They must have some type of technical-commercial validation that allows the evaluation of the implementation of the projects.

In addition to those set out above, the selection criteria that the Company will use to make the Final Selection of Startups and Projects correspond to:

- Degree of innovation of the value proposition.
- Match with the Company's internal challenges and requirements.
- Quality, dedication and potential of the entrepreneurial team.
- State of development and progress to date.
- Deal or work/development proposal proposed by the entrepreneur.

Transelec may, at its sole discretion, make the final selection by adding other criteria it deems appropriate. Details on dates, times, instructions and agenda in general will be provided in a timely manner during the process.

(V) ABOUT THE PILOTING PROCESS.

After the Pitch Day, the selected startups will advance to the piloting stage, which will be funded by Transelec. This crucial phase will allow startups to implement and test their solutions in a real environment, with the necessary support and validation to carry out their projects effectively.

The piloting processes will be coordinated one by one between the Startups or Companies in the piloting phase and their respective counterparts by the Transelec team. The period of time includes 3 months from the start of the testing of the solution at Transelec's facilities. However, Transelec will have the power to extend the time window whenever it deems it appropriate.

In the Validation stage, the metrics and hypotheses that will define the success or non-success of the pilot will be defined, in collaboration with the Startups or Company and Transelec Ventures.

7. CALL DATES

ETAPA	FECHAS
Applications	December 22 to December 30, 2024
Informative Webinar	December 17, 2024
Phase 1: Pre-Selection	January 2025
Phase 2: Validation	February 2025
Selection (Pitch Day)	Between 10 and 28 February 2025
Pilotage	March 2025

8. COLLABORATION AND PARTICIPATION MECHANISMS WITH STARTUPS

With respect to the mechanisms for participation in the value generated, as specified in these Terms and Conditions, the Company will consider the Venture Client model as a mechanism to be evaluated with each startup selected for the Program individually. However, Transelec Ventures will be free to offer another additional collaboration mechanism that is not found in these Rules.

(I) VENTURE CLIENT (CUSTOMER RELATIONSHIP-STRATEGIC SUPPLIER)

This mechanism of collaboration and participation will be formalized as long as the Participant complies with each and every one of the Company's internal protocols to be considered as a supplier of the Company. In the event that the Project constitutes a technology, services or products that have already been validated, a pilot must be carried out to subsequently present an attractive business opportunity for the Company.

The collaboration and participation mechanism described above, as well as its terms and conditions, will be defined individually with each of the Startups or Companies whose Project was selected, either during the validity of the Program or once the results of the pilots of each of them can be verified.

9. OBLIGATIONS AND WARRANTIES OF PARTICIPANTS

Program Participants undertake and undertake to fully comply with all stages of the process, in the manner in which a person of good judgment would reasonably act, and in particular undertakes to:

- Actively participate in all the activities defined for the development of their Project that are contained in the Program.
- Lead the implementation and commercialization of the product in case the Project is selected, participating together with the Company in each of the aforementioned instances.
- Accept all the conditions of this document.
- Safeguard and treat as confidential all the information shared about the challenges, call and Transelec in general.
- Protect the brands and image of the Company and its related or associated companies.

The Participant hereby represents and warrants that the contents that make up their Project are of their original creation and that they do not infringe the rights of any kind belonging to third parties, including copyrights, trademarks, patents, trade secrets, rights of privacy and publicity.

Likewise, the Participant undertakes to respect the Chilean legal system and therefore, declares to know and accept that he/she may not enter or include in documents required in the pre-selection process or in any other that may be developed subsequently, content contrary to the law, public order, morality and good customs and/or that in any way may infringe contractual obligations previously contracted by the Participant or that may be considered harmful, abusive, derogatory, defamatory, vulgar, invasive of privacy, racist, xenophobic or discriminatory and in general, in any way objectionable.

Likewise, the Participant undertakes to take all necessary measures to prevent the contents of their Project from containing computer viruses or any file or program designed to interrupt, destroy or limit the functionality of any software, hardware or telecommunications equipment.

The Participant knows and accepts that he/she enters his/her Project or business proposal under his/her sole and exclusive responsibility and at his/her own risk. Accordingly, in the event of a dispute of any kind (including disputes over the authorship and/or ownership of rights in the works) or for any reason between the Participants or between any of them and a third party, the Company shall be exempt from any liability for any claims, demands or damages of any kind and nature that are in any way related to such dispute. Likewise, the Participant agrees to hold the Company harmless, against claims from third parties related to the idea or innovation he/she provides.

10. OBLIGATIONS OF THE COMPANY

The Company undertakes to:

- To preserve the confidentiality of the Projects presented by the Participants and to comply at all times with the agreements made between both parties (Participants and the Company). This confidentiality obligation will not be applicable to the communication of information that must be disclosed for the purposes of an adequate promotion of the Project and, in general, any information that is required to be communicated for the purpose of facilitating the creation of value for the benefit of the Project and the Company.
- Confirm to Participants that all materials requested by both organizations have been received, including those concerning registration and data protection.
- Inform the Participants about the results obtained by their Project.
- Inform the Participants through the channels defined for this purpose, about any modification in the bases, activities and dates of the acceleration program.

11. INTELLECTUAL PROPERTY, CONFIDENTIALITY AND NON-EXISTENCE OF ASSOCIATION

(I) INTELLECTUAL PROPERTY

The Participant shall retain ownership of the intellectual property rights in the existing solutions that it submits and offers hereunder to the Program.

In the event that there are efforts of co-creation, adaptation, ideation or new development of solutions, it must be discussed on a case-by-case basis whether it is in Transelec Ventures' interest to participate in the intellectual property on what has been developed, which must be agreed with the Startup or Company.

(II) CONFIDENTIALITY

The Participant and the Company are mutually obligated from now on to maintain confidentiality and secrecy with respect to all background information and information that have been provided to them in relation to the Program or that are developed during the validity of the Program. The Participant also undertakes not to disclose the agreements entered into with the Company or another company related to them regarding the Project.

Notwithstanding the foregoing, the Participant expressly authorizes the Company to publish any information related to the agreement that may eventually be entered into with the Company or a company related to them, all in order to grant the appropriate or corresponding publicity to the Project.

The obligations assumed in points (i) and (ii) above will be in force from the acceptance of these Terms and Conditions and until the end of the participation of the Participants in the Program.

Notwithstanding the foregoing, and with respect to those Participants who have reached a commercial agreement with the Company, the obligation of confidentiality will subsist for a period of up to two years from the termination of said commercial relationship.

(III) NO EXISTENCE OF ASSOCIATION

Except as expressly regulated in these Terms and Conditions, the Company does not assume any obligation in relation to the Participants and the Projects referred to in any agreements to be signed with the Company or its subsidiaries. For the sake of completeness, the Participant declares to know and accept that these Terms and Conditions do not constitute any form of association between the Participants and the Company or its affiliates.

12. ACCEPTANCE OF THE BASES

Participation in this Program requires full knowledge and acceptance of these Rules, it being understood for all applicable purposes that the mere fact of participating in the Program constitutes unconditional acceptance of the Rules and its terms.

The Participating Startups undertake to provide due and timely collaboration with the Company in order to promote the dissemination of the Project by the means that are determined. In this way, it will be a condition to apply and participate, that the Startup participates in the activities, promotions, events, programs or dissemination that is determined.