Guidelines for the application of the Envision protocol to the electrical transmission infrastructure of Terna









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Introduction

The Terna Group is sole operator and proprietor of the Italian National High-Voltage Transmission Network (NTN). It is the owner of a government concession as a regulated monopoly and is an independent operator of networks for the transmission of electrical energy (TSO, Transmission System Operator), among the largest in Europe in terms of kilometres of lines managed (more than 74,000 km). The tasks entrusted to Terna are:

- 1. Managing and maintaining the national transmission network (NTN);
- 2. Maintaining a balance between energy supply and demand (dispatching);
- 3. Contributing to energy transition by promoting the use of renewable resources.

The energy transition taking place toward an increasingly sustainable electricity system presents new challenges and opportunities. Terna is at the centre of this process to achieve the goals of decarbonisation, ensuring the safety of the system and minimising the overall cost to Italian families and businesses. This commitment is even more evident in the objectives in the 2020-2025 Strategic Plan, which involves investments in the national electrical network that have lately been growing to drive the energy transition.

For Terna, the search for the right **balance between energy requirements and protecting the environment** and the land translates into a search for appropriate solutions to ensure our country has the electricity it needs with the best conditions in terms of reliability, cost and **environmental sustainability**, through:

- **Dialogue** with local institutions for a practical search for solutions that allow us to preserve the richness and potential of the environmental and cultural heritage of the territory where there is a need to develop the electricity transmission system;
- <u>Integration</u> of the environmental and landscaping constraints in planning the network, considering local needs through direct contact with the regions and other local institutions affected by the assumption of involvement in developing the electrical network;
- Application of the SEA (Strategic Environmental Assessment) as a tool used as a <u>guide</u> and <u>advance comparison</u> for the siting of new power lines, in order to allow effective safeguarding of the environment and the land, while facilitating the authorisation process for the planned operations

In recent years, Terna refined its dialogue process with the territory through meetings dedicated to listening to citizens affected by these projects. In the 'Terna Meets' sessions, Terna speaks directly with those who live in the area slated to host the new infrastructure, and it illustrates and explains its plans and listens to opinions, suggestions and requests for clarification from the territory. This way, better solutions are shared for the location of the new works or the realignment of the existing ones, always in compliance with environmental and landscaping parameters, creating the conditions to build, along with the citizens, an increasingly sustainable national electric network.

In this setting of constant dialogue seeking with the community and improvement of our sustainability performance in our processes for public consultation, planning, implementing and maintaining the electric works, during 2018, Terna started a process to adopt the Envision protocol to demonstrate and develop the sustainability of our development projects and the restoration of the electrical network.

Terna has trained and accredited various resources as Envision Sustainability Professionals (ENV SPs); the personnel trained belong to various organisational units to ensure a plurality of experiences and views in the area of stakeholder engagement and the sustainability of our project planning, construction and maintenance activities.





Under the guidance of ICMQ experts and Stantec, a work team was established in Terna that drafted these guidelines for the application of the Envision protocol to the electricity transmission infrastructure.

With the Envision protocol, Terna intends to develop and, where possible, optimise:

- the **public consultation**, **planning**, **implementation and maintenance processes** for electrical works including through better coordination with the territories and interested parties,
- the average life of electrical work and its better suitability to climate change (resilience),
- the long-term sustainable life cycle and with lower costs,
- the protection and better contribution to the quality of life of the **local communities** involved in the performance of electrical works,
- the **credibility and reputation of the firm** and its electrical work by adopting a system of independent assessment.

Envision was approved in Italy in 2015 at the initiative of ICMQ, with the collaboration of Stantec. ICMQ received the mandate from the Institute for Sustainable Infrastructure for the exclusive propagation of the protocol throughout Italy.

We are pursuing this objective through a series of actions aimed at spreading knowledge of the Envision system, such as campaigns on media, holding events, and providing training courses and exams to help our resources obtain internationally recognized professional qualifications as Envision Sustainability Professionals (ENV SPs).

ICMQ is currently the only ISI representative for the promulgation of the protocol throughout Italy in ENV SP qualifications and in the certification of projects in Italy, as well as the adaptation of the system under Italian regulations in order to make it more easily applicable.

ICMQ S.p.A. is the Certification Body specialising in the construction field that provides certification services to companies that request it and sustainability services related to the most widespread protocols (like Envision, LEED or BREEAM).

Stantec is a Canadian engineering and architecture company with roughly 22,000 employees at more than 400 sites worldwide. Since its establishment, it has been engaged in engineering, building and managing some of the largest and most advanced water, hydroelectric and transport projects in the world for public agencies or private companies.





The Envision® protocol

The Envision Protocol is a collaborative effort between the ISI (Institute for Sustainable Infrastructure), a non-profit organisation in Washington, D.C. specifically established to develop sustainability rating systems for civil infrastructure works, and the Zofnass Program for Sustainable Infrastructure at the Harvard University Graduate School of Design.

ISI was founded by the American Council of Engineering Companies (ACEC), the American Public Works Association (APWA) and the American Society of Civil Engineers (ASCE).

The Zofnass Program was founded in 2008 thanks to a donation from siblings Paul and Joan Zofnass and extends its activities to all of Harvard University, including the School of Public Health, the Kennedy School of Government, the Business School and the Center for the Environment. The Zofnass program is supported by an advisory board of companies and by research foundations.

In 2018, ISI published the third release, Envision v. 3, which took effect on 1 January 2019.

The Envision system is organised as 64 credits, subdivided into the five following categories (Fig. 1), each of which is, in turn, further divided into subcategories:

- Quality of Life: assessment of the degree to which the project positively influences the communities involved
- Leadership: Collaboration and commitment to the project, exploiting opportunities to improve • performance
- *Resource Allocation*, reduction and efficiency in the use of resources, energy and water.
- Natural World: reduction of the ecological footprint and the impact on the natural world. •
- Climate and Resilience: mitigation of global warming and reduction of air pollution. Reduction • of vulnerability, increase in durability, flexibility and adaptation to different usage conditions.

For each credit, the protocol has different levels of meeting the requirement (called Levels of Achievements), with different scores being granted based on the project's actual features and the actions taken.

The system allows assessment of actions and improvement features, as opposed to mere compliance with regulatory obligations and standards, or of the practice of consolidated planning.



WELLBEING

- QL1.1 Improve Community Quality of Life OL1.2 Enhance Public Health & Safety QL1.3 Improve Construction Safety QL1.4 Minimize Noise & Vibration
- OL1.5 Minimize Light Pollution
- QL1.6 Minimize Construction Impacts

MOBILITY

QL2.1 Improve Community Mobility & Access QL2.2 Encourage Sustainable Transportation QL2.3 Improve Access & Wayfinding

COMMUNITY

QL3.1 Advance Equity & Social Justice **OL3.2** Preserve Historic & Cultural Resources QL3.3 Enhance Views & Local Character QL3.4 Enhance Public Space & Amenities

QL0.0 Innovate or Exceed Credit Requirements

Leadership 12 Credits



LD1.3 Provide for Stakeholder Involvement LD1.4 Pursue Byproduct Synergies

PLANNING LD2.1 Establish a Sustainability Management Plan LD2.2 Plan for Sustainable Communities LD2.3 Plan for Long-Term Monitoring & Maintenance

LD2.4 Plan for End-of-Life

ECONOMY LD3.1 Stimulate Economic Prosperity & Development

LD3.2 Develop Local Skills & Capabilities LD3.3 Conduct a Life-Cycle Economic Evaluation

LD0.0 Innovate or Exceed Credit Requirements

MATERIALS RA1.1 Support Sustainable Procurement Practices RA1.2 Use Recycled Materials RA1.3 Reduce Operational Waste RA1.4 Reduce Construction Waste

Resource

Allocation

14 Credits

RA1.5 Balance Earthwork On Site

ENERGY RA2.1 Reduce Operational Energy Consumption RA2.2 Reduce Construction Energy Consumption NW2.3 Reduce Pesticide & Fertilizer Impacts RA2.3 Use Renewable Energy

RA2.4 Commission & Monitor Energy Systems

RA3.1 Preserve Water Resources RA3.2 Reduce Operational Water Consumption RA3.3 Reduce Construction Water Consumption



NW1.1 Preserve Sites of High Ecological Value NW1.2 Provide Wetland & Surface Water Buffers NW1.3 Preserve Prime Farmland NW1.4 Preserve Undeveloped Land

Natural

World

CONSERVATION

NW2.2 Manage Stormwater NW2.4 Protect Surface & Groundwater Quality

ECOLOGY

NW3.1 Enhance Functional Habitats NW3 2 Enhance Wetland & Surface Water Function NW3.3 Maintain Floodplain Functions NW3.4 Control Invasive Specie NW3.5 Protect Soil Health





EMISSIONS CR1.1 Reduce Net Embodied Carbon CR1.2 Reduce Greenhouse Gas Emissi CR1.3 Reduce Air Pollutant Emissions

RESILIENCE

CR2.1 Avoid Unsuitable Development CR2.2 Assess Climate Change Vulnerability CR2.3 Evaluate Risk & Resilience CR2.4 Establish Resilience Goals and Strategies CR2.5 Maximize Resilience CR2.6 Improve Infrastructure Integration

CR0.0 Innovate or Exceed Credit Requirements

Figure 1 – List of the 64 Envision Credits, divided into 5 categories and their related subcategories.

WATER

NW2.1 Reclaim Brownfields





The Envision system includes the following four certification levels based on the percentage of achievement of the maximum score applicable for the work.



To obtain certification, the project is first self-assessed by a qualified professional (Envision Sustainability Professional), who is a member of the project team.

Next, the project is examined by inspectors qualified by ISI/ICMQ who, based on the information and objective evidence provided by the project team, when the actual achievement of the threshold has been substantiated, can issue the corresponding certification.





Scope and field of application

These Guidelines analyse the specific details of the electrical infrastructure planned and implemented by Terna S.p.A. in terms of territorial development, the number of stakeholders involved, times, costs, difficulty in changing the layout or execution methods with the aim of combining the spirit and rigour of the Envision protocol with the particularities of national infrastructure and regulations.

Worked out as a sort of handbook, it describes for each criterion in the protocol a precise assessment metric and a list of the supporting documentation needed to reach a given level of achievement.

The guidelines are, therefore, a concrete tool to promote an electrical infrastructure design process by Terna S.p.A. that is oriented to environmental, economic and social sustainability within the context of better execution of the work in the relevant territory.

This document is therefore applicable to the design of infrastructures developed by Terna S.p.A. and not by other operators.

They are, therefore, a useful reference for stakeholders to acquire a clear and exhaustive picture of the benefits related to implementing the infrastructure work; they also provide an objective method for self-evaluating the progress of the works, which allow the designer to improve the project's features through a continuous feedback process intended to perfect the project solution with a view to sustainable development as well as to provide a tool for the relevant authorities to evaluate the sustainability of infrastructure projects.

All 64 Envision credits are analysed in the document and divided into their respective categories; for each credit, it reports:

- a brief introduction to the goals of the credit;
- the reference to the applicability or lack thereof of the credit to the specifics of the electrical infrastructure;
- the score attainable for each achievement level;
- an exploration of the documentation useful in the attainment of each achievement level.

The exploration of each credit allowed the determination of which are the best practices already in effect in terms of Terna S.p.A. standards and the areas of possible improvement.





Terms and Definitions

Acronyms

- **VHV** Very High Voltage
- CBA Cost-Benefit Analysis
- TOA Transmission Operational Area
- **ARERA** Regulatory Authority for Energy, Networks and Environment, that is, the national regulation authority
- CAM Minimum Environmental Criteria
- **CAPAMB** Environmental Specification
- **EMF** Static electrical and magnetic fields; electrical, magnetic and electromagnetic fields variable over time with frequencies up to 300 gHz
- **PS** Primary Substation
- **DPRET** Terna's Electrical Risk Prevention Provisions
- **DSO** Distribution System Operators
- **EPD** Environmental Product Declaration
- ERPA Criteria of Exclusion, Repulsion, Uncertainty and Attraction
- SUI System Utility Index
- **KPI** Key performance indicator
- LCA Life Cycle Assessment
- LCCA Life-Cycle Cost Analysis
- LIPU Lega Italiana per la Protezione Uccelli [Italian Bird Protection League]
- **MBI** Monitoring & Business Intelligence: expert information system to support the plant maintenance process
- AMP Annual Maintenance Plan
- **DP** Development Plan
- EMP Environmental Monitoring Plan
- **SMP** Plant Maintenance Plan (PMP)
- TWP Technical Work Plan
- **SCP** Safety Coordination Plan
- **ER** Environmental Report
- **PPSM** Prevention and Protection Service Manager Person in possession of the professional abilities and requirements under Article 32 of Legislative Decree 81/08 appointed by the Employer, to whom the person reports, to coordinate the risk prevention and protection service.
- **NTN** National Transmission Network
- SF6 Sulphur hexafluoride
- **EIS** Environmental Impact Study





- **SCI** Site of Community Importance
- **TSO** Transmission System Operator
- SEA Strategic Environmental Assessment: in approval of Directive 42/01/EC
- **EIA** Environmental Impact Assessment
- VINCA Environmental Incidence Assessment
- SPA Special Protection Area





Glossary

- Public Consultation before starting the design process, Terna launches a voluntary public consultation phase with the stakeholders. The applied method starts with the acquisition of the existing data that is in possession of the region, province and municipality that, when appropriately processed, allow the identification of territorial areas, called 'corridors', within which the addition of the electrical work is most compatible with the territorial, social and environmental context. To identify the optimal corridor, it is necessary to set shared environmental and territorial objectives and work out a study methodology that makes its perception simple and immediate; this is the purpose of the careful survey that TERNA has, for some time, performed nationally and regionally and from which descends the application of the 'ERPA criteria'. Starting from the choice of the preferential corridor, using the ERPA criteria mentioned above, the range of feasibility is agreed upon within which the layout is sought with the least impact on its environmental elements, while considering many factors, one of the most important being environmental impact. Because of this, during the process beginning with the preliminary design that continues even after operations have started, Terna follows every work with an internal team of professionals specialising in engineering, geology, natural sciences and forestry: the goal is to optimise the technical choices and mitigate the residual impact of the infrastructure on the environment and the surrounding land.
- **Congestion** Condition in which an electrical transmission network has a lower carrying capacity than is needed for the most economically advantageous energy transit.
- **ERPA Criteria** Environmental and territorial criteria adopted by TERNA to identify the preferential routes; the ERPA (Exclusion, Repulsion, Problems and Attraction) criteria allow the area to be classified as one of four categories, as a function of the viability of adding electrical infrastructure:

Exclusion: areas in which all construction is prohibited.

Repulsion: areas it is preferable not to involve with operations except in the absence of alternatives or in the event of only alternatives with less environmental compatibility, but still in compliance with the agreed-upon prescriptive framework.

Problems: areas for which further exploration is needed, as the attribution of the various nationally established classes is problematic because it does not contemplate regional or local specifics; a further territorial analysis is therefore necessary that is supported by an objective rationale documented by the agencies involved.' This analysis is intended to establish whether it is appropriate to place the territory type in question in one of the other classes (Attraction, Repulsion or Exclusion), subject to compliance with a prescriptive framework agreed upon with the agencies. Unlike the other criteria, this one features the need for further investigation and the absence of an automatic a priori assessment mechanism.

Attraction: areas to be given preference when possible, subject to testing the territory's load capacity.

Dispatching activity aimed at imparting instructions for the coordinated operation of the production plants, the NTN, the networks connected to it and the electrical system's auxiliary services.





- **Electrical power line** (also, Line) system that connects two electrical stations or one station and an energy input or output point. This is comprised of electrical conductors (e.g. a triplet of conductors in three-phase alternating current), supporting parts for overhead lines (supports or insulators), security cables and other components needed for the proper electrical and mechanical functioning of the installation. A line jointly houses one or more electrical circuits (single- or double-line cable).
- **Energy Manager Technician responsible for the conservation and rational use of energy**: A person experienced in energy management with the task of supporting the top management of the Terna Group in regard to the effective performance of actions, conservation operations and the rational use of energy. The person in charge of conservation and rational energy use is charged with identifying the actions, operations, procedures and anything else necessary to promote the rational use of energy.
- **Operation** functional unit of reference for the Development Plan, consisting of actions related to the development of the NTN to meet particular needs in a certain area. It includes the implementation, upgrading, demolition and disposal of power lines, stations and cables; these operations may be supplemented, as appropriate, by streamlining and measures for electrical retrofitting.
- **Monitoring** Since 2017, Terna has performed Environmental Monitoring (EM) of its open work sites:
- **Environmental** all EM activities are designed and documented in the Environmental Monitoring Plan (EMP) and are devised for:
 - 1. assessing the environmental scenario of reference (pre-construction monitoring) used in the EIS to evaluate the environmental impacts generated by the work being planned;
 - 2. checking the predictions of the environmental impacts contained in the EIS by monitoring the evolution of the reference environmental scenario following the implementation of the project (monitoring during and after construction), in terms of change in the environmental parameters characterising the qualitative and quantitative status of each environmental element/factor subject to a significant impact;
 - checking the effectiveness of the mitigation measures anticipated in the EIS to reduce the extent of the significant environmental impacts identified during the construction and operation phase (monitoring during and after construction);
 - 4. identifying any environmental impacts that are unanticipated or of a larger extent than the predictions in the EIS and scheduling the appropriate corrective measures for their resolution (monitoring during and after construction).

All the documents Terna produces on the plans and procedures are available to the public on the Terna portal.

The Development Plan (DP) is the tool for planning the development of the national electricity transmission network, which Terna writes every two years (L.D. Simplifications 76/20) on the basis of:

- the trend in energy requirements and the forecast of electricity demand to be satisfied;
- the need to upgrade the network;

DP





• the requests for the connection of new generation plants to the network.

The development of the electrical transmission network has multiple objectives:

- ensuring the safety and continuity of the supply;
- increasing the efficiency and economy of the transmission service and the national electrical system;
- improving the quality of the service;
- connecting all parties entitled to it to the national transmission network;
- reducing network congestion;
- developing and strengthening the interconnection with foreign countries;
- respecting environmental and landscaping constraints.

The document thus mentions all the new NTN development operations planned to attain those objectives. The DP is also accompanied by the following main documents:

- 'Progress of the Previous Development Plans', which describes the progress status of the operations to be started, undergoing the authorisation process or in the construction phase, related to the creation or upgrading of electrical stations and power lines to ensure the continuity, quality and safety of the network, the development of interconnections with foreign countries and the integration of non-programmable renewable sources.
- 'Connections Annex', which identifies all operations to connect new generation plants, primary substations and end users.
- **Planning participatory** Terna develops a constant relationship with local institutions and citizens, hearing the observations and questions for a truly involved planning of the works. These discussions help to identify improvement solutions for the location of new infrastructure or the reorganisation of existing ones, always in compliance with environmental and landscaping constraints. The 'participatory planning' model has become an essential pillar of Terna's work. The discussion events with the territory are increasing constantly. The strengthening of the dialogue with local communities represents Terna's commitment to creating the conditions to 'build' together an increasingly sustainable national electricity network.
- **Streamlining** operation allowing the optimisation of parts of the network in anticipation of the demolition of some elements of it following the construction or extension of stations and/or power lines.
- **Network** instrument that allows the electricity produced and fed into the network by generation plants and from foreign imports to be transported to distribution and consumption centres.

Primary Network lines and stations at 400 and 220 kV (VHV network).

Secondary Network lines and stations at 150 and 132-120 kV directly functional to the transport of the productions of the stations with apparent electrical power greater than 10 MVA (HV network)

Retrofitting operation allowing the extension or modernisation of existing plants.





- **Power Reserve** portion of power from the generation facilities that must satisfy the imbalance between production and load due to random variations in demand, forecast errors in demand, unanticipated unavailability of generation (for example, due to equipment failure) and unforeseen changes in exchange programs with foreign countries.
- Auxiliary Services services necessary for the management of a transmission or distribution network such as, for example, frequency regulation services, reserve, reactive power, voltage regulation and restarting the network.
- **Overload** condition of a network element that has reached and exceeded its expected load limits for its proper functioning or use.
- **Electrical Station** element of a network contained in a demarcated, closed site that has the function of distributing electricity among the lines in a network, to transfer electricity among networks with different voltages, and to transform electricity to the lowest voltage useful to the user.
- **Voltage** difference in electrical potential between two elements of the network.

Low Voltage: nominal voltage between phases not exceeding 1 kV.

Medium Voltage: nominal voltage of more than 1 kV and less than

or equal to 35 kV.

High Voltage: nominal voltage of more than 35 kV and less than or equal to 220 kV.

Very High Voltage: nominal voltage of more than 220 kV.

- **Triplet of conductors** electrical circuit consisting of three conductors to carry three-phase alternating current, electrically connecting two different nodes of the transmission network or one node and an energy input and output point.
- **Terna Meets** days set up to provide information on the reasons for and advantages of anticipated infrastructure work. During these meetings, technicians and designers show citizens and explain all the steps in the life cycle of a project, from development to network management and maintenance, and they listen to opinions, suggestions and requests for information from people in the area.
- **Transformer** electrical machine used for connection and the transfer of energy between networks with different voltage levels.
- SEA A sustainability tool with the goal of assessing how plans and programs meet the objectives for sustainable development, checking their overall environmental impact, that is, their direct incidence on the quality of the environment.

Back in 2004, inspired by the goals of the Kyoto Protocol and principles of sustainability, even before Italy's assimilation of European Directive 2001/42/CE on the SEA with Legislative Decree 152/2006, Terna undertook a voluntary course of sharing with ministries and regions, launching jointly with the relevant ministries work forums with the regions on the environmental analysis methodology, on the indicators for assessing impacts and introducing into its own SEA methodology the sustainability criteria for adding works in the area (ERPA criteria), shared with ministries, regions, environmental associations and other stakeholders.

In keeping with Directive 2001/42/EC, regarding sharing its plan choices with the environmental authorities, Terna initiated a series of collaboration





agreements by way of SEA Memoranda of Agreement, with the Conference of Regions first of all and then the individual regions, aimed at sharing data, environmental information and the methodologies for sustainable placement of electrical infrastructure set forth in the DP for the NTN.

From the earliest applications of the SEA to the DP, we wanted to take a participatory route to establishing the plan, making use of national workshops, meetings with regional administrations, and technical forums, as well as collecting the observations received by the environmental, public, stakeholder and association authorities to provide responses to later development plans.

The direct and indirect effects of our work on people, animals, plants, land, water, air and the landscape, in addition to our cultural and environmental heritage, are collected and analysed in the Environmental Impact Study (EIS). This document contains projections of the power line's impact with related mitigation measures, warnings to heed during the design, construction and operations stages as well as additional compensatory operations.

The designs are then submitted for examination to the relevant agencies, which express their opinions and any directives, within the scope of the Environmental Impact Assessment (EIA) procedure. The same agencies then check the proper implementation of the design and monitor compliance with their directives, thereby ensuring maximum caution and protection of the environment.

EIA





Analysis of the Credits

Quality of Life

QL 1.1 IMPROVE COMMUNITY QUALITY OF LIFE

The plan for the electric infrastructure arises from the identification of the electrical needs of the community as defined in the Development Plans approved after the SEA process and as established from the citizen and administration involvement process in all phases, from planning to design and through the construction of the work.

Right from the planning stage, there are discussions with local stakeholders to consider and include the needs of the local communities.

INTENT	To improve the quality of life of all communities affected by the project and to mitigate negative impacts on those communities.
METRICS	Measures taken to assess community needs and to improve quality of life by minimising negative impacts.
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Community Considerations	Community Linkages	Broad Community Alignment	Holistic Assessment & Collaboration	Protecting The Future
A + B	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F	A+B+C+D+E+F+G
POINTS: 2	POINTS: 5	POINTS: 10	POINTS: 20	POINTS: 26
(A) The project team identif and reviewed the most rece	(A) The project team identifies and takes into account community needs, goals, and issues. For example, the project team has located and reviewed the most recent community planning information and assessed relevant community needs, goals, and/or issues.			
(B) The project meets or su	pports community needs	and/or goals.		
	(C) The project assesse life.	s the social impacts it will h	ave on the host and affected o	communities' quality of
	(D) The affected communeeds and/or goals.	inities are meaningfully eng	aged in identifying how the pro	oject supports community
		(E) Based on the social a nearby affected communi avoidance, minimization,	ssessment, potential negative ties are mitigated following a h restoration, and offsetting	impacts on the host or hierarchy that prioritizes
(F) Community satisfaction is demonstrated by feedback from the stakeholder engagement process				
				(G) The project proactively addresses trends in changing social, economic, and/or environmental conditions within the community in order to ensure a high quality of life over the long term.





EVIDENCE AND DOCUMENTATION REQUIRED

A. Has the project team identified and taken into account community needs, goals, and issues?

During the planning stage of the work

- During the operation planning stage, social indicators should be taken into consideration to minimise the effects of the project, starting from the study area, then the identification of corridor alternatives, and through the range of feasibility of the work:
 - 1. List of indicators analysed for the operation in the reference Environmental Report (ER);
 - 2. List of indicators in the Development Plan;
 - 3. Guidelines for the involvement of local stakeholders in investment activities for Terna's electrical network.
- The work starts as a requirement in a reference Development Plan and can be modified after public consultation is started with the territory, in order to reconcile local development needs with those of the NTN:
 - 4. operation sheet from the reference DP, with description of the operation.
- Since 2004, Terna has pursued a voluntary public consultation with the regions, before the SEA directive was implemented, introducing the sustainability criteria for introducing the work in the territory, shared with ministries, regions, environmental associations and other stakeholders:
 - 5. Ministry forum reports, ministry and environmental association memoranda of understanding (related to agreements of national scope).
 - 6. Memorandum of Understanding with the region involved in the work in sharing the siting methodology (ERPA criteria).

During the public consultation stage (before and during preliminary planning)

- Development of the first steps in public consultation, launched in the territory involved in the work:
 - 7. Terna Report Province and/or region involved with institution of a technical forum for the selection of alternatives using the ERPA criteria.

During the authorisation stage

- For authorisation, the plan resulting from advance public consultation is sent and agencies and administrations are involved and can express their opinions on the project in a Services Conference at the Ministry of Economic Development. In the Services Conference, the agencies involved express their needs, which are incorporated into the instructions added to the authorisation decree:
 - 8. Convening the Services Conference.

B. Does the project meet or support the needs and goals of the host and/or affected communities?

During the planning stage of the work

- During the planning stage, the External Consistency of the ER on the operations anticipated in the DP are analysed, verifying all applicable planning tools:
 - 1. Operation form from the ER that describes the environmental and territorial analysis of the operation's study area.

During the public consultation stage (before and during preliminary planning)

- During the public consultation phase, the applicable planning tools are analysed and the ERPA criteria are used to find a site for the work that produces the least possible interference with the needs and goals of the communities involved:
 - 2. Reports/summaries/reviews/emails to illustrate the meetings with the Technical Forum with the municipalities and/or with other agencies involved (e.g. parks, local oversight bodies).





- 3. Environmental Impact Study, project reference framework, which also describes the public consultation process and the project reference framework which explain the analysis based on the ERPA criteria described in Criterion A.
- 4. A possible report sharing the preferable corridor.

During the preliminary planning and authorisation stage

- Terna analyses the objectives of the project, comparing it with the needs and goals of the communities involved, within the Environmental Impact Study:
 - 5. EIS, Program Reference Framework, in which the plans and programs of the area involved in the project are analysed.
 - 6. Authorisation Decree, which incorporates the opinions of the stakeholders involved.

C. Has the project team assessed the social impacts the project will have on the host and affected communities' quality of life?

During the preliminary planning and authorisation stage

- As part of planning, Terna assesses the project's potential social impacts, choosing a site that is the most acceptable for the territory, and analyses the comparison between the project's objectives and those of the community:
 - 1. Design documents.
 - 2. The DP's EIS Program Reference Framework, which considers the territorial policies and plans in the areas involved in the project.
 - 3. The impact evaluation form in the EIS, which analyses (among other things) the impacts on the demographic base, sanitary hygiene, territorial and economic assets as well as traffic, all of which should range from irrelevant to positive.
 - 4. Stakeholder engagement procedure or other actions aimed at assessing needs and social impacts on the territory.

D. Have the affected communities been meaningfully engaged in identifying how the project meets community needs and/or goals?

During the public consultation stage (before and during preliminary planning)

- With the study of the alternatives, Terna collects the proposals from the agencies involved:
 - 1. Project documentation (for example, Desktop Study, Non-Technical Summary, TWP Illustrative Technical Report).
 - 2. Environmental Impact Study, Project Reference Framework, which describes the alternatives analysed in the public consultation process.
- Terna holds meetings and site inspections with the municipalities, provinces and regions and other agencies involved:
 - 3. Any report sharing the range of feasibility
 - 4. Resolutions of the Municipal Councils approving the siting of the range of feasibility of the work
- Terna strengthened the effectiveness of the participatory process and holds discussion and listening days (Terna Meets) in the communities involved in the development operations, notifying the public through press releases:
 - 5. Documentation related to the citizen meeting days (e.g. flyers, presentations, signs, photos of the meetings, citizen feedback scans, any remarks received and verified).

E. Has the project team addressed negative social impacts?

• The public consultation process that Terna begins at the earliest stages of the work allows an increasingly detailed analysis of the territory's needs and any negative social impacts, allowing the development of an alternative operation more suitable to local development goals. The range of feasibility assembled at the end of the public consultation process incorporates most of the modifications proposed by the agencies involved that present environmental benefits.





During the public consultation, Terna, in addition to listening to the requirements of the administrations, tackles any negative social impacts by hearing the needs of the citizens (Terna Meets), trying as much as possible to collect the requests submitted to harmonise them with the project's needs:

- . EIS.
- 2. Decree of environmental compatibility.
- 3. Authorisation decree.
- 4. Final design.
- In some cases, as compensation for the residual impacts of the work, Terna provides for the streamlining of the NTN lines in the area involved in the main operation:
 - 5. Authorisation petition.
 - 6. Technical Plan of Work, Streamlining Chart.
 - 7. Chart annexed to the Memorandum of Understanding.
- F. Are the affected communities satisfied that the project addresses their needs and goals as well as mitigates negative impacts?
 - At the end of the public consultation process, there is approval of the agreements reached via the signing of the Memoranda of Understanding or Program Agreements with the regions, provinces or municipalities, as well as conventions for the compensatory measures:
 - 1. Resolutions approving the signed agreements in which the administrations gave a favourable opinion on the performance of the work, e.g.: Council or Board of Governors resolution
 - 2. Signed memoranda of understanding
 - 3. Signed conventions
 - Press release supporting the acceptance of the Terna project by the territory:
 - 4. Any newspaper articles, videos, social network posts, publications
- G. Does the project proactively address long-term social, economic, or environmental changes that impact quality of life?
 - Terna monitors the implementation of the plan regularly, assesses its effectiveness, overall sustainability and the sustainability of individual requirements and social, economic and territorial sustainability through the application of sustainability indicators:
 - 1. Monitoring Report related to the work being analysed
 - Terna monitors the environmental aspects in the pre- and post-construction phases:
 - 2. Environmental Monitoring Plans
 - 3. Reports on the monitoring performed
 - 4. Confirmation of compliance





QL 1.2 ENHANCE PUBLIC HEALTH AND SAFETY

This credit is aimed at developing planning methods, operating procedures and organisational models that allow increased protection of public health and safety during the operational phase of the electrical infrastructure (operations phase).

In particular, it covers all actions and technologies related to the features of an electricity transport infrastructure that:

- limit exposure to EMF produced by the system's operation;
- limit the likelihood of electrocution caused by the electrical line;
- limit the damages caused by deflagrations of equipment.

INTENT	To protect and improve the community's public health and safety during the operating stage.
METRICS	Measures adopted to increase safety and provide benefits to the project site and the surrounding areas and the broader community in a fair and equitable manner.
APPLICABILITY	Applicable

	LI	VELLI DI ACHIEVEM	ENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
I Inderstanding Impacts	Prioritizing Risk	Improving Health &	Shared Benefits	Protecting
	Reduction	Safety	Sharea Benefits	Communities
A + B	A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F
POINTS: 2	POINTS: 7	POINTS: 12	POINTS: 16	POINTS: 20
(A) The project meets all he	ealth and/or safety regulation	ions and laws for operation.		
(B) The project includes hea	alth and/or safety improve	ments beyond minimum re	quirements established by reg	ulations and laws.
	(C) The project improves	s health and/or safety for its	s immediate surroundings.	
		 (D) The project demonstra host or affected communi 	ates a net positive impact on h ities.	ealth and/or safety for the
	(E) The health and safety benefits and/or negative			
			impacts are equitably distributed	t team can demonstrate
			that the project does not disr	proportionately burden
			one community over another	(i.e.,
			social/environmental justice)	
				(F) The project provides critical infrastructure services to communities experiencing, or at risk of experiencing, imminent, negative health and/or personal safety impacts.





EVIDENCE AND DOCUMENTATION REQUIRED

A. Does the project meet all health and safety regulations and laws for operations?

- 1. Calculation reports on EMF
- 2. Fire prevention opinions and documentation
- 3. Opinions of the competent agencies on public health and safety
- 4. Project documentation

B. Has the project exceeded minimum legal health and safety requirements as established by regulations and laws?

- 1. Executive plan with evidence of the achievement of proposed improvement levels with respect to the limits of reference
- 2. Construction devices to highlight the presence of underground cables

C. Does the project include health and safety improvements for the immediate surroundings?

- 1. Streamlining operations related to construction
- 2. Final arrangements with safety repercussions (for example, road resurfacing).
- 3. Protective measures adopted around the supports (for example, warning signs, areas closed to unauthorised persons, demarcations of access points, boundary indications, etc.)
- 4. Protection of underwater cables
- 5. Alternative chosen that shows the minimisation or reduction of the risk
- 6. Control measures, for example, for supports near inhabited centres or hospital zones, for exposure to EMF, use of innovative technologies or new methods to reduce or minimise risks, burying cables, etc.

D. Does the project include health and safety improvements for the broader host or affected communities?

- 1. Reasons for the work (refer to DP or another document) including the continuity of the electrical service
- 2. Any existing infrastructure projects that are connected (e.g. viaduct adjustment)

E. Can the project team demonstrate that health and safety risks and impacts are not disproportionately borne by one community over another?

- 1. Feasibility study
- 2. Memoranda of Understanding and Program Agreements
- 3. Streamlining operations
- 4. Mitigations and compensatory work
- 5. Project documentation
- F. Will the project provide critical infrastructure services to communities experiencing, or at risk of experiencing, imminent negative health and/or personal safety impacts?
 - 1. National electrical network safety improvement (DP operation forms)





QL 1.3 IMPROVE CONSTRUCTION SAFETY

The importance of protecting the physical integrity of people is referenced in Terna's Code of Ethics. Workplace safety policy specifies the instructions, for example with an explicit commitment to promote the prevention of injuries for all workers, including those of contracting firms.

Safety is a culture that characterises the business's actions as a whole, with the aim of involving in the constant attention and improvement measures the actors in the supply chain who play a determining role in operation activities.

Over time, Terna has advanced various specific campaigns, such as the one against alcohol and drugs, and started a workplace health promotion program (WHP - Workplace Health Promotion) that, using the collaboration of all actors for prevention (employer, managers, worker safety representatives, PPSMs and company physician), has the goal of improving health and wellness in the workplace by acting on various fronts and with various tools. The program includes anti-smoking campaigns, campaigns for proper nutrition, sustainable mobility, etc.

INTENTTo protect and improve public and worker health during the construction phase.METRICSCommitments and measures to monitor safety, provide feedback mechanisms, train
personnel, establish safety plans and make available programs related to health.APPLICABILITYApplicable

	LE	VELS OF ACHIEVEME	INT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available
Commitment to Safety	Risk Analysis, Training and Security	Safe Work Practices and a Secure Site	Health Beyond the Site	
A + B	A + B + C	A + B + C + D	A + B + C + D + E	
POINTS: 2	POINTS: 5	POINTS: 10	POINTS: 14	
(A) The owner and generation (A) The owner and generation (A) improve health and safety	al contractor/construction may for onsite construction ope	anager have made strong co rations.	mmitments to monitor and	
(B) The project execution	plan requires internal docur	mentation that tracks health a	and safety performance and	
corrects deficiencies or pr	omotes best practices durin	g construction.		
	(C) Contractor implements safety and/or security competency training for all field personnel. Contractor or owner provides minimum training requirements for health and safety programs.			
		(D) The owner and contract project security plan. The plan includes physical information security when a The contractor provides min requirements.	tor have a specific site and security as well as appropriate. nimum training	
			(E) The owner or contractor provides programs that promote health and well-being, such as free health screenings or workshops	





EVIDENCE AND DOCUMENTATION REQUIRED

A. Have the project owner and contractor (GC/CM) made strong commitments to monitoring and improving health and safety?

- 1. Integrated management system policies
- 2. Integrated management system manual
- 3. "Zero Injuries" program targeting both Terna personnel and the personnel of contracting companies

B. Does the project include reliable feedback mechanisms to identify risks, conduct hazard analyses, and communicate hazards to personnel?

- 1. SCP, POS or other risk assessment documents
- 2. Coordination meeting reports
- 3. CSP and CSE appointments
- 4. Procedures for work under voltage (DPRET)
- 5. Procedures for handling injuries, analyses and reporting

C. Does the project include safety or security training requirements for personnel?

- 1. Training programs
- 2. Coordination meetings
- 3. Training and informational reports
- 4. Instructions for work site operations management
- 5. Operating instructions for the advance monitoring of work sites regarding workplace safety and the environment
- 6. Operating instructions for handling injuries at work
- D. Does the project include a comprehensive security plan to protect workers, the public, and sensitive information?
 - 1. SCP
 - 2. Construction site surveillance with entry control
 - 3. Agreements with DIGOS and/or surveillance institutions
 - 4. Video surveillance systems

E. Does the project include health and/or well-being programs?

- 1. Corporate initiatives for awareness about alcohol and drugs
- 2. Any other initiatives for awareness or to promote health





QL 1.4 MINIMISE NOISE AND VIBRATION

Outdoor noise sources due to Terna's activities can be ascribed to some precise types present mainly in the stations, specifically:

- Noise due to switching manoeuvres;
- Noise from electricity generation units;
- Noise due to disconnector manoeuvres (capacitive discharges);
- Noise due to electrical discharges into the air near conductors under voltage (corona effect), especially evident when it is very humid;
- Noise and vibrations due to the operation of transformers and cooling fans

There are also occasional sources of noise related to specific maintenance activities such as:

- The noise of portable equipment used during maintenance of stations and power lines (mowers, string trimmers, drills, welding, compressors, etc.)
- The noise of equipment used to trim the trees along power lines (power saws, string trimmers, operator machinery, helicopters)

Noise production from an operating power line is due essentially to two physical phenomena: the wind and the corona effect. When the wind is especially intense, it can cause slight hissing by the conductors, a phenomenon that is moreover local and relatively insignificant. The corona effect, due to the voltage level of the conductors, is responsible for the light buzzing that is sometimes noticed in the immediate vicinity of the power line, especially under conditions with very humid air.

The vibrations produced during operations can be considered negligible compared to the scale of the projects.



	LE	VELS OF ACHIEVEME	NT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Noise Assessment	Target Noise Levels	Stakeholder Support	No Noise Increase	Noise Reductions
A + B	A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E
POINTS: 1	POINTS: 3	POINTS: 6	POINTS: 10	POINTS: 12
(A) The project team asse assessment occurs when	sses the potential for operat applicable vibrations are co	tional noise impacts on the s nsidered as a potential sourc	urrounding community and/ ce of noise and/or disruption	or environment. This
(B) Strategies are implement avoidance/source eliminat	ented to mitigate noise and/ ion, minimization, abatemer	or vibrations during operation nt/receiver reduction, and off	ns. Noise reduction follows a setting/compensation.	a mitigation hierarchy of
(C) The project adopts existing, or works with the community to set, target project noise levels for the impacted community.				
(D) The stakeholder engagement process demonstrates community awareness of targets (i.e. criterion C), mitigation strategies (i.e. criterion B), and noise impacts (i.e. criterion A).				
			(E) Noise reduction strategies and controls are sufficient to not increase noise within the surrounding community beyond existing	(E) Noise reduction strategies and controls are sufficient to reduce noise within the surrounding community beyond existing

conditions.

conditions.





EVIDENCE AND DOCUMENTATION REQUIRED

A. Has the project team assessed the potential for operational noise impacts on the surrounding community and/or environment?

- 1. Environmental analysis
- 2. Assessment of environmental risks
- 3. Acoustic impact technical report (for stations)
- 4. Project documentation (e.g. EIS or other documentation)

B. To what extent has the project mitigated noise generated as a result of the project?

1. Project documentation stating the technical solutions adopted to reduce or mitigate acoustic impact

C. Does the project set or adopt target noise levels?

- 1. Pre- and post-operation study on the area involved with the plant that shows that during the operational phase the project does not exceed the acoustic zoning limits (e.g. EIA or other project documentation)
- 2. Monitoring plan and campaigns

D. Has the project team engaged impacted stakeholders on issues of noise and vibration impacts, mitigation strategies, and target levels?

- 1. Authorisation documentation filed for public consultation (TWP and/or EIS)
- 2. Operating instructions for managing environmental reports/complaints and requests for information about the environment

E. To what extent will the project maintain or reduce existing noise levels?

CONSERVING

1. Pre- and post work study on the area involved by the plant, showing that the project does not increase noise/vibrations for the surrounding communities during operation

RESTORATIVE

- 1. Any streamlining and/or burying of cables
- 2. Sound insulation measures for existing plants





QL 1.5 MINIMISE LIGHT POLLUTION

Power lines do not have lighting (except for the indicator lights installed on the supports or others required by ENAC). There is lighting at the stations, which is designed according to real safety and operations requirements.

INTENT	To reduce backlighting, upward illumination and glare without risking safety during operations.
METRICS	The lighting meets requirements for backlighting, upward illumination and glare for illumination areas.
APPLICABILITY	Applicable

	LE	VELS OF ACHIEVEN	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Light Pollution Reduction	Master Lighting Plan	Eliminating Uplight	Backlight, Uplight, and Glare Reduction	Night Sky Restoration
A + B	A + B + C	A + B + C + D	A + E	A + E + F
POINTS: 1	POINTS: 3	POINTS: 6	POINTS: 10	POINTS: 12
(A) The project identifies lig operations.	hting needs and sensitive	community and environme	ental areas potentially impacted	d by light pollution during
(B) The project reduces ligh avoidance, minimization, pr	nt pollution following a miti otection, and offsetting. (C) The project impleme	gation hierarchy of		
	establishing lighting zon For each zone, the plan safety and security need environmental conserva when no longer needed.	es. outlines lighting goals, ls, specifies tion, and reduces lighting		
		(D) Light emission beyond 90 degrees is prevented. All project lighting meets BUG rating uplight requirements with no light emitted above 90 degrees.	(E) All project lighting meets glare requirements accordin standards.	backlight, uplight, and g to IES BUG rating
				(F) The project involves the removal or retrofitting of existing lighting so as to significantly reduce (>10%) overall existing lighting.





EVIDENCE AND DOCUMENTATION REQUIRED

- A. Has the project team conducted an assessment of lighting needs and impacts for the project?
 - 1. Documentation on lighting technique assessments performed (lighting system study, etc., or special techniques within the allowed limits)

B. To what extent has the project implemented strategies to reduce light pollution?

1. Architectural plan indicating the placement and orientation of the various light sources

C. Has the project developed a lighting plan establishing lighting zones?

1. Lighting plan

D. Will luminaires prevent light emission above 90 degrees?

- 1. Lighting system study showing the placement of the light sources
- E. Do all project lights meet backlight, uplight, and glare (BUG) requirements for their respective lighting zones?
 - 1. Specific techniques for contract tender with indications of the type of light sources required
 - 2. Lighting system study showing the type of light source used
- F. Does the project involve the removal or retrofitting of existing lighting so as to significantly reduce overall existing lighting?
 - 1. Any removal/modernisation plans for existing lighting





QL 1.6 MINIMISE CONSTRUCTION IMPACTS

This credit assesses the actions taken by the project team to limit the impact of the construction site on the places and residents in the areas involved in the work. This credit is intended to evaluate the actions taken by the project team to limit the noise, vibrations and dust that a construction site can cause in the surrounding areas in addition to intrusive lighting. The public safety and public mobility evaluations are also subject to assessment for the population living, residing or transiting near the area subject to the operation.

INTENT	To minimise or eliminate the temporary problems associated with the activities during the construction phase.
METRICS	Extent of the problems faced through the plans for managing the construction phase.
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT					
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available	
Initial Management Plan	Expanded Plan	Stakeholder Feedback	Complete Plan		
A + (B, C, D or E)	A + (B, C, D or E)	A + (B, C, D or E) + F	A + B + C + D + E + F		
(1 impact)	(2 impacts)	(3 impacts)	(4 impacts)		
POINTS: 1	POINTS: 1	POINTS: 4	POINTS: 8		
(A) The project team impler	ments a construction mana	agement plan or policies to	address the temporary		
inconveniences associated	with construction. The pla	n or policies are informed b	y stakeholder engagement		
(B, C, D or E) The management plan addresses one (1) type of construction impact: noise, safety/wayfinding, access/mobility, or lighting.	(B, C, D or E) The management plan addresses two (2) types of construction impacts: noise, safety/wayfinding, access/mobility, or lighting.	(B, C, D or E) The management plan addresses three (3) types of construction impacts: noise, safety/wayfinding, access/mobility, or lighting.	(B, C, D and E) The management plan addresses four (4) types of construction impacts: noise, safety/wayfinding, access/mobility, and lighting.		
		(F) The construction man include robust feedback r performance monitoring a impacts.	agement plan or policies nechanisms and and reporting for construction		





EVIDENCE AND DOCUMENTATION REQUIRED

A. Has the project implemented a construction management plan or policies to address construction impacts?

- 1. Documentation that establishes the management of the construction site in the area subject to work in relation to the possible impacts it might generate
- 2. EIS or other project documentation
- 3. Assessment of environmental risks
- 4. Monitoring plan
- 5. Permits issued by the competent authorities and related instructions
- 6. Environmental specifications (CAPAMB)
- 7. Any EIA decree
- 8. Instructions for work site operations management
- 9. Operating instructions for managing environmental aspects in the Terna construction sites

B. Does the construction management plan mitigate noise and/or vibrations?

- 1. Environmental specifications (CAPAMB)
- 2. Monitoring plan
- 3. Environmental site supervision

C. Does the construction management plan address safety and wayfinding for pedestrians and vehicles during construction?

- 1. Safety Coordination Plan (SCP)
- 2. Coordination reports
- 3. Instructions and directives from the agencies managing the infrastructure involved (e.g. ordinances, authorisations, conventions)
- D. Does the construction management plan maintain access to public space and amenities during construction?
 - 1. Instructions and directives from the agencies managing the infrastructure involved (e.g. ordinances, authorisations, conventions)
 - 2. Easement agreements
 - 3. Safety Coordination Plan
- E. Does the construction management plan address distracting or intrusive lighting during construction?
 - 1. If the construction site activities do not need artificial lighting, evidence of the choice made to avoid impacts
- F. To what extent have feedback mechanism and performance monitoring been incorporated into the construction management plan?
 - 1. Operating instructions for advance monitoring of the construction sites regarding workplace and environmental safety and related check-lists
 - 2. Environmental monitoring plan (if applicable)





QL 2.1 ENHANCE COMMUNITY MOBILITY AND ACCESS

In the development of the National Electrical Network, Terna designs stations and power lines that may be overhead or underground.

Stations and overhead power lines do not interfere with mobility due to their conformation and type of operation.

Underground power lines are generally planned following existing streets, without taking up new ground and without influencing street operations, aside from during construction. In some cases, cables can be placed on unpaved roads that, if requested by the local community, may be made driveable, to improve local traffic.

Because of the type of projects Terna performs, which do not interfere with traffic and do not cause impacts on the subjects at issue in this credit, one can consider this credit to be not applicable, while preparing appropriate documentation in support of it for certification purposes.

INTENT	To plan the project as part of an interconnected network that supports all transport modes for the effective movement of people, goods and services.
PROTOCOL METRICS	The degree to which the project expands the choice of transport modes, reduces travel time, reduces the distances vehicles travel and improves the level of service.
APPLICABILITY	Not applicable

LEVELS OF ACHIEVEMENT					
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE	
Satisfactory Coordination	Controlled Access	Increased Access and Flow	Connected Networks	Restoring Community Connections	
A + B	A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F	
POINTS: 1	POINTS: 3	POINTS: 7	POINTS: 11	POINTS: 14	
(A) The project team demonstrates consistency with local and regional transportation plans.					
(B) The project team obtains input from the community and key stakeholders (e.g., public officials and operators of adjacent facilities, amenities, or transportation hubs) regarding improved access.					

(C) The project includes strategies to increase capacity, manage congestion, reduce vehicle distance travelled, or lower accident rates.

(D) The project team works with the community to expand mobility and access options and/or incorporate complete streets policies.

(E) The project addresses long-term mobility and access needs of the community.

(F) The project creates new or restores previous connections between communities.





EVIDENCE AND DOCUMENTATION REQUIRED				
Α.	Is the project consistent with local transportation plans?			
	Not applicable			
В.	Has the project team obtained input from the community and key stakeholders regarding issues of mobility and access?			
	Not applicable			
C.	Does the project include strategies to increase capacity, manage congestion, reduce vehicle distance traveled, or lower accident rates?			
	Not applicable			
D.	Has the project team worked with the community to expand mobility and access options and/or incorporate complete streets policies?			
	Not applicable			
E.	Has the project team considered the long-term mobility and access needs of the community?			
	Not applicable			
F.	Does the project create new or restore previous connections between communities?			
	Not applicable			
	DOCUMENTATION IN SUPPORT OF NON APPLICABILITY			
1.	General technical report that makes the non applicability of the credit apparent			





QL 2.2 ENCOURAGE SUSTAINABLE TRANSPORTATION

In the development of the National Electrical Network, Terna designs electrical stations and lines, so they are designs not intended directly to incentivise sustainable transport.

The impact of Terna projects on sustainable mobility may be indirect, in which case the goal of the design in question is the connection of a section of railway to the NTN or if, as compensatory work, Terna funds urban retrofitting projects shared with the communities involved, such as bicycle trails, cycling and pedestrian trails, sidewalks, etc.

The credit can thus be considered to be not applicable, while preparing appropriate supporting documentation for certification purposes.

INTENT	To increase accessibility of sustainable modes of transport, which include active, shared and/or collective transport.
PROTOCOL METRICS	The degree to which active, shared or collective transport options are accessible, encouraged and supported as part of a broader network of integrated transport.
APPLICABILITY	Not applicable

LEVELS OF ACHIEVEMENT				
Not Available	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
	Access to Transit or Active Transportation	Encourages Transit or Active Transportation	Transit or Active Transportation Programs	New Connections
	A	A + B	A + B + C	A + B + C + D
	POINTS: 5	POINTS: 8	POINTS: 12	POINTS: 16
	(A) The project creates or offers convenient access to shared/mass transportation OR active transportation (e.g., extended contiguous trails and/or bicycle networks).			
	(B) Beyond proximity, the project is configured and designed to encourage the use of active, shared, or mass transportation.			
		(C) The project provides programs and/or facilities that support the use of active, shared, or mass transportation.		
				(D) The active and/or shared transportation improvements contribute to a larger integrated transportation strategy for the community

or region.

network.

The project creates new connections or rehabilitates/repurposes unused, underused, or previously disconnected pathways, bikeways, rail, and/or other modes of transportation to enhance the efficiency, quality, or level of service of the overall





	EVIDENCE AND DOCUMENTATION REQUIRED
Α.	Does the project provide convenient access to active, shared, or mass transportation options?
	Not applicable
В.	Is the project configured and designed in such a way to encourage active, shared, and/or mass transportation options?
	Not applicable
C.	Does the project include programs and facilities that support the use of active transportation and transit?
	Not applicable
D.	Does the project contribute to a larger integrated active, shared, or mass transportation strategy for the community or region?
	Not applicable
	DOCUMENTATION SUPPORTING NON APPLICABILITY
1.	General technical report that makes the non applicability of the credit apparent





QL 2.3 IMPROVE ACCESS AND WAYFINDING

Electrical infrastructure must not be accessible to the public for safety reasons. Furthermore, under normal conditions the infrastructure is not staffed.

The credit can thus be considered to be not applicable, while preparing appropriate supporting documentation for certification purposes.

INTENT	To design infrastructure to provide safe and appropriate access to the project and/or the areas around it, in order to integrate it into the surrounding communities.
PROTOCOL METRICS	To prepare and provide clear, safe and easy to follow access for emergency services and normal vehicular or pedestrian traffic.
APPLICABILITY	Not applicable

LEVELS OF ACHIEVEMENT					
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available	
Emergency Management	Protecting Surroundings	Safety Audits	Public Access		
А	A + B	A + B + C	A + B + C + D		
POINTS: 1	POINTS: 5	POINTS: 9	POINTS: 14		
	clear signage to reduce negative impact on its surroundings caused by vehicle or pedestrian traffic. The project integrates well with its surroundings through clear signage and wayfinding.				
	(C) The project provides points for safe public access. Universal design standards are used to ensure broad accessibility and safety.				
			(D) The project has a positive and transformative impact on community or neighborhood access and/or wayfinding.		




	EVIDENCE AND DOCUMENTATION REQUIRED
Α.	Has the project addressed access, safety, and wayfinding for incident management including evacuation and emergency personnel?
	Not applicable
В.	Does the project utilize access, safety, and signage to protect or minimize impacts on the surroundings?
	Not applicable
C.	Does the project provide safe public access points for the benefit of the community?
	Non applicabile
D.	Does the project have a positive and transformative impact on community neighborhood access, safety, and/or wayfinding?
	Not applicable
	DOCUMENTATION SUPPORTING NON APPLICABILITY

1. General technical report that makes the non applicability of the credit apparent





QL 3.1 ADVANCE EQUITY AND SOCIAL JUSTICE

Network development is an essential function for Terna.

Terna plans the development of the NTN on the basis of:

- the trends in energy demand and the forecast for energy demand to be met;
- the need to strengthen the network;
- requests to connect new generation plants to the network.

The development of the electrical transmission network has multiple objectives:

- ensuring the safety and continuity of the supply;
- increasing the efficiency and economy of the transmission service and the national electrical system;
- improving the quality of the service;
- connecting all parties entitled to it to the national transmission network;
- reducing network congestion;
- developing and strengthening the interconnection with foreign countries;
- respecting environmental and landscaping constraints.

Terna ensures fairness and social justice in these objectives by guaranteeing that all citizens can benefit from the safety, continuity, efficiency and affordability of the service and ensuring all entitled parties have a connection to the NTN.

INTENT PROTOCOL METRICS

To ensure fairness and social justice are essential considerations in our decision-making and planning process.

The degree to which fairness and social justice are considered in the stakeholder engagement process, in the duties of the project team and in the decision-making process.

APPLICABILITY Applicable





LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Understanding Equity	Mitigation	Empowerment	Equitable Access to Benefits	Equitable Futures
A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F	A + B + C + D + E + F + G
POINTS: 3	POINTS: 6	POINTS: 10	POINTS: 14	POINTS: 18
(A) Stakeholder engagemen When projects impact, or po and mutual understanding t	nt is conducted early and otentially impact, indigeno hat supports the autonom	informed by the historic cor us communities, specific at y, authority, and rights of th	ntext of equity, social justice, a tention is given to developing a nese communities.	nd environmental justice. a relationship of respect
(B) The project team assesses the social impacts the project will have on the host and affected communities. This includes mapping impacts and benefits across local communities.				
(C) Key members of the project team make institutional commitments to equity and social justice, including non-discrimination; diversity and inclusion; and pay equity. Large-scale projects make targeted and project-specific commitments.				
(D) Based on the assessment of social impacts, the project addresses or mitigates social impacts. Mitigation strategies are informed by stakeholder consultation and participation.				
(E) The social, economic, and environmental benefits and impacts of the project are shown to not disproportionately favor or disfavor any community.				nd impacts of the project y community.
(F) The project empowers communities to engage in the development process. Qualified professionals identify unconscious biases and barriers to inclusion. Programs target higher rates of engagement, and include transparent grievance mechanisms to facilitate resolutions.				

(G) The project positively addresses or corrects an existing or historic injustice or imbalance.

EVIDENCE AND DOCUMENTATION REQUIRED

A. Does the stakeholder engagement process take into account the historic context of equity and social justice within affected communities?

- In launching the public consultation process, Terna starts a preliminary analysis of the social and historic context of the communities affected by the work in order to conduct the public consultation as effectively as possible:
 - 1. Agency reports on the territory
 - 2. Guidelines for local stakeholder involvement in investments into Terna's electrical network
 - 3. Analysis of the social context in the ER
- B. Has the project team assessed the social impacts the project will have on the host and affected communities?
 - During the SEA stage of the DP, a set of sustainability indicators is applied to the ER for each operation, including those related to territorial and social sustainability:
 - 1. Development Plan
 - 2. Environmental Report
- C. Have key members of the project team made commitments to equity and social justice within their organizations?





- Code of Ethics
- Integrated Management System policies
- Sustainability Report
- D. Has the project addressed social impacts related to equity and social justice?
 - While planning for the electricity demand, Terna examines the need to develop the network, with an orientation to a holistic model that maximises the benefits and minimises the social, environmental and economic impacts:
 - 1. Development Plan (reasons for the work)
 - 2. EIS.
- E. Will the impacts and benefits of the project be distributed equitably throughout affected communities?

• As national development projects, Terna projects cross through territories, bringing benefits that at first glance may be attributed to outlying or broader areas, but in general each development project helps to improve the service's efficiency and safety:

- 1. Development Plan
- 2. Reasons for the work
- 3. Any compensatory work in the event of impacts located in specific communities
- 4. Memoranda of Understanding, Program Agreements or Conventions

F. Has the project team empowered communities to engage in the development process?

- Through the public consultation forums with local agencies, other stakeholders and the Terna Meets with citizens:
 - 1. Stakeholder Engagement procedure
 - 2. Public consultation forum evidence
 - 3. Terna Meets documentation

G. Does the project positively address or correct an existing or historic injustice or imbalance?

- As they are restorative, it must be shown that the project allows an existing imbalance to be remedied (e.g. electrical connection that removes limitations on renewable production) or that improves the safety of the service to allow better development of production areas, providing evidence of the goals of the project, such as:
 - Reduction of network congestion between and in market zones and intra-zonal congestion, to allow better enjoyment of the national generation ability, more integration and competitiveness in the market and, consequently, a possible reduction in the energy price and system fees for the end customer;
 - Connections to the NTN or an increase in the connection for islands or isolated territorial areas
 - 1. Development Plan
 - 2. Reasons for the work





QL 3.2 PRESERVE HISTORIC AND CULTURAL RESOURCES

This credit is intended to enhance the actions taken to protect and preserve our historic and cultural heritage.

Sharing the network development needs with local institutions and hearing stakeholder opinions are voluntary actions Terna takes to encourage better siting of new work, identifying the best territorial corridors based on criteria characterising the territory (known as 'ERPA criteria': Exclusion, Repulsion, Problems and Attraction) and with the support of GIS (Geographic Information System) technology, which contains all the information related to different types of land use and related preservation constraints (territorial, naturalistic, cultural, landscaping, etc.).

INTENT	To preserve or restore significant historic/cultural sites and related resources.
PROTOCOL METRICS	Actions taken to identify, preserve or restore cultural resources.
APPLICABILITY	Applicable

	LE	VELS OF ACHIEVEN	IENT	
Not Available	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
	Stakeholder Consultation	Expanded Search	Conservation	Restoration
	A + B	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F
	POINTS: 2	POINTS: 7	POINTS: 12	POINTS: 18
	(A) The project team we historic and cultural rese	orks with the community and ources in and around the pr	d required regulatory and reso oject site.	urce agencies to identify
	(B) The project implements strategies to document, protect, or enhance historic and cultural resources.			
	(C) The assessment of cultural resources intentionally extends beyond national or subnational registries to identify important parts of the community culture such as places, events, natural features, oral traditions, or local skills.			
		(D) Stakeholders of the h project's development an	istoric/cultural resources are c d contribute to developing a se	onsulted early in the ensitive design approach.
			(E) For historic and/or cultur criteria A and C the project is preserve/protect the charact those resources.	al resources identified in s designed to fully er-defining features of
				(F) The project enhances or restores a threatened or degraded historic/cultural resource or results in a historical resource being added to a protected registry.





EVIDENCE AND DOCUMENTATION REQUIRED

- A. Has the project team worked with the community and required regulatory and resource agencies to identify historic and cultural resources?
 - 1. Identification of official assets (such as maps, asset cards, bibliographic material or lists of assets)
 - 2. Collection and analysis of the data available (Terna's map database) including data received through special Memoranda of Understanding on data exchanges with the Ministry of Culture, the regions and the oversight bodies
 - 3. Analysis of the constraints during the planning phase (such as interference of new operations in areas of scenic, historic, cultural or archaeological importance)
 - 4. SEA protocols with the regions
 - 5. Reports or minutes of meetings with municipalities, regions, oversight bodies, etc.

B. Has the project team developed strategies to document, protect, or enhance historic and cultural resources to the project?

- 1. indicator of *l*₂₄ territorial impact in the ER operation forms in the DP
- 2. Analyses of constraints, including via application of ERPA criteria, in order to orient the siting of the work, minimising the impacts on the territory
- 3. Drawing up design documentation focussed on the protection and improvement of historic/cultural sites involved in the project:
 - EIS Section on the selection of alternatives;
 - Form from the related environmental report;
 - Landscaping report, archaeological report or alternative documents assessing the presence of valuable elements

C. Does the identification of historic/cultural resources extend beyond registries to identify important parts of the community culture?

- 1. Evidence of meetings (such as emails calling meetings with orders of the day, list of participants, meeting minutes, inspection reports, etc.)
- 2. Memoranda of Understanding with agencies
- 3. Identification of local assets (for example, maps, asset sheets, bibliographic material or lists)
- 4. Any stakeholder observations received during the invitation to tender for the project for authorisation purposes

D. Has the project team worked with stakeholders to develop a sensitive design and approach?

- 1. Application of ERPA criteria for the siting of the project
- 2. Any references or directives received from the oversight bodies or local communities for the protection of an asset and that, during the various planning stages for the work, have been collected, agreed upon and integrated into the project, through, for example:
 - Evidence of meetings (such as emails calling meetings with orders of the day, list of participants, meeting reports, inspection reports, etc.);
 - Memoranda of Understanding with agencies;
 - Identification of local assets (for example, maps, asset sheets or bibliographic material, lists);
 - Verification of compliance with specific directives.
- E. Does the project avoid all historic/cultural resources or fully preserve/protect their characterdefining features?
 - 1. Preliminary investigations shared with the oversight bodies or project papers (for example





design variations, Environmental Impact Study, plan for archaeological surveys, landscaping report, archaeological report, mitigation work)

- F. Does the project enhance or restore threatened or degraded historic/cultural resources in the community, or add a resource to a protected registry?
 - 1. Any compensatory work, such as restoration projects or redevelopment of assets
 - 2. Any enhancement of data banks with findings





QL 3.3 ENHANCE VIEWS AND LOCAL CHARACTER

Choosing the layout is the most delicate stage of planning, as it determines the environmental impact of the entire development operation.

This is why Terna, notwithstanding the need to identify a layout that allows the regular operation and maintenance of the power line, seeks design solutions that minimise interference with areas of high scenic value.

Terna's planning includes the study of construction site plans aimed at using existing roads or paths to reduce to a minimum the opening of new paths, especially in wooded or protected areas.

Drawing up the Environmental Impact Study allows us to have detailed indications on the various components that assist the designers in transforming the layout into an optimised design.

Great attention is dedicated to minimising the visual impact, which, when not able to be mitigated through appropriate precise siting choices and/or use of morphological screens, can use the choice of supports with a reduced visual impact or the use of underground cables.

INTENT	To protect or improve physical and natural features and/or the local character of the project site and the surrounding area.
PROTOCOL METRICS	Measures taken to develop community resources, to implement protective measures and to assess overall satisfaction.
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Value Identification	Alignment With Community Values	Preservation And Enhancement	Connections And Collaboration	Restoring Community Character
A + B	A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F
POINTS: 1	POINTS: 3	POINTS: 7	POINTS: 11	POINTS: 14
(A) The project team identifies community values and concerns regarding protection and enhancement of views and local character.				
(B) Specific design features preserve or enhance views and local character and are informed by the stakeholder consultation process.				
(C) Guidelines are adopted or developed to preserve or enhance views and local character. The aesthetic quality of the project is important.				
(D) A construction management plan protects character features, high-value landscapes, or landscape features during construction			features, high-value	

(E) Community feedback from the stakeholder engagement process verifies actions taken in criteria A, B, and C.

> (F) The project restores previously lost or degraded views or community features OR enhances the community by creating new features of local character. Actions are supported through the stakeholder engagement process.





A. Has the project team made a reasonable determination of community values and concerns regarding protection and enhancement of views and local character? 1. Collection and analysis of the data available (Terna's map database) including data received through special Memoranda of Understanding on data exchanges with the Ministry of Culture, the regions and the oversight bodies 2. Reports or minutes from meetings with municipalities, regions, etc. 3. Identification of the territory's distinctive features, analyses of the character of the urban, natural and architectural landscape and view points, for example done by processing maps, inspections and photographic reports B. Has the project team implemented specific strategies to preserve or enhance views and local character? 1. Analysis of constraints, including by application of ERPA criteria, to orient the siting of the work to minimise impacts on the territory 2. Any design/technological choices made to minimise visual impacts (for example, underground cables, tubular posts, reinforced stations, support colouration, etc.) 3. Any masking expected for the work to minimise the effects on the enjoyment of the scenery C. Il Has the project team developed or adopted existing guidelines to preserve views and local character? 1. Analysis of local planning (environmental and scenic documentation) Terna also uses work design standards (guidelines, operating procedures, operating instructions) for a design integrated with the aspects to be added to the infrastructure: 2. AEI guidelines for environmental addition of outdoor overhead lines and electrical stations 3. Terna outlined the entire design process in its Plant Planning and Construction Process Manual and the guidelines from construction planning. In support of this, reference can be made, as a function of the planning stage, to the reference documentation for internal use useful for a design integrated with the environmental aspects, such as: i. Operating procedure for final planning and authorisation and operating instructions; ii. Operating procedure for executive planning and operating instructions; iii. Operating procedure for construction and operating instructions; iv. Monitoring of the design and construction process D. Does the project include a construction management plan to protect important natural or manmade features? Below is a list of regulatory references and Terna's tools to help establish the standards in the contract and the construction of the work (guidelines, operating procedures, operating instructions). 1. Terna's operating instructions on managing environmental aspects during plant construction and technical contract specifications 2. Environmental specifications for the contract to construct the electrical lines 3. Identification of the measures to be taken to mitigate the visual impact of high-value scenic assets during construction, e.g.: instructions that the contractor must follow during the construction phase or the implementation of an Environmental Monitoring Plan (EMP) E. Does the community support actions taken to preserve or enhance views and local character? 1. Any environmental and scenic opinions obtained during the authorisation process 2. Evidence of any agreements with organisations involved in the implementation of the work to improve the work's addition to the landscape: Rev. 00 July 2021 45 of 161

EVIDENCE AND DOCUMENTATION REQUIRED





- i. Evidence of meetings (such as emails calling meetings with orders of the day, list of participants, meeting reports, inspection reports, etc.);
- ii. Memoranda of Understanding or agreements with agencies

F. Will the project result in the restoration or enhancement of views or local character?

- 1. Any compensatory work with projects to restore degraded functionality or to create new functions (e.g.: scenic route restoration projects, ecological corridors or other elements of the local character that were previously lost or degraded)
- 2. Projects to remove existing structures as part of streamlining operations





QL 3.4 ENHANCE PUBLIC SPACE AND AMENITIES

Terna's projects are coordinated with local communities in a way to cause the least possible disturbance to the community's public spaces.

In cases when compensatory work should be performed to restore any residual environmental impacts and in the event that the compensatory work involves work that improves the enjoyment of public spaces, compensatory work will also be considered for this credit.

INTENT	To improve recreational structures and spaces accessible to the public to make the community more liveable.
PROTOCOL METRICS	Plans and commitments to protect, conserve, improve and/or restore public and recreational spaces.
APPLICABILITY	Applicable

	LE	VELS OF ACHIEVEN	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
No Net Loss	Community Involvement	Improvement and Enhancement	Overall Net Benefit	Substantial Restoration
A + B	A + B + C	A + B + C + D	A + B + C + D	A + B + C + D
POINTS: 1	POINTS: 3	POINTS: 7	POINTS: 11	POINTS: 14
(A) The project assesses impacts to existing public amenities and implements mitigation strategies. The project will not result in the net loss of public amenities.				
(B) The stakeholder engage	ement process specifically	r includes issues of public s	pace and amenities.	
	(C) The project team can space/amenities.	(D) The project involves significant enhancements to	(D) The project creates a new public resource or amenity to the community	(D) The project restores lost, degraded/unusable, or
		existing public space or amenities.	that did not previously exist. The scope of the new public space/amenity is commensurate with the scope and scale of the project.	at-risk public space or amenities. The public space/amenity is an asset of significance to the local community commensurate with the scope and scale of the project.





EVIDENCE AND DOCUMENTATION REQUIRED

A. Has the project team assessed and mitigated impacts to existing public space and/or amenities?

Assessment of the project's impact on public spaces or services (e.g. parks, squares, trails, playgrounds or wildlife shelters) to show that the project does not impede the enjoyment of the asset and that the project includes mitigating or compensatory operations

These considerations may be contained in one of the following project plans:

- 1. Collection and analysis of the data available (Terna's mapping data bank, ERPA criteria) including data received via special Memoranda of Understanding for data exchanges with the Ministry of Culture, the regions and oversight bodies
- 2. Identification of assets and services and writing of maps, site reports and photographic reports
- 3. Feasibility analyses, pre-screening and verification of liability to evaluate, when required, if the projects may have a significant positive or negative impact on the environment and if they should be subjected to assessments
- 4. Landscaping report to explain the status of the sites (scenic context and area of operation) before carrying out the planned work as well as the operation's design features and to show as clearly and thoroughly as possible the status of the sites after the operation
- 5. For work subject to EIAs, production of the Environmental Impact Study (EIS) to assess the environmental impacts generated by the planned work
- 6. EMF calculation related to sensitive areas identified
- 7. Mitigation of compensatory work anticipated for the project (restoration of areas or community gardens)

B. Does the stakeholder engagement process specifically address issues of public space and amenities?

- 1. Documents declaring the involvement of agencies such as clearances and opinions, reports or minutes of meetings with municipalities, regions, etc.
- 2. Compliance with specific authorisation-related directives

C. Are public stakeholders satisfied with the project plans involving public space and amenities?

- 1. Feedback from Terna Meets
- 2. Agreements to compensate for residual environmental impacts with the funding of retrofitting projects in public or recreational spaces

D. To what extent does the project involve significantly enhancing, creating, or restoring public space and/or amenities?

SUPERIOR

1. Show that the project creates a significant improvement to the existing public spaces, for example trail restoration or re-surfacing roads after placing underground cables. Also assess any streamlining that could remove overhead lines to free up public spaces in urban centres.

CONSERVING

- 2. Assess whether the project helps to create new access ways such as access roads for work maintenance, new wildlife shelter areas (areas under the supports).
- 3. Agreements to compensate for residual environmental impacts with the funding of retrofitting projects in public or recreational spaces Show that the compensatory work creates new public spaces (such as new playgrounds).





RESTORATIVE

4. Restoration of a degraded public area (assess the compensatory work or retrofit a degraded area following streamlining)





QL 0.0 INNOVATE OR EXCEED CREDIT REQUIREMENTS

This credit allows an evaluation of innovative elements characteristic of the project that go beyond expectations in other credits in the category.

The scores related to this credit are not included in the total applicable points and therefore qualify as bonus scores.

INTENT

To reward exceptional performance beyond the expectations of the system and the application of innovative methods that promote state-of-the-art sustainable infrastructure.

METRICS

The project's sustainability performance qualifies as innovation or exceptional performance or is not otherwise recognised in the existing credits.

LEVELS OF ACHIEVEMENT		
INNOVATION		
Innovate or Exceed Credit Requirement		
A or B or C		
POINTS: MAX 10		
(A) Implement innovative methods, technologies, or processes that are novel either in their use, application, or within the local regulatory or cultural context. OR		
(B) Implement measures that exceed the highest existing requirements within one or more Quality of Life credits. OR		

(C) Address additional aspects of sustainability not currently recognized in Envision

EVIDENCE AND DOCUMENTATION REQUIRED

- A. To what extent does the project implement innovative methods, technologies, or processes that overcome significant problems, barriers or limitations, or create scalable and transferable solutions?
 - 1. Documentation highlighting the application of innovative technical methods or solutions.

B. To what extent does the project exceed the highest levels of achievement for a given credit?

- 1. Documentation that highlights the fulfilment of the requisites required for the maximum achievement level of a credit in the *Quality of Life* category
- C. To what extent does the project address a sustainability aspect that is not currently addressed by the Envision system?
 - 1. Documentation highlighting how the project addresses an aspect of sustainability pertaining to the *Quality of Life* category, not currently evaluated by the other credits in the category.





Leadership

LD 1.1 PROVIDE EFFECTIVE LEADERSHIP AND COLLABORATION

This criterion is intended to enhance the project teams and purchaser's commitment in the development of designs and pursuing sustainability objectives.

INTENT	To provide evidence of effective commitment and leadership to achieve the project's sustainability objectives.
METRICS	Measurement of the degree to which the purchaser and the project team made commitments in general or related to the specific project and implemented sustainability management policies.
APPLICABILITY	Applicable

		LEVELS OF ACHIEV		
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available
Initial Commitment	Strong Commitment	Strong Commitment	Sustainability As A Core Value	
Α	A + B	A + B + C	A + B + C + D	
POINTS: 2	POINTS: 5	POINTS: 12	POINTS: 18	
(A) A written commitme economic aspects of th a project chartering see	e project. Commitments to ssion and/or contract docu	ect team to address the soci- o sustainability are clearly an ments.	al, environmental, and ticulated at the project level in	
	(B) Commitments are so commensurate with the	upported by a sustainability scope, scale, and complexit	management policy that is ty of the project.	
		(C) Sustainability commitmed their achievement, are rev meetings or written reports	nents, and progress toward isited periodically through 5.	
			(D) Key members of the project team have made clear commitments to sustainability, as evidenced by:	
			 Organizational sustainability policies and/or reports. Examples of projects, or initiatives, to improve 	
			 sustainable performance. Sustainability strategies embedded into their business strategy. 	
			 Third-party organizational recognition or commitments. 	





EVIDENCE AND DOCUMENTATION REQUIRED

A. Have the project owner and project team made written commitments to address the social, environmental, and economic aspects of the project?

Since 2004, Terna has voluntarily taken a course of public consultation, first with the regions then with the provinces and municipalities, that over time led to the signing of a series of Memoranda of Understanding and program agreements in which Terna makes the commitment to plan its development/renovation work following shared siting criteria that take into account social, environmental and economic aspects (ERPA criteria).

- 1. Memorandum of Understanding with the region involved with the project
- 2. Environmental report from the DP related to the project
- 3. Sustainability report
- 4. Agreements with local agencies
- 5. Further evidence revealed during the authorisation process

B. Is the project supported by a sustainability management policy commensurate with the scope, scale, and complexity of the project?

- 1. Integrated management system policies
- 2. Specific project sheet indicating the project's goals and the application of indicators that make it sustainable.
- 3. DP form or SEA form
- 4. Sustainability actions and KPIs for the Strategic Plan

Before starting designing, Terna launches a public consultation process with the local agencies involved, to which it presents the electrical demand and asks for explanation of the specificities of the territory under various social, environmental and cultural aspects.

- 5. Guidelines related to planning and implementation
- 6. Integrated management system policies
- 7. Guidelines related to the stakeholders' management model
- 8. Guidelines related to the involvement of local stakeholders in investments into Terna's electrical network

C. Has the project team periodically revisited project sustainability commitments throughout project delivery?

- 1. Annexes from the Development Plan (progress document from the DP that gives updates on the project's status until its completion)
- 2. Operation form in the SEA Environmental Report in the DP
- 3. Territory report and authorisations analyses of critical issues with Terna work

D. Have key members of the project team made organizational commitments to sustainability?

- 1. Annual sustainability report, which is revised by a third party and which assesses the three previous years
- 2. Strategic plan, which includes sustainability strategies (possibly with a 'Sustainability Actions and KPIs from the Strategic Plan' document)
- 3. Participation in the Global Compact
- 4. Evidence of the Indices of Sustainability¹
 - BLOOMBERG GENDER EQUALITY INDEX
 - DOW JONES SUSTAINABILITY INDEX
 - ECPI
 - ETHIBEL SUSTAINABILITY INDEX-ESI
 - EURONEXT VIGEO

¹ The indices of sustainability in point 4 of Criterion D can be modified or updated.





- FTSE ECPI
- FTSE4Good
- MSCI GLOBAL SUSTAINABILITY
- STOXX® ESG
- STOXX® LOW CARBON
- UNITED NATIONS GLOBAL COMPACT-"GC100.





LD 1.2 FOSTER COLLABORATION AND TEAMWORK

This criterion is aimed at enhancing the project team's commitment to ensuring an integrated, multidisciplinary approach in the various project development stages.

INTENT	To improve the sustainability of the project through interdisciplinary collaboration and teamwork.
METRICS	The degree of detail and inclusivity of the interdisciplinary collaboration process and improvements in the sustainability performance deriving from it.
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available
Early Collaboration	Achieving Goals	Ongoing Collaboration	Life-Cycle Collaboration	
Α	A + B	A + B + C	A + B + C + D	
POINTS: 2	POINTS: 5	POINTS: 12	POINTS: 18	
(A) Sustainability goals are among project staff at all le	e defined early during interd evels.	isciplinary collaborative proje	ect kickoff meetings	
	(B) The project team can of that resulted from the inter enhancements should res sustainability add-ons.	demonstrate sustainability per disciplinary collaborative pro ult from a whole-systems de	erformance enhancements ocess. Performance sign approach, rather than	
		(C) Ongoing collaboration throughout design with the interdisciplinary project tea discuss potential opportun barriers to integrated desig broad set of project partici	meetings are conducted e owner and the am to clarify expectations, ities, and identify potential gn. Meetings involve a pants.	
			(D) The interdisciplinary collaboration or integrated design process specifically includes stakeholders from later construction, operations, and/or maintenance phases. Important considerations	
			understood and incorporated into the project.	





EVIDENCE AND DOCUMENTATION REQUIRED A. Was an interdisciplinary collaborative kickoff meeting held early in the project to define sustainability goals? 1. Operating Procedure related to network planning (planning process with twice-yearly meetings to monitor development operations and ask for new needs) Territory meeting results for collection and sharing of new needs 2. B. To what extent has project sustainability performance been enhanced as a result of the interdisciplinary collaboration? 1. Twice-yearly Development Plan meetings to discuss objectives, new electrical demand, plan progress, third-party requests (e.g. connections) Emails calling meetings/reports/evidence of participation in meetings of the various departments 2. involved 3. Guidelines related to planning and implementation C. To what extent did the project team establish regular interdisciplinary and collaborative meetings to set and achieve sustainability goals? 1. Reports/evidence of twice-yearly Development Plan meetings Reports/evidence of authorisation status update meetings 2. 3. Documentation showing the progress of the project 4. Guidelines related to planning and implementation 5. Emails calling meetings/reports/evidence of participation in meetings of the various departments involved D. Does the process include construction, operations, or maintenance stakeholders, for better incorporation of considerations in later project phases? Operating procedure related to network planning 2. Guidelines on planning and implementation with indications of the various departments involved

 Emails calling meetings/reports/evidence of participation in meetings of the various departments involved





LD 1.3 PROVIDE FOR STAKEHOLDER INVOLVEMENT

The stakeholder involvement process takes place in several steps, from planning the demand to public consultation to preliminary planning, then the authorisation stage and finally the performance of the work, by involving in the various steps both agencies and administrations involved (for example, technical forums, service conferences, joint oversight) and citizens (Terna Meets).

Terna starts voluntary participation processes by holding meetings with administrations and citizens, aimed at mutual comparisons to enhance knowledge of the territory and awareness of critical issues, and to harmonise the needs for NTN development with territorial planning and protection of the population.

Stakeholder involvement is done starting with the early planning stages, as part of the SEA procedure in the NTN development plan, and can steer development operations so as to bring together electricity demand and the needs of the territory.

During the authorisation and EIA procedure, community involvement, through consultation of the planning documentation and environmental analyses, allows siting solutions to be identified that are shared and minimise impacts.

INTENT	Continuing involvement of the stakeholders in decision-making processes starting in the first stages of the project.
METRICS	Institution of solid, meaningful programs to identify and involve stakeholders continually with decision-making processes starting in the early stages of the project.
APPLICABILITY	Applicable





LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Active Engagement	Direct Engagement	Community Involvement	Community Satisfaction	Stakeholder Partnerships
A + B	A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F
POINTS: 3	POINTS: 6	POINTS: 9	POINTS: 14	POINTS: 18

(A) Primary and secondary stakeholders are identified through a stakeholder mapping process. Stakeholder concerns and specific objectives for stakeholder engagement are defined.

(B) A proactive stakeholder engagement process is established with clear objectives. This occurs at the earliest stages of planning and is sustained through project construction. Engagement moves beyond education into active dialogue. Stakeholder views are monitored, and a two-way line of communication is established to reply to inquiries. Sufficient opportunities are provided for stakeholders to be involved in decision making. The participation process is transparent with opportunities to provide meaningful input.

(C) A lead person from the project team, in addition to any public involvement lead or manager, works with stakeholder groups to understand communication needs and the desire for and scope of involvement.

(D) There are specific cases in which public input influenced or validated project outcomes. Potentially conflicting stakeholder views were evaluated and addressed equitably during decision making.

(E) Feedback is sought from stakeholders as to their satisfaction with the engagement process, and the resulting decisions were made based on their input.

(F) One or more stakeholders, having mutual interests or interdependencies, are identified and engaged as partners.

EVIDENCE AND DOCUMENTATION REQUIRED

- A. To what extent has the project team undertaken a stakeholder mapping exercise to determine stakeholders?
 - During the planning phase, Terna plans for an involvement process for stakeholders such as User Consultation Committees, NGOs, owners of merchant-line ventures, local communities, distributors, authorities and national and European institutions.
 - During the strategic environmental assessment, Terna identifies the categories of stakeholders and shares them with the related ministries.
 - 1. 'List of competent parties on environmental issues' section of the Preliminary Report and the Environmental Report.
 - During the authorisation stage and EIA procedure, Terna identifies the categories of stakeholders.
 - Authorisation application containing the list of agencies/administrations that should be involved in Services Conference to express their opinions on matters under their jurisdiction.
 - Public and private parties directly involved with the work are contacted via:
 - Communication to the municipal notice board
 - Notices in national and local newspapers
 - Directly (if fewer than 50)
 - Other parties, even if not directly involved, have visibility in any case from the municipal notice board and newspapers and can ask for access to the documents.
 - Terna also has existing contacts with communications agencies that are mapping stakeholders in the territory.

B. To what extent has the project team analyzed, planned, and executed the engagement for key project stakeholders?

1. Guidelines on local stakeholder involvement in investments into Terna's electrical network





- 2. Meetings, consultations and presentations on the project/new requirements to stakeholders involved in the DP approval process
- Terna established technical comparison forums with the administrations (of the regions and provinces, park authorities, environmental associations and municipalities).
 - 3. Meeting report/summary/minutes or emails proving the establishment of a technical forum for choosing alternatives using the ERPA criteria
- As part of the authorisation process, organisations involved in the project are listened to during the Services Conference at the Ministry of Economic Development and as part of the EIA procedure via meetings and reviews with the EIA committee. The agencies we confer with express their reasoned opinion, giving directives that help improve the project and its better incorporation into the territory.
 - 4. EIA decree
 - 5. Any CdS report
 - 6. Authorisation decree.
- C. Was a lead member of the project team directly involved with stakeholder groups to understand their needs?
 - As part of its corporate organisation, within the Administrative Processes Management and the Authorisations and Public Consultation Department, Terna identified professionals in the department to handle stakeholder involvement as part of NTN development, in concert with the project teams. Starting with the earliest steps in defining the operation, people in this department who are charged with stakeholder engagement should be included.
 - 1. Organisational structure chart for Administrative Processes Management

D. To what extent has stakeholder engagement feedback been incorporated into project plans, design, and/or decision making?

- During planning, feedback obtained from stakeholder involvement is verifiable by comparing documents on the progress of various versions of the DP, the application of new CBA indicators, meeting minutes, modification requests from local agencies, etc.
- The public consultation process that Terna launches at the first stage of the work allows an increasingly detailed analysis of the territory's needs and any impacts, encouraging the development of operation alternatives that better meet the needs for local development. The siting of the project's range of feasibility is the product of a course of public consultation and arises from indications offered by the agencies involved.
 - 1. Documentation describing the public consultation process (for example, EIAs or reports/minutes from technical forums)
 - 2. Documentation on citizen meeting days (for example, flyers, presentations, posters, images of the meetings, scans of citizen feedback and any observations received and discovered)
- During the authorisation phase, the agencies involved also provide directives that are incorporated into the final design and during implementation.
 - 1. Decree of environmental compatibility.
 - 2. Authorisation decree.
 - 3. Final design.
- E. Has the project team sought feedback from stakeholders as to their satisfaction with the engagement process and the resulting decisions that were made based on their input?
 - Preparation of surveys on the DP
 - The public consultation process provides positive results to be found during decisions taken in individual municipalities by the decision to sign agreements and technical reports.
- F. Has the project engaged one or more stakeholders as partners?
 - The public consultation process concludes with the signing of a Memorandum of Understanding and/or conventions with all main stakeholders.
 - 1. Memorandum of Understanding on collaboration (current or future) with the province/region and/or the park authority and/or the municipalities involved and/or environmental associations (e.g. WWF, LIPU, Legambiente)





2. Conventions signed with regions, provinces, municipalities or any other organisations





LD 1.4 PURSUE BY-PRODUCT SYNERGIES

the project.

This criterion is intended to assess the project team's efforts to identify possible synergies with the infrastructural context for more effective use of resources, from a circular economy perspective.

If new lines are being created, new materials should be used to ensure better features and energy performance.

In any case, an assessment of the resources needed and supply methods should be done. When system parts are available because of the disposal of other systems (as happens with streamlining operations), they should be evaluated for features compatible with the construction of the new project. Specifically, the re-use of glass insulators or transformers in other Terna projects should be evaluated.

INTENT	To critically re-examine whether traditional waste flows can be re-used to obtain a benefit.
METRICS	The degree to which the project team works in synergy with external groups to find a solution to reduce the amount of waste.
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Initial Investigation	Synergy Pursued	Short-Term Byproduct Reuse	Long-Term Byproduct Reuse	Circular Economy
A + B	A + B + C	A + B + D	A + B + D	A + B + E
POINTS: 3	POINTS: 6	POINTS: 12	POINTS: 14	POINTS: 18
(A) The project team conducts an assessment of the availability and viability of excess resources (i.e., waste) or capacity, including but not limited to waste materials, heating or cooling, financial capacity, land area/space, or management/personnel capacity.				
(B) Candidates for byproduct synergies or reuse are identified. This can include finding a beneficial reuse for the project's waste or excess resources, or the project's beneficial reuse of external waste or excess resources. Project teams should also consider ecosystem services where project waste or excess resources can support natural systems, or where natural systems can process and remove project waste.				
	(C) The project team demonstrates an active attempt to incorporate at least one byproduct synergy or reuse into	(D) The project successfully includes a byproduct synergy or reuse. Execution is a short-term or one-time	(D) The project successfully includes a byproduct synergy or reuse. Execution is a long-term regularly	(E) The project is fully engaged in a "circular economy" system whereby the majority of its operational waste is

byproduct synergy/reuse

(e.g., during

construction).

beneficially reused OR

operational resources

external waste streams.

the majority of its

are sourced from

recurring byproduct

throughout project

synergy/reuse

operations.





	EVIDENCE AND DOCUMENTATION REQUIRED
Α.	Has the project team assessed the availability of either internal or external excess resources or capacity?
	 Mapping of the possible plants/work sites nearby and the materials/equipment available. Guidelines on waste management in the companies in the Terna Group: Material removed from operation
	3. Operating instructions on waste management in the companies in the Terna Group - Material removed from operation
в.	Has the project team identified opportunities for byproduct synergies or reuse?
	1. Documentation related to any synergies identified
C.	Has the project team actively pursued a byproduct synergy or reuse?
	1. Documentation related to any synergies pursued
D.	Does the project include a byproduct synergy by utilizing unwanted excess resources or finding destinations for the beneficial reuse of unwanted excess resources?
	1. Documentation showing the actual implementation of a by-product synergy
E.	Is the project part of a circular economy, whereby the majority of operational byproducts are beneficially repurposed or the majority of operational resources consumed are beneficially repurposed?
	1. Documentation showing that most of the by-products are fruitfully re-used or that most of the resources consumed came from by-products





LD 2.1 ESTABLISH A SUSTAINABILITY MANAGEMENT PLAN

Sustainability is one of the main drivers in Terna's Development Plan, as Terna has adopted a baseline sustainability plan with three main features.

- Systemic sustainability: every project is conceived, designed and implemented on the basis of stringent analyses to maximise both environmental and economic advantages for the system.
- Construction sustainability: every project includes an in-depth study, and the project is shared with the local communities involved in the new infrastructure, always increasing the amount of attention paid to the territories.
- Innovation sustainability: a strategy focussed on the use of advanced technologies that encourage further development and the use of renewable sources, while continuing to ensure the system's safety standards.

Systemic sustainability is first applied in the Planning process and then in the Development Plan, as this is the stage when Terna examines the needs to develop the network, orienting itself with a model that maximises benefits and minimises social, environmental and economic impacts.

INTENT	To create a sustainability management system that can handle the scope, size and complexity of a project seeking to improve performance in terms of sustainability.
PROTOCOL METRICS	Organisational policies, authorities, mechanisms, training and corporate processes in action.
APPLICABILITY	Applicable





LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available
Plan	"Plan-Do-Check-Act"	Full Implementation	Managing Change	
A + B	A + B + C	A + B + C + D	A + B + C + D + E	
POINTS: 4	POINTS: 7	POINTS: 12	POINTS: 18	
(A) Roles and responsibiliti Their authority on the proje	es for addressing sustaina ct to affect change is suffice	ability are assigned to key m cient and clear.	nembers of the project team.	
(B) The project team development plans or polic project. The plan includes a environmental, social, and are established and prioritiz issues.	ops a sustainability manag- ies sufficient in scope and an index of all project featu- economic aspects of the p zed to reduce the project's	Jement plan or adopts exist scale to address the susta ures related to sustainability project. Sustainability goals impact. They are aligned v	ing sustainability inable performance of the , and an assessment of the and performance objectives vith community needs and	
	(C) The project manage and management contro targets.	ment plan contains sufficier ols to achieve its sustainabil	nt processes, action plans, lity goals and performance	
		(D) Implementation of the plan, and progress toward revisited periodically throu reports.	e sustainability management d established goals, is ugh meetings or written	
			(E) The plan is adaptable, flexible, and resilient enough to manage changes in environmental, social, or economic conditions of the project over time.	

EVIDENCE AND DOCUMENTATION REQUIRED

A. Are roles and responsibilities for addressing sustainability assigned to key members of the project team?

The company has special units on relationships with the territory and stakeholder engagement, which the Authorisations and Public Consultation facility takes care of. Within this department there is the EIA unit, which deals with the strategic evaluation of the Development Plan using sustainability indicators for each planned project, which is transformed into a design.

As part of the design, the Engineering department contains the Environmental Engineering office, which assesses the environmental and territorial sustainability of the designs.

Under Territorial Management, the Planning Units contain figures that also work on the environmental and territorial sustainability of the designs.

- 1. Corporate organisation chart
- 2. Operating instructions on operations management of construction sites
- 3. Operating instructions on the management of environmental aspects at Terna work sites
- 4. Environmental work site specifications
- 5. Environmental monitoring plan for the work site
- 6. Construction site plan
- 7. Sustainability Department organisational directives
- 8. Authorisation and Public Consultation Department organisational directives
- 9. Environmental Engineering and HSE Department organisational directives

B. Has a sustainability management plan been developed to assess and prioritize the environmental, economic, and social aspects of the project and set project sustainability goals, objectives, and targets?

- 1. Strategic Plan containing KPIs and sustainability actions
- 2. Development Plan (under the operation form 'sustainability' tag)
- 3. Communications plan





- 4. Corporation mission statement
- 5. Integrated management system

C. Does the project include a sustainability management plan that contains sufficient processes and management controls to address the sustainability goals, objectives, and targets?

- 1. Operating instructions on the operations management of the work sites
- 2. Environmental monitoring plan
- 3. Expropriations plan
- 4. KPI collection for sustainability reporting

D. Was the sustainability management plan implemented and periodically revisited?

- 1. Re-examination of KPIs and their addition to the Strategic Plan
- 2. Re-examination of the integrated management system

E. Is the project sustainability management plan adaptable, flexible, and resilient enough to manage changes in the environmental, social, or economic conditions of the project over its life?

- 1. Strategic Plan (reviewed annually)
- Development Plan (possible reconfirmation of the project in its progress compared to previous years under varying scenarios) New methodology for resilience during approvals by ARERA, which will be the basis for the operations plan to increase Terna's resilience





LD 2.2 PLAN FOR SUSTAINABLE COMMUNITIES

Sustainable network planning evolves in successive steps.

The planning process starts with an assessment of the status of the network, with the identification of territorial needs and with the application of projected scenarios. The social and environmental needs of the citizens are raised to the same level as electrical and economic needs.

Critical issues and solutions are identified in the second phase by sharing the territorial needs with the communities involved.

The technical and economic assessment phase includes quantification of the environmental, social and economic costs and benefits.

The implementation solution that becomes part of the Development Plan is the one best able to maximise the environmental, social and economic benefits for the system.

INTENT

PROTOCOL

METRICS

To incorporate sustainability principles into the selection and identification of the design in order to develop the most sustainable project for the community.

The degree to which the selection/identification of the project includes assessments of sustainability performance and is part of a broader sustainable development plan.

APPLICABILITY Applicable

	, piloable			
	LE	VELS OF ACHIEVEN	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Sustainability Indicators	Alternative Analysis	Sustainability Assessment	Sustainable Planning	More Sustainable Communities
Α	A + B	A + B + C	A + B + C + D	A + B + C + D + E
POINTS: 4	POINTS: 6	POINTS: 9	POINTS: 12	POINTS: 16

(A) Sustainability indicators or outcomes are considered in project selection/identification and planning.

(B) Sustainable performance is included in alternative analyses during project identification. Alternatives include the sustainability of a "no-build" option.

(C) During project identification, the project's potential impact to broader external systems is assessed, such as growth patterns, congestion, energy and water demand/production, and how these impact the overall long-term

sustainability of the community or region.

(D) The project is part of a comprehensive sustainable development plan at the level of the infrastructure system, municipality/community, or region.

The project demonstrates a direct connection and contribution to achieving specific sustainable development goals identified in the plan.







EVIDENCE AND DOCUMENTATION REQUIRED

A. Was sustainability considered during project selection/identification?

- Analysis of the constraints during the planning stage.
- The criteria for identifying alternatives are founded on principles of environmental, social, territorial and economic sustainability, starting in the planning phase with the application of the ERPA and siting criteria, both during the public consultation phase with the stakeholders and then during the environmental impact assessment phase.
 - 1. Ministry forum reports, ministry Memoranda of Understanding and Env. Assessment
 - 2. Memorandum of Understanding with the regions on sharing the siting methodology (ERPA criteria)
 - 3. Environmental Impact Study, project reference framework describing the selection of alternatives using ERPA/siting criteria
 - 4. Any operations forms on the reference Environmental Report
- B. Were alternative analyses conducted on sustainability performance during project identification?
 - Strategic alternatives during planning
 - In the SEA, the ER compares the corridor alternatives analysed.
 - 1. Technical sheet for the operation in the Environmental Report
 - In the EIA, the EIS compares the layout alternatives.
 - 2. The EIS shows the alternatives analysed.
 - Comparison between alternative technical solutions to improve acceptability

C. Was an assessment conducted of the project's impacts to broader long-term community or regional sustainability?

- Reasons for the operation, main benefits of the planned work
 1. DP form
- The work is subject to monitoring both in the SEA with the Monitoring Report, and in the EIA with the Environmental Monitoring Plan.
 - 2. Monitoring Report (MR)
 - 3. Environmental Monitoring Plan (EMP)

D. Is the project part of a comprehensive sustainable development plan?

- The project starts with the Development Plan, which is subject to a Strategic Environmental Assessment and approved by the relevant ministries. The DP follows sustainability criteria for placing the work in the territory and is shared with ministries, regions, environmental associations and other stakeholders.
 - 1. Development Plan including sustainability indicators
 - 2. Environmental Report
- E. Does the project address an inherently unsustainable condition within the community or region?
 - Streamlining operations
 - Renovation of the existing network (new siting, use of new, more sustainable technology, etc.)





LD 2.3 PLAN FOR LONG-TERM MONITORING AND MAINTENANCE

This credit aims to develop the project team's commitment to forecasting, planning and scheduling the monitoring activities and the maintenance of work or a plant in order to maintain functionality, quality characteristics, efficiency and economic value over time.

This includes implementing a strategy aimed at using innovative materials and designs and information technology aimed at increasing durability over time, limiting the need for infrastructure maintenance and adopting a 'standard' monitoring and maintenance process.

In its most tangible definition, a strategic plan is nothing but a schedule of actions to be taken according to a certain scheme so as to attain one or more desired objectives. Planning means to establish plans following certain rules or constraints and considering possible basic problems.

The main objective of a monitoring and maintenance plan is maintaining the efficiency of the work and the systems.

Indeed, maintenance is no longer simply the conservation, protection and repairing of individual pieces of equipment, but keeping the work and the systems fully efficient and reliable in all manageable characteristics, as originally laid out in the design.

From this perspective, the goals in the 'Monitoring and Maintenance Plan' must be the following:

- Fine-tuning the work and system assessment schedule, any monitoring of some components, and regular maintenance operations;
- Types of operations to be performed in relation to possible breakdowns in the work and systems involved

With respect to some work subject to Environmental Impact Assessment, the authorisation directives include the Environmental Monitoring Plan for monitoring various environmental matrices potentially impacted during all stages of the work from pre-construction to final operation.

INTENT	To put in place plans, processes and personnel sufficient to ensure that the plan incorporates long-term sustainable protection, mitigation and improvement measures.
PROTOCOL METRICS	Clear long-term monitoring and maintenance plans, implementation objectives and use of resources to fund the activities.
APPLICABILITY	Applicable





LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available
Reduced maintenance	Maintenance plan	Protection of resources	Constant improvement	
А	A + B + C	A + B + C + D	A + B + C + D + E	
POINTS: 2	POINTS: 5	POINTS: 8	POINTS: 12	
(A) The project includes str longer-lasting materials, or affected communities.	ategies to reduce mainten ease of access for mainte	ance impacts. This may inconnection in the impact of the i	clude better design, durable nal disruption to users and	
	(B) A monitoring and ma performance targets and milestones. It addresses the project's sustainabili	aintenance plan is develope d an implementation schedu s any unique challenges of i ty features.	ed with specific sustainability ule with clear goals and monitoring or maintaining	
	(C) The project team me to explain and discuss th	eets with operations, monitone operations plan.	pring, and maintenance staff	
		(D) Owner identifies the k the plan, funding sources cover associated costs.	ey personnel to carry out , and other resources to	
		This includes training for and maintenance staff, an future training.	the operation, monitoring, nd provisions for necessary	
			(E) A schedule is developed for future re- evaluation and modification of the maintenance plan based on monitored data.	

EVIDENCE AND DOCUMENTATION REQUIRED
A. Has the project team considered how to reduce ongoing operational impacts?
 At Terna, the designs for infrastructural work are drafting using the Plant Design and Construction Process (MPRI) and a documentation system (manuals, operating procedures, operating instructions, guidelines) that includes among the objectives management policies aimed at creating strong understanding and coordination with development processes and technical and maintenance staffing so that the design ensures the plants have maximum functioning efficiency, an appropriate useful life and the maximum safety and environmental sustainability standards in a framework of containing overall costs. MPRI Plant Design and Construction Process
 Basic power plant design criteria Guidelines for designing civil station work Station building construction technology - selection criteria Unified station design Optimised unified station design Unified design for lines
Depending on the design in question, during the design phase the Technical Work Plan (TWP) includes studying how to reduce the negative impacts of operations and the maintenance in progress, in terms of ease of access to the plants and minimal interruptions to the service for the users and communities involved.
B. Is there a clear and comprehensive plan in place for long-term monitoring and maintenance of the completed project?





- 1. Asset Management Plan (AMP): specifies the activities, resources and timeline required for an individual asset or group of assets, in order to meet the asset management goals established by Terna.
- 2. Systems Maintenance Plan (SMP): the summary, both technical and financial, of all maintenance and replacement operations for investment for renovation/development to take place on the plants owned by Terna S.p.A. and its subsidiaries. The SPM contains a summary of all operations planned and then carried out by the TOAs (Transmission Operational Areas), regarding the monitoring and maintenance on the HV lines and HV stations.
- 3. Operating instructions related to electrical station monitoring
- 4. Operating instructions related to electrical line monitoring
- 5. Operating instructions related to electrical station maintenance
- 6. Operating instructions related to electrical line maintenance
- 7. Monitoring Business Intelligence (MBI) that collects the history of the testing, breakdowns and indications of the state of 'health' of the individual components based on mathematical models, which thus allows the identification of critical issues and consequently the planning of replacement/maintenance/review of specific components or part of the asset.
- 8. Other useful tools relevant to the content of Point 7 to support the AMP.
- 9. Environmental monitoring plan (when included)

C. To what extent has the monitoring and maintenance plan been communicated with operations and maintenance staff?

- The plan is communicated to all personnel, as it is published in Terna's documentation system; specifically on a schedule established in advance by the operating instructions, the time frame for operations should be established and in the event of an unavailability plan the times are changed based on the latter. The communications plans also make use of regular meetings and written communications.
 - 1. Reports
 - 2. Emails
- D. To what extent have sufficient resources been allocated for long-term monitoring and maintenance of the completed project and appropriate training been conducted?
 - 1. The Systems Maintenance Plan, which is written each year by the TOAs, highlights the OPEX costs and the necessary/anticipated use of resources (personnel).
 - 2. Along with the renovation plan and Plant Maintenance Plan, the costs of maintenance and renovation of existing plants should be planned.
 - 3. There are structures in Terna that take care of planning and managing recurring training courses and ad hoc training for specific activities (for example, work under voltage).
- E. Is there a plan in place to re-evaluate and modify the maintenance plan based on monitored data?
 - 1. Operating instructions related to the Annual Maintenance Plan (AMP). The Systems Maintenance Plan (SMP) should be reworked every year; in particular, it contributes, on the basis of regular analyses, to a bottom-up process, the identification of planning needs in terms of component replacement or review campaigns.





LD 2.4 PLAN FOR END-OF-LIFE

The NTN and related transformation/switching systems are planned to last over time. The designs are not free-standing works but interconnected with the others to be able to guarantee the electrical service.

The assessment of social and economic impacts related to the disposal and streamlining of lines for network efficiency is done under the Development Plan. In general, when planning for new needs, Terna evaluates the possibility of streamlining the existing network.

INTENT	To ensure that the project team is informed on the reasoning on the complete impacts and costs of the end of the project's life cycle.
PROTOCOL METRICS	The degree to which the project team analyses and communicates with the stakeholders the impacts, costs and benefits (value) of end-of-life.
APPLICABILITY	Applicable

	LE	VELS OF ACHIEVEN	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available
End-of-life plan	Improvements	Pushing the limit	Beyond the limit	
A + B	A + B + C	A + B + C + D	A + B + C + D + E	
POINTS: 2	POINTS: 5	POINTS: 8	POINTS: 14	
 (A) The project team develops an end-of-life plan, including the necessary replacement/refurbishment of major components over the project life and its ultimate decommissioning, deconstruction, or replacement. Consideration is given to recyclability of materials and components and/or the ease of deconstruction or replacement (e.g., components or materials that can be easily separated for recycling or reuse). The plan is included in operations and maintenance documents. (B) Relevant future demands, level of achievements, or other requirements on the infrastructure system are estimated over the anticipated project life. The project extends useful life by providing opportunities for reconfiguration, future expansion, flexibility, or to beneficially repurpose the project after end-of-life. 				
	(C) End-of-life impacts a economic conditions of the second secon	are assessed, including the the site and surrounding co	environmental, social, and mmunity.	
		(D) The project includes a costs and salvage value a deconstruction, decommined	an analysis of end-of-life associated with ssioning, or replacement.	
			(E) The project team demonstrates proactive stakeholder engagement in end-of-life planning and can demonstrate that the community understands the full life-cycle costs and benefits of the project.	





EVIDENCE AND DOCUMENTATION REQUIRED

A. Has the project team developed an end-of-life plan?

- 1. Operating Instructions related to HV Electrical Station Maintenance corrective maintenance and breakdown maintenance
- Annex to the Integrated Management System manual related to Environmental Analysis the life cycle and environmental impact (LCA – Life Cycle Assessment) The LCA method applied to electrical network components or systems allows the assessment, along the entire life cycle (Construction, Operations, Disposal and End-of-Life) of its true ecological footprint.
- 3. Life cycle assessment study of one km of cable line with a voltage level of 380 kV
- 4. Life cycle assessment study of one km of overhead line with a voltage level of 380 kV
- 5. Operating life cycle assessment study of Terna HVDC work
- 6. Standard disposal plan
- B. Has the project team evaluated opportunities to extend the project's useful life or beneficially repurpose the project after end-of-life?
 - 1. Maintenance Plan
 - 2. Strategies to monitor and extend useful life (e.g. insulator replacement, support re-use in line development operations, etc.)
- C. Has the project team assessed potential social, environmental, and economic end-of-life impacts?
 - 1. Evidence of the LCA study (as per Criterion A)
 - 2. Any ad hoc instructions and project documentation
 - 3. Power line easement agreement with agreements on the restoration of areas and removal of constraints, with the subject that returns to the full ownership of the fund
 - 4. EIA
- D. Has the project team evaluated the costs and salvage value of the project's deconstruction, decommissioning, or replacement?
 - 1. Documentation containing the analysis of the expected costs and value of the recovery

E. Has the project team proactively engaged stakeholders in end-of-life planning?

- 1. Memoranda of Understanding on streamlining work
- 2. Environmental Impact Study and EIA decree
- 3. Any instructions from agencies (for example, executive disposal plan)





LD 3.1 STIMULATE ECONOMIC PROSPERITY AND DEVELOPMENT

The creation of an electrical infrastructure has short- and long-term effects.

In the short term, the effects are caused by construction activities needed to create the infrastructure. These activities are a positive shock for the economy, as spending for construction and the purchase of capital assets generates a higher level of production and consequently more income for the companies and workers directly involved in the performance of the work and the provision of supplies for the project.

Over the long term, the direct and indirect effects are generated as a consequence of the increase in efficiency in the electrical system generated by infrastructure investment. This is a positive shock for the economy as it increases the productivity of the economic system, reducing the costs of production and generating greater profit margins for economic sectors and more revenue for institutions.

The economic sectors directly benefitting from the increases in productivity will use the larger income/profit margins to purchase productive inputs from other sectors and to pay for inputs in the form of revenue (for entrepreneurs) and salaries (for workers). In turn, families (of the entrepreneurs and workers) and other institutions (government or businesses) benefitting from these increased earnings will increase their consumption and savings.

This virtuous cycle will result in a possible increase in spending for the central and local government (due to the larger tax yields), investments (due to the greater saving generated and the larger income expected) and production (due to increased consumption). As this cycle cascades, it may repeat multiple times as a consequence of the increased level of production for businesses and income for the workers involved even indirectly in the project (the multiplier effect).

INTENT	To support economic prosperity and sustainable development, including growth in employment, strengthening of capacity, productivity, business attractiveness and liveability.
PROTOCOL METRICS	The extent of job creation, increase in work capacity, access and quality and/or improvement in socio-economic conditions.
APPLICABILITY	Applicable




	LE	VELS OF ACHIEVEN	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available
New Capacity	Improved Choices	Business Attraction	Development Rebirth	
A + B	A + B + C	A + B + C + D	A + B + C + D + E	
POINTS: 3	POINTS: 6	POINTS: 12	POINTS: 20	
(A) Jobs are created durin number, type, and duratio	ng design, construction, a n of jobs created as a re	and/or operation. The proj sult of the project.	ect team determines the	
(B) The project adds new the public.	operating capacity. Capa	acity additions can apply t	o business, industry, or	
	(C) The project provide choices, and/or increas The project team can c competitiveness, efficie or cultural and recreation	es additional access, incre ses the quality of services lemonstrate that the addit ency, or improved product onal facilities.	eases the number of ion of choices will drive ivity for business, industry,	
		(D) The project contribut community's attractivent industries, or their workf overall business or com people want to live and/	tes to the host ess for businesses, force by improving the munity environment (i.e., or work in the community).	
			(E) The project will stimulate local, regional, or national economic development. The economic projections take into account changing social, economic, and/or environmental conditions.	





- A. Does the project create a significant number of new jobs during its design, construction, and operation?
 - 1. Estimate of jobs based on investment
 - 2. Number of businesses used
 - 3. Estimate of worker-days (e.g. from SCP)
- B. Does the project provide new operating capacity for business, industry, or the public?
 - 1. Development Plan: System Utility Index (SUI)
- C. Does the project provide additional access, increase the number of choices, and/or increase the quality of infrastructure services for business, industry, or the public?
 - 1. Development Plan Connections (for producers or large consumers)
 - 2. Development Plan Need for development and specific project objectives
- D. Does the project improve community attractiveness for business, industry, or the public by generally improving the socioeconomic conditions of the community?
 - 1. Development Plan SUI.
- E. Will the project stimulate economic prosperity and further economic development?
 - 1. Development Plan SUI.
 - 2. Specific objectives for each operation





LD 3.2 DEVELOP LOCAL SKILLS AND CAPABILITIES

This credit is intended to enhance the process of development of knowledge, abilities and skills in the local work force during the planning, construction and plant operation phases.

For Terna, training is a corporate value, a preferential tool for the development of human capital consistent with its mission, strategies and corporate objectives. In other words, it is a joint individual/company investment aimed at creating value for people – through growth and increased flexibility in skills (employability) – and to create value for the company – through their more motivated and qualified contribution.

The 'Network Experiences' campus, through the availability of the most experienced resources at functioning as designers/instructors in the Faculty Campus, will ensure the maintenance, transfer and sharing of Terna's specialised 'proprietary' know-how, while at the same time it eases development of the sense of belonging and integration (corporate identity) within the Group.

Collaborations with universities, business schools and, in general, excellent external training centres, open to the necessary cross-fertilisation of corporate knowledge with the external world.

INTENT

PROTOCOL METRICS To expand the knowledge, abilities and skills of the local work force to improve their chances for growth and development.

Current and future training programs aimed at economically depressed communities or places where unemployment is common, aimed at filling in gaps in skills.

APPLICABILITY Applicable





LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Gaining Skills	Growing Capacity	Building Communities	Long-Term Opportunities	Community Revitalization
Α	A + B	A + B	A + B + C	A + B + C + D
POINTS: 2	POINTS: 4	POINTS: 8	POINTS: 12	POINTS: 16

(A) The project includes training programs for local skill development. This may include designers, contractors, subcontractors, or operators.

(B) Beyond general skill development, the project team identifies specific skill or capability gaps in the local workforce. Training programs target these gaps to improve local capacity. Skills are transferable beyond the end of the project.	 (B) The project team works with, or is informed by, community and local/state workforce development agencies to assess local employment and educational needs. Training programs target these gaps to improve local capacity. Skills are transferable beyond the end of the project. Skills developed are likely to provide the local workforce, agencies, and/or companies with a competitive advantage in the future.
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(C) Education, skill development programs and/or opportunities will continue after project delivery. This may include community education and awareness training. Programs may be at the organizational level but must be relevant to the project.

(D) Training and skill development programs specifically target economically depressed, underemployed, or disadvantaged communities.





A. Will the project include training programs for local skill development?

- 1. The Terna Group's training guidelines
- 2. Operating Instructions related to planning, management and review of training
- 3. Training plan and offerings, with training programs for:
 - Planning
 - Operations & Maintenance
- 4. Work site training

B. Has the project team identified skill or capability gaps in the local workforce and targeted training programs to address them?

- 1. Guidelines related to Terna Group training
- 2. Operating instructions related to collaborations with universities, business schools, excellent training centres and schools

C. Will training, education, or skill development programs continue after project delivery?

- 1. Continuing and cross training programs
- 2. Collaborations with schools and universities
- 3. Any ad hoc training projects
- D. Will training and skill development programs specifically target economically depressed, underemployed, or disadvantaged communities?
 - 1. Any ad hoc training projects (e.g. combined school/work programs in depressed areas)





LD 3.3 CONDUCT A LIFE-CYCLE ECONOMIC EVALUATION

This credit assesses the use of economic analyses that can provide a better evaluation of the value of a project and, in the final analysis, encourage greater sustainability.

The Life-Cycle Cost Analysis (LCCA) is one of many evaluation techniques commonly used to compare and assess the financial feasibility of various design alternatives during a theoretical life-cycle of the service. LCCA offers a more informed perspective on the total financial costs of the project and allows a more direct comparison between competing projects.

In recent years, Terna has initiated Life-Cycle Costing studies involving two different types of underground 380 kV cable.

In parallel, Terna applies to the main planned electrical infrastructure a technical/economic assessment using the CBA (cost/benefit analysis) methodology based on a comparison of the actualised costs and actualised benefits and represented by the SUI (System Utility Index) and NPV (Net Present Value) indicators.

INTENT	To use economic analyses to identify the full economic implications and the project's broader social and environmental benefits.
PROTOCOL METRICS	The completeness of the economic analyses used to determine the net impacts of the project and their use in evaluating the alternatives to inform the decision-making process.
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Life-Cycle Cost Analysis	Life-Cycle Cost Alternatives Analysis	Benefit Mapping	Sustainability Cost Benefit Analysis	Sustainability CBA Alternatives Analysis
Α	A + B	A + B + C	A + C + D	A + C + D + E
POINTS: 5	POINTS: 7	POINTS: 10	POINTS: 12	POINTS: 14

(A) A life-cycle cost analysis (LCCA) is conducted on the whole project to identify the total economic impacts of the project.

(B) LCCA is used to compare and assess alternatives for at least one major design component.

(C) The project team maps the social, environmental, and financial costs and benefits of the project. Costs and benefits must be quantified but not necessarily monetized.

(D) The LCCA in criterion A is expanded into a comprehensive sustainability cost benefit analysis based on monetizing the social, environmental, and financial costs and benefits identified in criterion C.

(E) The sustainability cost benefit analysis is used to compare and assess alternatives for at least one major design component. The selected alternative produces a net positive present value including social and environmental benefits.





	EVIDENCE AND DOCUMENTATION REQUIRED
Α.	Has a life-cycle cost analysis been conducted to identify the financial impacts of the whole project?
	1. LCCA related to the project, if present
В.	Have life-cycle cost analyses been used to compare alternatives for at least one major project component?
	1. Comparison in the LCCA, if performed, between various design alternatives (e.g. layout, underground cable in place of overhead line, etc.)
C.	Has the project team mapped the social, environmental, and financial costs and benefits of the project?
	 For the significant operations in the Development Plan, for purposes of application of the CBA, the evaluation of the benefits/costs is done as outlined in the annex to the DP (methodological document for the application of cost/benefit analyses to the Development Plan).
	2. The specific benefits and costs of the project are evaluated in the related Development Plan form.
D.	Has a cost benefit analysis been conducted to identify the financial, social, and environmental impacts of the whole project?
	 The main operations in the Development Plan with investment greater than 15 million euros are subjected to cost/benefit analyses to evaluate their effectiveness through indicators of both an electrical and environmental nature. The CBA is performed for the entire operation and pat for an individual wark.
	 The CBA quantification methodology is described in the methodology document and is represented by the IUS (System Utility Index) and NPV (Net Present Value) indicators, developed in the operation sheet in the Development Plan.
E.	Have cost benefit analyses, including financial, environmental, and social benefits, been used
	 During the planning stage of new projects, analyses and studies should be done of possible implementation solutions, including analysing environmental/social aspects. Adding a new project to the Development Plan is therefore the final result of the planning process and thus the best solution for the cost/benefit analysis that demonstrates its profitability and utility for the system.
	2. Further alternative assessments can be done following the authorisation/consultation process.
L	





LD 0.0 INNOVATE OR EXCEED CREDIT REQUIREMENTS

This credit allows an evaluation of innovative elements characteristic of the project that go beyond expectations in other credits in the category.

The scores related to this credit are not included in the total applicable points and therefore qualify as bonus scores.

INTENT

To reward exceptional performance beyond the expectations of the system and the application of innovative methods that promote state-of-the-art sustainable infrastructure.

METRICS

The project's sustainability performance qualifies as innovation or exceptional performance or is not otherwise recognised in the existing credits.

LEVELS OF ACHIEVEMENT
INNOVATION
Innovate or Exceed Credit Requirement
A or B or C
POINTS: MAX 10
(A) Implement innovative methods, technologies, or processes that are novel either in their use, application, or within the local regulatory or cultural context.
OR
(B) Implement measures that exceed the highest existing requirements within one or more Leadership credits. OR

(C) Address additional aspects of sustainability not currently recognized in Envision

EVIDENCE AND DOCUMENTATION REQUIRED

- A. To what extent does the project implement innovative methods, technologies, or processes that overcome significant problems, barriers or limitations, or create scalable and transferable solutions?
 - 1. Documentation highlighting the application of innovative technical methods or solutions.
- B. To what extent does the project exceed the highest levels of achievement for a given credit?
 - 1. Documentation that highlights the fulfilment of the requisites required for the maximum achievement level of a credit in the *Leadership* category
- C. To what extent does the project address a sustainability aspect that is not currently addressed by the Envision system?
 - 1. Documentation showing how the project addresses a sustainability issue pertaining to the *Leadership* category, not currently evaluated by other credits in the category.





Resource Allocation

RA 1.1 SUPPORT SUSTAINABLE PROCUREMENT PRACTICES

This credit is intended to develop the use of materials or equipment from producers and/or suppliers who use sustainable supply practices. Using specifications, design technique conditions and documentation related to the specific project implemented (upon completion of the construction phase), it is necessary to determine the percentage of supplies meeting this credit's requirements.

In the event that the *Design* + *Post Construction* (*Path A*) certification process is chosen, this credit will be 'pending', because all the information required by this credit may not be present when the first Design Review is submitted. These elements must then be produced, as documentary evidence, at the end of the Post-Construction Review.

As part of the preparation of contracts, not being able to force the contractor to use suppliers or materials sourced from specific producers, in order to pursue the credit, it is possible to provide evidence in the conditions, specifications or other appropriate documentation of the indications and/or policies aimed at choosing materials according to sustainability practices, specifying the percentage to be reached.

The materials to be considered will be established from time to time based on the specific project.

In the specifications and technical project conditions, it is possible to assess the addition of Minimum Environmental Criteria (MEC).

In the following construction phase, the documentation related to the satisfaction of the credit will consider all the supplies purchased based on the evidence produced by general contractors/businesses that executed the contract, for the exact definition of the percentage related to the selected level of achievement.

INTENT	To develop sustainable sourcing practices and programs to purchase materials and equipment from producers and suppliers that implement sustainable practices.
METRICS	Extension of the sustainable sourcing programs and percentage of materials sourced from producers and/or suppliers that implement sustainable practices.
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available
5% Sustainable	15% Sustainable	25% Sustainable	50% Sustainable	
Procurement	Procurement	Procurement	Procurement	
A + B	A + B	A + B	A + B	
POINTS: 3	POINTS: 6	POINTS: 9	POINTS: 12	
(A) A written sustainable procurement policy/program is in place. The program includes a well-defined process for selecting suppliers and/or manufacturers of materials, supplies, and equipment, including selection criteria focused on environmental practices and social responsibility.				
(B) At least 5% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	(B) At least 15% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	(B) At least 25% of all project materials, supplies, and equipme meet the sustainable procurement policy/program requirements.	(B) At least 50% of all project materials, supplies, and equipment meet the sustainable procurement policy/program requirements.	





EVIDENCE AND DOCUMENTATION REQUIRED A. Has the project team implemented a sustainable procurement policy or program? 1. Terna's supplier selection procedure indicating the types of products to be sourced in general for all types of projects performed, and containing the selection criteria (examples of criteria for choosing a supplier are ISO 14001 and/or EMAS certification, or the type III ISO 14025 and ISO 14044 environmental product statement). 2. Minimum environmental criteria (MECs) 3. Environmental specifications (CAPAMB) B. To what extent do materials, supplies, equipment, manufacturers, and suppliers meet sustainable procurement policy/program requirements? 1. Specific technique (related to the individual project) for assigning a task or the provision of a material, in which the minimum environmental sustainability criteria required are highlighted along with any premium points for the awarding of the contract (examples of criteria for choosing a supplier are ISO 14001 and/or EMAS certification, or the type III ISO 14025 and ISO 14044 environmental product statement). 2. Minimum environmental criteria (MECs) 3. Environmental specifications (CAPAMB) 4. List of all products sourced following the completion of the work 5. Table showing the producer, the material provided and the related environmental requirements, and the related calculation of the percentage of materials meeting the requirement out of the total materials sourced (in weight, volume or cost), following the completion of the work





RA 1.2 USE RECYCLED MATERIALS

This criterion intends to enhance the choices of the project team aimed at reducing the use of virgin natural materials and avoiding the shipment of potentially usable materials to landfills, through their reuse within the project. In addition, the procurement of materials from abroad with recycled content is quantified.

The structures or materials to be considered will be defined from time to time based on the specific project.

In the event that the *Design* + *Post Construction* (*Path A*) certification course is chosen, this credit will be 'pending', because all the information required by the credit may not be present at the time of its submission for the first Design Review. These elements must then be produced, as documentary evidence, at the end of the Post-Construction Review.

Related only to the design phase, given the impossibility in the context of preparing for a public tender of forcing the contractor to use materials sourced from specific producers in order to pursue this credit, it is possible to provide evidence in the tender conditions of all specifications and/or policies aimed at the use of recycled/re-used material.

Following the completion of the work, the specific documentation related to this credit will be produced to satisfy the percentage related to the achievement level pursued.

Electrical equipment (e.g. cables, transformers, switches) can be omitted from the calculation. Also, plants, excavated soil and rocks, and water are excluded from the credit.

INTENT	To reduce the use of virgin natural resources and avoid the disposal of useful materials, through their reuse, including structures, and the use of materials with recycled content.
METRICS	Percentage of project materials that are re-used or recycled. (Plants, soil, rocks and water are not included in this credit.)
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available
At Least 5% From	At Least 15% From	At Least 25% From	At Least 50% From	
Recycled	Recycled	Recycled	Recycled	
Α	Α	Α	Α	
POINTS: 4	POINTS: 6	POINTS: 9	POINTS: 16	
(A) At least 5% (by weight, volume, or cost) of recycled materials including materials with recycled content and/or reused existing structures or materials	(A) At least 15% (by weight, volume, or cost) of recycled materials including materials with recycled content and/or reused existing structures or materials.	(A) At least 25% (by weight, volume, or cost) of recycled materials including materials with recycled content and/or reused existing structures or materials.	(A) At least 50% (by weight, volume, or cost) of recycled materials including materials with recycled content and/or reused existing structures or materials.	





A. To what extent has the project team used recycled materials, including materials with recycled content and/or reused existing structures or materials?

- 1. Technical project specifications (or other similar documentation) indicating the recycled/reused materials
- 2. Inventory with related amounts of the totality of the materials used in the project (in weight, volume or cost)
- 3. Inventory with related amounts of materials with recycled content or existing materials or structures that were re-used in the project The inventory must include the name of the product, the name of the manufacturer, the weight, the volume or the cost of the material and the percentage of recycled (either pre-consumer or post-consumer) content.
- 4. Calculation of the percentage of re-used or recycled materials (in weight, volume or cost) based on the project specifications, in order to establish the potential level of achievement during the design phase
- 5. Documentary evidence related to materials actually used in the work and related percentage calculation supporting the selected level of achievement (in weight, volume or cost), following the completion of the work Also consider materials re-used on site, if they are present.





RA 1.3 REDUCE OPERATIONAL WASTE

The operations phase of the electricity transmission infrastructure does not in itself generate waste. The waste produced during the operations phase are limited to the maintenance and cleaning activities at the plants and can be considered marginal in quantitative terms, compared to the scale of the project.

Waste from maintenance activities are handled according to operating procedures/instructions and in compliance with applicable regulations, favouring when possible shipment to recycling/recovery rather than disposal. In particular, the 'Waste Management in Companies in the Terna Group' plan defines the organisation, roles and performance for proper waste handling in compliance with legal obligations and the environmental management system.

According to the information above, it is possible to define this credit as not applicable while preparing suitable supporting documentation for certification purposes.

INTENT	To reduce operating waste and to divert the waste produced from disposal to recycling or re-use.
METRICS	Percentage of operating waste or by-products diverted to re-use or recycling rather than disposal.
APPLICABILITY	Not applicable

LEVELS OF ACHIEVEMENT					
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available	
Recycle/Reuse At Least	Recycle/Reuse At	Recycle/Reuse At			
25%	Least 50%	Least 75%	Recycle/Reuse 95%		
A + B	A + B	A + B	A + B		
POINTS: 4	POINTS: 7	POINTS: 10	POINTS: 14		
(A) Develop an operational diverted from disposal and	waste management plan whether the materials will	that, at a minimum, identified be sorted on site or commination of the sorted on site or commination of the source	es the materials to be ngled.		
(B) The project team identifies waste streams or byproducts that will occur as a result of the operation of the project. The project is planned or designed to divert at least 25% of operational waste. Diversion may be a combination of waste reduction measures and/or sourcing waste to other facilities for recycling or reuse.	(B) The project team identifies waste streams or byproducts that will occur as a result of the operation of the project. The project is planned or designed to divert at least 50% of operational waste. Diversion may be a combination of waste reduction measures and/or sourcing waste to other facilities for recycling or reuse.	 (B) The project team identifies waste streams or byproducts that will occur as a result of the operation of the project. The project is planned or designed to divert at least 75% of operational waste. Diversion may be a combination of waste reduction measures and/or sourcing waste to other facilities for recycling or reuse. 	(B) The project team identifies waste streams or byproducts that will occur as a result of the operation of the project. The project is planned or designed to divert at least 95% of operational waste. Diversion may be a combination of waste reduction measures and/or sourcing waste to other facilities for recycling or reuse.		





A. Has the project team developed a waste management plan to decrease project waste and divert waste from landfills during operation?

Not Applicable

B. To what extent has the project team reduced waste or diverted waste from landfills?

Not Applicable

DOCUMENTATION SUPPORTING NON APPLICABILITY

- 1. Waste Management Plan in the companies in the Terna Group
- 2. Documentation of the specific project showing the absence or negligibility of the waste produced during operations, compared to the scale of the project.

Note: hazardous waste is omitted from the calculation of the total amounts of waste produced indicated above.





RA 1.4 REDUCE CONSTRUCTION WASTE

With a view to sustainable management of waste materials, this credit intends to enhance the reduction of final disposal in landfills of all waste produced during the construction of the infrastructure, favouring re-use or recovery at authorised plants.

The waste produced during construction is handled in compliance with corporate specifications.

In the event that the *Design* + *Post Construction* (*Path A*) certification process is chosen, this credit will be 'pending', because all the information required by this credit may not be present when the first Design Review is submitted. These elements must then be produced, as documentary evidence, at the end of the Post-Construction Review.

INTENT	To send waste produced during construction for recycling and reuse rather than disposal
METRICS	Percentage of waste sent for reuse or recycling rather than to disposal.
APPLICABILITY	Applicable.

LEVELS OF ACHIEVEMENT					
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available	
Recycle/Reuse 25%	Recycle/Reuse 50%	Recycle/Reuse 75%	Recycle/Reuse 95%		
A + B	A + B	A + B	A + B		
POINTS: 4	POINTS: 7	POINTS: 10	POINTS: 16		
(A) Implement a construction diverted from disposal and	on waste management pla whether the materials will	n that, at a minimum, ident be sorted on site or commi	ifies the materials to be ngled.		
(B) The project team sets a target goal for construction waste diversion. During construction at least 25% of waste materials are recycled, reused, and/or salvaged. Diversion may be a combination of waste- reduction measures and sourcing waste to other facilities for recycling or reuse.	(B) The project team sets a target goal for construction waste diversion. During construction at least 50% of waste materials are recycled, reused, and/or salvaged. Diversion may be a combination of waste- reduction measures and sourcing waste to other facilities for recycling or reuse.	 (B) The project team sets a target goal for construction waste diversion. During construction at least 75% of waste materials are recycled, reused, and/or salvaged. Diversion may be a combination of waste- reduction measures and sourcing waste to other facilities for recycling or reuse. 	(B) The project team sets a target goal for construction waste diversion. During construction at least 95% of waste materials are recycled, reused, and/or salvaged. Diversion may be a combination of waste- reduction measures and sourcing waste to other facilities for recycling or reuse.		





- A. Has the project team developed a comprehensive waste management plan to decrease project waste and divert waste from landfills during construction?
 - 1. Guidelines on waste management in the companies in the TERNA Group
 - 2. Operating instructions related to monitoring work site activities and rules
 - 3. Operating instructions related to management of environmental aspects at Terna work sites
 - 4. Operating instructions related to waste management in companies in the Terna Group
 - 5. Environmental work site specifications
 - 6. Work site environmental monitoring plan
 - 7. Construction site plan
- B. To what extent has construction waste been diverted from landfills?
 - 1. Documentation declaring the types of waste generated during construction with indication of the destination sites
 - 2. Calculation of the percentage of waste recycled/recovered out of the total waste produced, based on the chosen level of achievement
 - 3. Construction completion report declaring the percentage calculation related to the established level of achievement

Note: hazardous waste is omitted from the calculation of the total amount of waste produced mentioned above.





RA 1.5 BALANCE EARTHWORK ON SITE

This credit sets the objective of limiting the project's environmental impacts connected to the management of excavated materials (earth and infill) from construction work.

This objective can be achieved by maximising the reuse of excavated materials, both inside and outside the production site. In the first case, one could even expect any treatments found in normal industrial practice needed to suit the features of the soil and excavated rocks to the project, while in the second case, one must try to contain as much as possible the distance of the re-use site from the work site.

In the event that the *Design* + *Post Construction* (*Path A*) certification process is chosen, this credit will be 'pending', because all the information required by this credit may not be present when the first Design Review is submitted. These elements must then be produced, as documentary evidence, at the end of the Post-Construction Review.

INTENT	To minimise the movement of soil and other excavated materials beyond the work site to reduce transport and environmental impacts.
METRICS	Percentage of excavated material re-used on site or nearby.
APPLICABILITY	Applicable.

LEVELS OF ACHIEVEMENT					
IMPROVED	Not Available				
Reuse At Least 30% On	Reuse At Least 50%	Reuse At Least 80%	Fully Delemand Site		
Site	On Site	On Site	Fully Balanced Site		
Α	Α	Α	Α		
POINTS: 2	POINTS: 4	POINTS: 6	POINTS: 8		
 (A) Excavated material moved off site and/or fill brought onto the site does not exceed 70% of total site soil handling. OR 100% of fill and excavated materials are sourced or reused within 25 mi/40 km of the site. 	 (A) Excavated material moved off site and/or fill brought onto the site does not exceed 50% of total site soil handling. OR 100% of fill and excavated materials are sourced or reused within 10 mi/16 km of the site. 	 (A) Excavated material moved off site and/or fill brought onto the site does not exceed 20% of total site soil handling. OR 100% of fill and excavated materials are sourced or reused within 5 mi/8 km of the site. 	(A) The site is fully balanced. No earthwork is removed from the site and no earthwork is imported.		

EVIDENCE AND DOCUMENTATION REQUIRED

A. To what extent has the project team designed the project to balance cut and fill to reduce the excavated material taken off site?

- 1. Management plan and/or usage plan, containing:
 - Balance (as a percentage) of excavated materials, indicating the amounts re-used on site and/or re-used at other sites and/or transferred to a suitable recovery or waste facility and/or supplied externally to the project;
 - For the materials that will be transported away from the production site, indication of the target sites and their distances from the production location;
 - Percentage calculation related to the established level of achievement, as a function of the chosen procedure.

Note: the excavated materials classified as waste are not included in the calculation of the total amounts of waste products referred to above.





RA 2.1 REDUCE OPERATIONAL ENERGY CONSUMPTION

This credit aims to reduce the use of energy in the infrastructure operation phase, reducing demand during the entire useful life of the project.

It should be noted that the elements comprising the electricity transmission infrastructure are:

- electrical stations
- transmission lines

It being understood that new TERNA projects are also intended to achieve a general efficiency increase for the network, energy consumption is ascribable only to the operation of the electrical stations.

Therefore, this credit will be applicable to projects that include the presence of electrical stations and streamlining projects that include electrical stations. It is not applicable to projects related only to electrical lines.

Energy efficiency is an essential subject for Terna and it falls under the company's broadest commitment to sustainable development.

In 2015, Terna obtained UNI EN ISO 50001 certification of its Energy Management System.

The standard specifies the requirements to create, launch, maintain and make improvements to an energy management system. The goal of such a system is to allow an organisation to use a systematic approach to pursue the continued improvement of its energy performance.

Implementing a management system for energy consumed for one's own uses, in addition to increasing the value of the company's image, helps to reduce energy consumption and shows an ethical behaviour with respect to the environment and ensures effective control of the risk of any possibility of improper energy usage. It also restores a positive image in public opinion of a corporation that ensures transparency in its energy management.

Terna launched a study to establish an SBT (science-based target) for the equipment that contributes to energy consumption from the electrical stations. The results of the study will allow new technical specifications to be established for the purchase of equipment with less electricity absorption.

The energy diagnoses of the electrical stations provide as output an energy efficiency maximisation plan for the consumption at individual sites that helps to achieve the efficiency objectives identified in the Sustainability Plans.

For projects that include only transmission lines, the credit can be considered not applicable.

INTENT	To save energy, reducing total energy consumption during operations for the useful life of the project.
METRICS	Percentage of energy reduction achieved during operation.
APPLICABILITY	Applicable to projects that include the creation of electrical stations and to streamlining projects that also include electrical stations.
BENCHMARK	<u>New projects</u> : are assessed based on a representative sample (station type) of the generation stations (for example: pilot project for monitoring and increasing efficiency of the consumption at the Rondissone electrical station; LCA produced). <u>Retrofitting/upgrading projects for an existing plant</u> : existing system that is retrofitted or updated.





LEVELS OF ACHIEVEMENT				
IMPROVED	Not Available			
10% Energy Reduction	30% Energy Reduction	50% Energy Reduction	70% Energy Reduction	
A+B A+B A+B A+B				
POINTS: 6	POINTS: 12	POINTS: 18	POINTS: 26	
(A) The project team determines the estimated annual energy consumption of the project. If annual energy consumption varies, the project team submits the range of estimated performance over the project life.				
(B) Operational energy is reduced at least 10%.				

A. Has the project team determined the estimated annual energy consumption of the project during operations?

- 1. Report on the calculation of expected energy consumption by the specific project (including using results of LCA studies for part of the operation and the monitoring plan for the electrical stations).
- 2. Electrical station energy diagnosis (done according to current law)

B. To what extent has the project reduced operational energy consumption?

- 3. Documentation related to the specific baseline considered (also in compliance with ISO 5001 requirements)
- 4. Calculation of the percentage of consumption reduced with respect to the benchmark considered (Annual Energy Monitoring System Management Report)





RA 2.2 REDUCE CONSTRUCTION ENERGY CONSUMPTION

This credit aims to reduce the use of energy in the infrastructure construction phase, reducing demand during the entire useful life of the project.

TERNA is equipped with an ISO 50001 certified energy management system.

In the event that the *Design* + *Post Construction* (*Path A*) certification process is chosen, this credit will be 'pending', because all the information required by this credit may not be present when the first Design Review is submitted. These elements must then be produced, as documentary evidence, at the end of the Post-Construction Review.

INTENT	To save energy and reduce greenhouse gas emissions and air pollution by reducing energy consumption during the construction phase.
METRICS	Number of strategies implemented during the project's construction phase that reduce energy consumption and emissions.
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT							
IMPROVED	IMPROVED ENHANCED SUPERIOR CONSERVING						
Identify Reduction	At Least Two	At Least Four	At Least Six Reduction				
Opportunities	Reduction Strategies	Reduction Strategies	Strategies				
Α	A + B	A + B	A + B				
POINTS: 1	POINTS: 4	POINTS: 8	POINTS: 12				
(A) The project team condu energy consumption during	cts one or more planning construction.	reviews to identify and ana	lyse options for reducing				
(B) The project implements, or has written requirements to implement, at least two (2) energy reduction strategies		(B) The project implements, or has written requirements to implement, at least four (4) energy reduction strategies.	(B) The project implements, or has written requirements to implement, at least six (6) energy reduction strategies.				

EVIDENCE AND DOCUMENTATION REQUIRED

A. Has the project team conducted planning reviews to reduce energy consumption during construction?

- 1. Energy diagnosis of the construction site
- 2. Presence of the energy manager (appointed by internal corporate note *Technician* responsible for the conservation and rational use of energy)
- 3. Operating instructions related to managing operations of the work sites
- 4. Operating instructions related to environmental management of the work sites
- 5. Statement from contracting firms on the certification of the Management System under ISO 50001
- B. To what extent have energy conservation strategies been implemented during construction?
 - 1. Improvement actions deriving from the work site's energy diagnosis
 - 2. The documentation established under point A allows the establishment of the strategies to be implemented at the work sites, based on the type of project.
 - 3. Number and type of strategies implemented in the work sites for the specific project, as a function of the established level of achievement





Note. Some examples of consumption reduction strategies during construction might be:

- Use of hybrid or entirely electric vehicles for at least 50% of the fleet at the work site;
- commuting programs for the workforce at the site with incentives, etc.





RA 2.3 USE RENEWABLE ENERGY

This credit has the objective of using renewable energy sources to reduce the consumption of nonrenewable or fossil sources during the infrastructure operation phase.

As with credit RA 2.1, this credit will be applicable only to projects including the presence of electrical stations and for streamlining projects that also include electrical stations.

If applicable, the amount of energy from renewable sources, and thus the achievable percentage, should be taken from the energy mixture provided by the energy producer from which TERNA buys energy for the project in question.

For projects that include only transmission lines, the credit can be considered not applicable.

Also refer to credit RA 2.1 for other general considerations.

INTENT	To satisfy energy needs during operations through renewable energy sources.				
METRICS	How much renewable energy sources are incorporated.				
APPLICABILITY	Applicable only to projects that include the construction of electrical stations and streamlining projects that also include electrical stations.				
BENCHMARK	<u>New projects</u> : are assessed based on a representative sample (station type) of the generation stations (for example: pilot project for monitoring and increasing efficiency of the consumption at the Rondissone electrical station; LCA produced). <u>Retrofitting/upgrading projects for an existing plant</u> : existing system that is retrofitted or updated.				

LEVELS OF ACHIEVEMENT					
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE	
At Least 5%	At Least 15%	At Least 30%	At Least 50%	Net positive	
Α	Α	Α	Α		
POINTS: 5	POINTS: 10	POINTS: 15	POINTS: 20	POINTS: 24	
(A) The project meets: 5% of energy needs (electricity and fuel) from renewable sources.	(A) The project meets: 15% of energy needs (electricity and fuel) from renewable sources.	(A) The project meets: 30% of energy needs (electricity and fuel) from renewable sources.	(A) The project meets: 50% of energy needs (electricity and fuel) from renewable sources.	(A) The project generates a net positive amount of renewable energy.	

EVIDENCE AND DOCUMENTATION REQUIRED

A. To what extent does the project meet electricity or fuel needs from renewable sources?

- 1. Projection of the infrastructure's energy requirements on an annual basis
- 2. Projection of energy obtained on an annual basis by using renewable sources and a
- calculation of the percentage with respect to the infrastructure's total energy requirements 3. The renewable energy sources can be: solar (thermal, passive and active photovoltaic),
- wind, hydroelectric, tidal, geothermal, or energy from biomass or fuel cells.
 - 1. Monthly report on the energy system
 - 2. Consumption extraction report on the electrical stations from the corporate MBI (Monitoring & Business Intelligence) Station system
 - 3. Consumption extraction from the EciWeb system for monitoring electricity consumption

<u>Note.</u> As TERNA is not able to influence the choice, for the assessment of this criterion, refer to the national energy mixture.





RA 2.4 COMMISSION AND MONITOR ENERGY SYSTEMS

This credit is intended to ensure that the project's general performance and energy performance continue and remain efficient throughout its useful life.

Starting in 2015, the Terna Group has certified its management system according to the UNI CEI EN ISO/IEC 50001 standard, 'Energy management systems – Requirements and guidelines for use'. The standard specifies the requirements to create, launch, maintain and make improvements to an energy management system. The goal of this system is to allow the Terna Group to use a systematic approach to pursue constant improvement of its energy performance, including energy efficiency as well as consumption and energy use.

Through the Integrated Management System implemented, Terna is equipped with about 60 contact persons for the ISO 50001 Energy Management System throughout the nation, with specific skills in different areas and plant units, in order to:

- Provide information related to branches and/or electrical stations of relevance needed for the preparation of the energy indicators and the Energy Management System Review;
- Draft and/or provide support in drafting the energy diagnoses for its area of competence, offering possible improvement solutions for the site analysed.

Also, in line with the provisions in article 19 of Law no. 10 of 9 January 1991 and to encourage the performance required by the ISO 50001 standard and by Legislative Decree 102/2014, a position has been identified of the 'Technician responsible for the conservation and rational use of energy' (Energy Manager) for the companies Terna SpA, Terna Rete Italia SpA, Terna Plus Srl and Terna Energy Solutions Srl under the Terna Group, and the appointment was formalised via a special corporate Internal Note.

Specifically, L.D. 102/2014 requires that large corporations perform energy diagnoses every 4 years on a significant sample of elements that consume energy; Terna regularly does these energy diagnoses on its sites (branches for office use, electrical stations, construction sites) and these documents are then collected and certified by ENEA.

There is also an active project for on-line monitoring, with a sampling frequency and storage of 15 minutes on the special EciWeb information system, of a sample of 24 electrical stations.

This sample was identified using the following selection criteria:

- Total energy absorbed;
- Climate zone;
- Geographic location;
- Extent of the area occupied by the entire plant;
- Number of functional units in the station;
- Substation type (Air insulated AIS or Gas Insulated GIS);

and this is therefore a significant sample of the roughly 800 total stations, using a specific calculation algorithm.

In particular, on individual projects the credit can be applied only to the parts of stations for which electricity consumption is anticipated, but it does not apply to power lines that by their nature have only the function of transporting energy.





INTENT

To ensure efficient functioning and to extend useful life, detailing the commissioning and monitoring of energy systems.

METRICS

Addition of monitoring equipment and software, the extent of the commissioning and the independence of the commissioning agent with respect to the project.

APPLICABILITY Applicable

LEVELS OF ACHIEVEMENT					
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available	
Basic Initial Commissioning	Extensive Initial Commissioning	Long-Term Commissioning	Advanced Initial And Long-Term Commissioning		
A + B	A + B	A + B + C	A + B + C		
POINTS: 3	POINTS: 6	POINTS: 12	POINTS: 14		
 (A) The project includes energy monitoring capabilities. Equipment and/or software are incorporated to allow detailed monitoring of performance during operation. The equipment is capable of independently monitoring all primary project functions, accounting for at least 50% of energy use/consumption. 	 (A) The project includes energy monitoring capability. Equipment and/or software are incorporated to allow detailed monitoring of performance during operation. The equipment is capable of independently monitoring all primary project functions, accounting for at least 75% of energy use/consumption. 	 (A) The project includes intersystems. Energy management softwarfor detailed and centralized of performance. The equipment is capable of all primary project functions, of energy use/consumption. 	grated energy management re is incorporated to allow monitoring and reporting of f independently monitoring accounting for at least 90%		
(B) The project conducts an initial commissioning of energy systems accounting for at least 50% of the total energy consumption/generation. Commissioning includes a detailed log of issues.	(B) The project conducts an initial commissioning of energy systems accounting for at least 75% of the total energy consumption/generation. Commissioning includes a detailed log of issues.	(B) The project conducts an initial commissioning of energy systems accounting for at least 90% of the total energy consumption/generation. Commissioning includes a detailed log of issues. The owner engages a third party or in-house commissioning agent not involved in the planning/design of the project.	(B) The project conducts an initial commissioning of energy systems accounting for at least 90% of the total energy consumption/generation. Commissioning includes a detailed log of issues. The owner engages an independent third-party commissioning agent.		
		(C) A comprehensive plan is	developed for ongoing		
		periodic re-commissioning/re	eview of energy systems		
throughout the expected life of the project.					

EVIDENCE AND DOCUMENTATION REQUIRED

A. Does the design incorporate advanced integrated monitoring systems in order to enable more efficient operations?

- Provide the percentage of energy-consuming plant equipment monitored and accounted for with respect to the total of these structures in the project. The monitoring system may take place through:
 - *EciWeb* software for the on-line monitoring of consumption by buildings and electrical stations (system dedicated to the collection, storage and analysis of data and information)
 - *MBI Stations* (Monitoring & Business Intelligence) corporate asset management system that functions as a consumption repository





B. To what extent has a commissioning been conducted?

1. Provide the percentage of energy-consuming plant equipment subject to the initial assessment. The assessment is carried out by ascertaining that the chosen equipment is in line with the final energy efficiency objectives set by the client.

C. Is there a plan for ongoing commissioning of the energy systems throughout the project's life?

- 1. Monitoring plan that includes regular inspections of performance indicating the actions anticipated to maintain efficiency at the project's standards.
- 2. Consumption extraction from the *EciWeb* system for electricity consumption monitoring
- 3. Monitoring Report from the annual Energy Management System
- 4. Energy diagnoses of stations
- 5. New station monitoring systems
- 6. Improvement plan for the energy management system





RA 3.1 PRESERVE WATER RESOURCES

This credit aims to ensure that the quantity, availability and quality of water sources are maintained and not depleted.

Given the nature of the work, which does not anticipate water usage and consumption during operations except for marginally for sanitary systems (when present) or to irrigate plantings, this credit can be considered to be not applicable to TERNA's projects.

According to the information above, it is possible to define this credit generally as not applicable, while providing suitable supporting documentation for certification purposes.

INTENT	To assess and reduce negative net impacts on the availability, quantity and quality of fresh water to have a positive effect on the region's water resources on the scale of the watershed.
METRICS	The measure to which the project considers and helps to tackle this positively in the context of the watershed.
APPLICABILITY	Not Applicable: for projects where water consumption is expected during operations (such as for irrigation)
	<u>Applicable</u> : <i>only</i> for projects for which consistent and appreciable water usage and consumption during operation is expected.

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Increased Awareness Of Watershed Issues	Good Water Resource Management	Wise Water Resource Management	Total Water Management	Positive Impact
A + B	A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F
POINTS: 3	POINTS: 5	POINTS: 7	POINTS: 9	POINTS: 12
(A) Assess the project's watershed context and the watershed-scale fresh water issues, including location, type, quantity, rate of recharge, and quality of water resources, as well as source and impacts of water used and the destination and impacts of wastewater.				
(B) Estimates of water usage and wastewater generation over the life of the project.				
(C) The project has features intended to reduce the identified negative impacts of water usage, and/or improve watershed-scale issues.				

(D) The project has a net-zero impact on the quantity and availability of fresh surface water and groundwater supplies without compromising water quality.

(E) The project is part of, or contributes to, a

watershed or regional water plan.

(F) The project makes a direct and significant net-positive improvement to the watershed.





EVIDENCE AND DOCUMENTATION REQUIRED A. Has the project team conducted a watershed assessment? 1. Not applicable B. Has the project team estimated the water usage and wastewater generation over the life of the project? 1. Not applicable C. Does the project include features to minimize the negative impacts of water usage, and/or watershed-scale issues? 1. Not applicable D. Does the project have a net-zero impact on the quantity and availability of fresh surface water and groundwater supplies without compromising water quality? 1. Not applicable E. Is the project part of a watershed-level or regional plan? 1. Not applicable F. Does the project make a direct net-positive improvement to the watershed? 1. Not Applicable **DOCUMENTATION SUPPORTING NON APPLICABILITY** Documentation of the specific project confirming the absence or negligibility of water consumption 1. during operation, with respect to the scale of the project

2. Further supporting documentation





RA 3.2 REDUCE OPERATIONAL WATER CONSUMPTION

This credit has the objective of reducing the consumption of drinking water during the operation phase.

As with credit RA 3.1, given the nature of the work, which does not anticipate water usage and consumption during operations except marginally for sanitary services (if present) or for irrigating the plantings, this credit can be considered to be not applicable to TERNA's projects.

This credit is applicable only for special projects such as conversion stations, for which water consumption does take place. These conversion plants are, in any case, equipped with 'smart' detectors that allow monitoring of the use and temperature of the water, minimising its consumption.

According to the information above, it is possible to define this credit generally as not applicable, while providing suitable supporting documentation for certification purposes.

In the event that the *Design* + *Post Construction* (*Path A*) certification process is chosen, this credit will be 'pending', because all the information required by this credit may not be present when the first Design Review is submitted. These elements must then be produced, as documentary evidence, at the end of the Post-Construction Review.

INTENT	To reduce global water consumption, while encouraging the use of waste water, recycled water and rainwater to meet water needs.
METRICS	Percentage reduction in the use of drinking water and the general use of water.
APPLICABILITY	<u>Not applicable</u> : for projects that do not anticipate water consumption and use during operations, or if the use is negligible compared to the scale of the project. <u>Applicable</u> : for projects related to conversion plants.

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
At Least 25% Reduction	At Least 50% Reduction	At Least 75% Reduction	95% Reduction	Water Purification
A + B	A + B + C	A + B + C	A + B + C	A + B + C + D
POINTS: 4	POINTS: 9	POINTS: 13	POINTS: 17	POINTS: 22
(A) The project team conduct The team has considered u	icts planning or design rev sing alternatives such as i	riews to identify potable wat nonpotable water, reused w	ter reduction strategies during vater, recycled water, and stor	operation of the project. mwater.
(B) The project reduces potable water use by at least 25%.	(B) The project reduces potable water use by at least 50%.	(B) The project reduces potable water use by at least 75%.	(B) The project reduces potable water use at least 95%.	(B) The project reduces potable water use by 100%.
	(C) Overall water use (potable and nonpotable) is reduced by at least 20%.	(C) Overall water use (potable and nonpotable) is reduced by at least 30%.	(C) Overall water use (potable and nonpotable) is reduced by at least 40%.	(C) Overall water use (potable and nonpotable) is reduced by at least 50%.
				(D) The project not only reduces potable water consumption to zero, but also provides water that can be used by the community.





- A. Has the project team conducted planning and design reviews to identify potable water reduction strategies during operation of the project?
 - 1. Not applicable
- B. To what extent has the project reduced potable water use?
 - 1. Not applicable
- C. To what extent has the project reduced overall water use (including potable and nonpotable water)?
 - 1. Not applicable
- D. Does the project have a net positive impact on water use?
 - 1. Not Applicable

DOCUMENTATION SUPPORTING NON APPLICABILITY

- 1. Documentation of the specific project confirming the absence or negligibility of water consumption during operation, with respect to the scale of the project
- 2. Further supporting documentation





RA 3.3 REDUCE CONSTRUCTION WATER CONSUMPTION

This credit is intended to reduce drinking water consumption during the construction of electricity transmission infrastructure, by the implementation of different conservation strategies.

In the event that the *Design* + *Post Construction* (*Path A*) certification process is chosen, this credit will be 'pending', because all the information required by this credit may not be present when the first Design Review is submitted. These elements must then be produced, as documentary evidence, at the end of the Post-Construction Review.

When possible, TERNA adopts water consumption reduction strategies during construction.

Some strategies that may be implemented during construction might be:

- Reduction of embodied water through the selection of the materials used (for example, establishing that potable water was not used for the production of a particular material);
- Rainwater recovery for use in the work site (e.g. washing tires, dust reduction systems)

To reduce potable water consumption during the construction of the infrastructure.

Number of strategies implemented during construction that reduce the consumption of drinking water.

APPLICABILITY Applicable

LEVELS OF ACHIEVEMENT **IMPROVED ENHANCED SUPERIOR** CONSERVING **Not Available** Identify Consumption At Least Three At Least Five No Potable Water And Reduction Options Strategies Strategies Consumption A + B A + B A + BA + B POINTS: 1 POINTS: 3 POINTS: 5 POINTS: 8 (A) The project team conducts one or more planning reviews to identify and analyse options for reducing water consumption during construction. (B) No potable water (B) At least three (3) (B) At least one (1) (B) At least five (5) consumption, except for potable water potable water potable water human consumption and conservation conservation strategies conservation strategy is hygiene, by means of strategies are are implemented. implemented. implementing as many implemented. strategies as necessary.

EVIDENCE AND DOCUMENTATION REQUIRED

- A. Has the project team conducted planning reviews to reduce water consumption during construction?
 - 1. Documentation related to reviews of planned projects that show how the various strategies to reduce potable water consumption were established and integrated during construction.
- B. To what extent have water conservation strategies been implemented during construction?
 - 1. Documentation related to the number and type of strategies implemented. For example:
 - Use of alternative methods to suppress dust (at least 50% reduction of potable water consumption using alternative methods);
 - Reduction of embodied water, reducing the percentage of new materials entering the work site (at least 10% reduction of the amount of new materials incoming);
 - Alternative methods for curing concrete (at least 50% reduction of the consumption of potable water using alternative methods);
 - Collection of rainwater (for at least 40% of usage)





2. Calculation of the amounts of drinking water saved (in litres) for each of the strategies implemented at the work site, compared to not using them





RA 3.4 MONITOR WATER SYSTEMS

This credit has the objective of reducing negative impacts on the water resources in the area and surrounding the operation, using monitoring and control systems.

As with credit RA 3.1, given the nature of the work, which does not anticipate water usage and consumption during operations except marginally for sanitary services (if present) or for irrigating the plantings, this credit can be considered to be not applicable to TERNA's projects.

According to the information above, it is possible to define this credit generally as not applicable, while providing suitable supporting documentation for certification purposes.

INTENT	To reduce potable water consumption during the construction of the infrastructure.
METRICS	Number of strategies implemented during construction that reduce the consumption of drinking water.
APPLICABILITY	Not applicable: for all projects that do not anticipate water consumption and use during operations or if consumption is negligible with respect to the scale of the project.

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	Not Available
One-Time Monitoring	Operations Monitoring	Long-Term Monitoring	Responsive Monitoring	
Α	Α	Α	A + B	
POINTS: 1	POINTS: 3	POINTS: 6	POINTS: 12	
 (A) The project includes monitoring capabilities. Equipment and/or software are incorporated in the design to allow detailed monitoring of performance (quantity or quality). The equipment is capable of monitoring all primary project functions, accounting for at least 50% of water use. 	(A) The project includes monitoring capabilities. Equipment and/or software are incorporated in the design to allow detailed monitoring of performance (quantity or quality). The equipment is capable of monitoring all primary project functions, accounting for at least 75% of water use.	POINTS: 6POINTS: 12(A) The project includes monitoring capabilities. Equipment and/or software are incorporated in the design to allow detailed monitoring of performance (quantity or quality). The equipment is capable of monitoring all primary project functions, accounting for at least 95% of water use.		
			(B) The project demonstrates that real- time water monitoring equipment and/or software has been incorporated along with a plan for using this data to improve water	
			quality and efficiency, reduce leakage, and/or	

conserve water.





- A. Does the design incorporate advanced integrated monitoring systems in order to improve performance?
 - 1. Not applicable
- B. Does the project include real-time water monitoring?
 - 1. Not Applicable

DOCUMENTATION SUPPORTING NON APPLICABILITY

- 1. Documentation of the specific project confirming the absence or negligibility of water consumption during operation, with respect to the scale of the project
- 2. Further supporting documentation





RA 0.0 INNOVATE OR EXCEED CREDIT REQUIREMENTS

This credit allows an evaluation of innovative elements characteristic of the project that go beyond expectations in other credits in the category.

The scores related to this credit are not included in the total applicable points and therefore qualify as bonus scores.

INTENT

To reward exceptional performance beyond the expectations of the system and the application of innovative methods that promote state-of-the-art sustainable infrastructure.

METRICS

The project's sustainability performance qualifies as innovation or exceptional performance or is not otherwise recognised in the existing credits.

LEVELS OF ACHIEVEMENT				
INNOVATION				
Innovate or Exceed Credit Requirement				
A or B or C				
POINTS: MAX 10				
 (A) Implement innovative methods, technologies, or processes that are novel either in their use, application, or within the local regulatory or cultural context. OR 				
(B) Implement measures that exceed the highest existing requirements within one or more Resource Allocation credits. OR				

(C) Address additional aspects of sustainability not currently recognized in Envision

EVIDENCE AND DOCUMENTATION REQUIRED

- A. To what extent does the project implement innovative methods, technologies, or processes that overcome significant problems, barriers or limitations, or create scalable and transferable solutions?
 - 1. Documentation highlighting the application of innovative technical methods or solutions.
- B. To what extent does the project exceed the highest levels of achievement for a given credit?
 - 1. Documentation highlighting the fulfilment of the requisites required for the maximum achievement level of a credit in the *Resource Allocation* category
- C. To what extent does the project address a sustainability aspect that is not currently addressed by the Envision system?
 - 1. Documentation highlighting how the project addresses a sustainability issue pertaining to the *Resource Allocation* category, not currently evaluated by the other credits in the category.





Natural World

NW 1.1 PRESERVE SITES OF HIGH ECOLOGICAL VALUE

This credit requires the identification of sensitive local issues through the study and identification of areas of high ecological/naturalistic value, through bibliographic analysis and through inspections aimed at fauna and vegetation census, as well as through a dialogue with stakeholders, with the intent not to locate the project within such areas.

For the purposes of applying the credit and the type of works in question, Natura 2000 sites and other areas indicated by the authorities in the authorisation phase are considered to have a high environmental value, and meet the characteristics anticipated by the credit (biodiversity, functionality of the ecosystems and site age).

INTENT	To avoid installing the project and construction site areas on sites that have been identified as areas of high ecological value.
METRICS	Extent to which areas of high ecological value are avoided and protection buffers are established.
APPLICABILITY	In the event that none of the project alternatives considered have areas classified as having a high ecological value, this credit can be considered not applicable with adequate supporting documentation.

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Improved Siting	Full Mitigation	Total Avoidance	Habitat Protection	Habitat Expansion
A + B	A + B	A + C	(A + C + D) or E	A + C + D + F
POINTS: 2	POINTS: 6	POINTS: 12	POINTS: 16	POINTS: 22
(A) The project team ident	tifies areas of high ecologica	l value.		
(B) Mitigation measures, including avoidance, minimization, restoration, and offsets, fully compensate for project impacts to sites of high ecological value. Mitigation may occur off site.	(B) Mitigation measures including avoidance, minimization, restoration, and offsets, fully compensate for project impacts to sites of high ecological value. Mitigation is on site or an adjacent contiguous parcel of equal or higher ecological value. Temporary impacts from construction activities do not decrease the capacity of preserved land.	(C) The project avoids developing or disturbing 100% of areas of high ecological value located on site.		
	·		(D) The project established buffer zones around areas	s effective protective of high ecological value.
			OR (E) The project team can demonstrate that the site was intentionally chosen to avoid development on or near sites of high ecological value.	(F) The project increases the area of high ecological value. This involves the restoration of areas of high ecological value or conservation of surrounding areas, as determined by a licensed or similarly

qualified professional.





A. Has the project team identified whether the site contains areas of high ecological value?

- 1. Analysis of the constraints during planning and calculation of interference with areas of high ecological value using indicator I23 in the operation form in the ER in the DP.
- 2. Constraint analysis using the data available (Terna's mapping data bank) including data received through special Memoranda of Understanding for data exchange with regions, managing agencies and publications on public sites. Terna performs constraint analyses in order to identify sites on an adequately sized buffer.
- 3. Geo-referenced identification of sites with high ecological value using the GIS
- 4. Pre-construction environmental monitoring plan, if expected
- 5. Documents showing compliance with any environmental directives from the agencies during the authorisation phase

B. Has the project mitigated any areas of high ecological value that are disturbed?

- 1. Environmental Impact Assessment (VINCA) to evaluate in advance whether certain projects could have significant impact on sites of community importance (SICs), on Special Conservation Areas and on Special Protection Areas (SPAs).
- 2. Pre-screening and verification of liability, to assess, if anticipated, whether projects can have a significant positive or negative impact on the environment and whether they should be subject to assessments
- 3. For work subject to EIAs, production of the Environmental Impact Study (EIS) for the assessment of the environmental impacts generated by the work in the project; verify the effectiveness of the mitigation measures expected in the EIS to reduce the extent of the significant environmental impacts identified during construction and operation (monitoring during work and post-construction); to identify any unforeseen environmental impacts or those of a greater extent than the forecasts contained in the EIS and to schedule the appropriate corrective measures for their resolution (monitoring during work and post-construction);
- 4. Any Environmental Monitoring Plan (EMP) before, during and after construction, to monitor the environmental impacts of a work, the plan for which is subject to approval or authorisation
- 5. Documentation showing compliance and any environmental directives from agencies (including for projects not subject to an EIA or VINCA process)

C. Does the project avoid developing or disturbing areas of high ecological value on site?

- 1. ERPA Criteria
- 2. Layout plan with siting of the work with respect to the areas identified (with any buffers)
- 3. Environmental Specifications (for the construction phase) or Construction Site Plan

D. Does the project preserve an effective protective buffer zone around areas of high ecological value?

- 1. Environmental Impact Assessment (VINCA) In the analysis referred to above, Terna performs an assessment of ecological impacts with a certain buffer based on the location of the work and related disturbances.
- E. Was the project intentionally sited to avoid areas of high ecological value?
 - 1. ERPA Criteria
 - 2. Analysis of the alternatives and assessment of direct interference (or lack thereof) of sites with high ecological value
 - 3. Compliance with specific directives (required by organisations to avoid direct interference with Nature 2000 areas)




F. Does the project significantly increase the area of high ecological value?

- 1. Disposal of overhead lines with the cancellation of the ecological impact on high-value areas
- 2. Creation of new habitats in accordance with specific authorisation-related directives both on site and in the surrounding areas





EXAMPLE PROJECT:

RETROFITTING OPERATION AT THE PILASTRELLO SPRING IN THE MUNICIPALITY OF LACCHIARELLA

Springs are artificial outlets for groundwater created by people for irrigation usage by inserting long pipes that reach the aquifer and let it flow out. The ecological peculiarities of springs, characteristic features of the Lombardy plain, is their ability to increase the naturalistic value of the surrounding area.

The constant temperature of the water that comes out and its chemical characteristics create a habitat for high biodiversity, so they are the ultimate shelters for many ecologically demanding plant and animal species. One can indeed observe typical animals from the pre-Alpine or Alpine zones, next to species typical of the plains attracted by the wealth of organisms to feed on and the variety of ecological niches created by the vegetation.

The spring's positive influence extends to its shores, where the rich vegetation provides good nesting opportunities for birds and shelter for reptiles and small mammals (hedgehogs and rodents) as well as acting as an ecological corridor for migrating species.

The retrofitting operations anticipated for the Pilastrello spring, which refer to environmental engineering principles and methods, are aimed at restoring the functionality of that spring and the consequent conservation of residual fragments of natural habitat and the restoration of local ecosystems through the use of native plants referred to stages of the active series of the potential vegetation at the site of interest. Work to stabilise and strengthen the banks has also been done with exclusive use of local species and organic materials (logs, coconut fibre rollers).



Inside the Parco Naturale Regione del Molentagius, the demolition project of the pylons inside the stretch of water linked to the landscape redevelopment provided for the non-disposal of the old foundations from the seabed that were used as a roost for flamingos (photo of 2012).





NW 1.2 PROVIDE WETLAND AND SURFACE WATER BUFFERS

This credit is intended to enhance design choices aimed at protecting, safeguarding, enhancing and restoring areas such as wetlands, coastal areas and bodies of water, providing them with suitable natural buffer zones.

If bodies of surface water are to be crossed, the design choices aimed at protecting such bodies of water will be highlighted, as for example the use of existing structures (e.g. bridges).

INTENT	To protect, conserve, improve and restore wetlands, coastal zones and bodies of water, providing them with natural buffers, vegetation and soil protection areas.
METRICS	Type and quality of the natural buffer zones to establish around wetlands, coastal areas and bodies of water.
APPLICABILITY	If none of the project alternatives considered contain wetlands or surface bodies of water, this credit can be considered to be not applicable with appropriate supporting documentation.

	LE	VELS OF ACHIEVEN	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Buffers	Managed Buffers	Mixed Buffers	Natural Buffers	Buffer Restoration
A + B + C	A + B + C	A + B + C	(A + B + C) or D	A + B + C + E
POINTS: 2	POINTS: 5	POINTS: 10	POINTS: 16	POINTS: 20
(A) The project team identif	ies wetlands and surface	water on or near the site, o	r with the potential to be impac	cted by the project.
(B) The project team identif	ies the appropriate type a	nd width of buffer zones for	wetlands and surface waters.	
(C) The project provides vegetated or natural buffer zones around at least 90% of wetlands and surface waters on site. The remaining areas (<10%) are protected with engineered controls. Together they are sufficient to slow surface runoff, and trap sediments, pesticides, and other pollutants. Minimum buffer width is 50 ft/15 m unless otherwise justified under criterion B.	(C) The project provides a buffer of managed vegetated zones around all wetlands and surface waters. Managed zones may include grass. The buffer is of sufficient width to slow surface runoff, and trap sediments, pesticides, and other pollutants. Minimum width is 100 ft/30 m unless otherwise justified under criterion B.	 (C) The project provides a mixed buffer of managed vegetation and natural zones around all wetlands and surface waters. Natural areas are not managed and consist of natural habitat. The buffer is of sufficient width to slow surface runoff, and trap sediments, pesticides, and other pollutants. Minimum width is 150 ft/45 m unless otherwise justified under criterion B. 	(C) The project provides a b around all wetlands and surf The buffer is of sufficient wic and trap sediments, pesticid Minimum width is 200 ft/60 r justified under criterion B.	uffer of natural zones ace waters. Ith to slow surface runoff, es, and other pollutants. n unless otherwise
			OR (D) The project team can demonstrate the site was intentionally chosen to avoid development on or near wetlands or surface waters.	(E) The creation of the protective buffers includes returning previously developed or disturbed areas to a natural state. Project teams may alternatively demonstrate the recovery of pre-existing buffer zones that have degraded in quality.





A. Has the project team identified wetlands and surface waters on or near the site?

- 1. Analysis of constraints during planning and calculation of the interference with wetlands using indicator (I_{23})
- 2. Collection and analysis of the data available (Terna's map database) including data received through special Memoranda of Understanding on data exchanges with regions, managing agencies and publications on public sites; Terna performs a constraint analysis to identify water areas with the creation of maps indicating the presence of wetlands and surface bodies of water in the area.
- 3. Application of ERPA criteria to orient the siting of the work to minimise impacts on the territory
- 4. Drawing up authorisation-related documentation focussed on the protection and improvement of wetlands or surface waters (e.g.: landscape report, VINCA or alternative documents evaluating the presence of valuable features
- B. Has the project team determined the type and width of buffer zones necessary to protect wetlands and surface waters?
 - 1. Layout plans with identification of the sizing and type of buffers expected under current law
- C. To what extent has the project implemented protective buffer zones around wetlands and surface waters?
 - 1. Layout plans with identification and sizing of the buffers established around wetlands
 - 2. Any plans deriving from authorisation-related directives that include the creation of a buffer around the work (e.g. plantings, environmental engineering work)

D. Was the project intentionally sited to avoid wetlands and surface waters?

- 1. Selection of a route or technologies (e.g. TOC) that avoid interference with wetlands and bodies of water
- 2. Re-use of existing human-made structures (e.g. bridges) for crossing wetlands and waterways
- E. Will the project involve returning previously developed or disturbed sites within the buffer zone to a natural state?
 - 1. Revegetation operations with native plants to restore the stability of the embankments where the construction included cutting plants Projects to remove existing structures (e.g. any streamlining operations)

Rev. 00 July 2021



INTENT



NW 1.3 PRESERVE PRIME FARMLAND

This credit intends to identify, through the analysis of land use for vegetation and any inspections and censuses, the presence of areas of high agricultural value, with particular attention to DOC, DCG and IGP labelling, etc., in the area involved by the project, and to provide for their protection.

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10 lucitur	y and proto	si gi ounus inc	a are connigu	reu as myn	value lamini	j arcas.

 METRICS
 Percentage of prime farmland avoided or protected.

 APPLICABILITY
 If none of the design alternatives considered included or protected.

If none of the design alternatives considered include prime farmland, this credit can be considered to be not applicable with adequate supporting documentation.

	LE	VELS OF ACHIEVEN	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
(Not Available)	Less than 10% Disturbance	Less than 5% Disturbance	100% Avoidance	Restore Productive Farmland
	A + B + C	A + B + C	(A + B) or D	A + B + E
	POINTS: 2	POINTS: 8	POINTS: 12	POINTS: 16
	(A) The project team ide importance.	ntifies soils designated as	prime farmland, unique farmla	nd, or farmland of
	(B) Less than 10% of the project site is developed or disturbed prime farmland.	(B) Less than 5% of the project site is developed or disturbed prime farmland.	f the (B) The project avoids developing or disturbing an prime farmland located on site.	
	(C) Farmland permanently damaged or disturbed as a result of the project is mitigated through offsets. Any farmland temporarily disturbed as a result of construction impacts is restored to a level that does not decrease the capacity of the preserved land.		OR (D) The project team can demonstrate the site was intentionally chosen to avoid areas of prime farmland.	(E) In addition to 100% avoidance, the project includes protecting farmlands for posterity against future disturbance, or restoring previously developed areas to a contiguous, functional, and productive farmland state.





- A. Has the project team assessed the project site for soils identified as prime farmland, unique farmland, or farmland of importance?
 - 1. ERPA criteria
 - 2. Analysis of soil use for vegetation (e.g. analysis of the Terna data bank, site visits and censuses, EISs or Scenery Reports as required)
 - 3. Identification of land used for high-value agricultural crops

B. To what extent will the project protect or preserve prime farmland, unique farmland, or farmland of importance?

- 1. Layout plan with work siting with respect to prime farmland areas
- 2. Calculation of the percentage of interference
- C. Has the project team mitigated any damage or disturbance to prime farmland, unique farmland, or farmland of importance?
 - 1. Project documents showing non-interference (usually to minimise any impacts, including upon request of the owners, the siting of the supports in farming areas in general is done by getting as close as possible to the border of the farms, avoiding disturbance or damage to crops and any fixed irrigation systems)
 - 2. Projects to restore areas and construction pathways (environmental specifications and/or specific authorisation-related directives)

D. Was the project intentionally sited to avoid prime farmland?

- 1. Soil use map
- 2. Identification of land used for high-value agricultural crops
- 3. Project layout plans showing lack of interference

E. Does the project preserve existing farmland for posterity or restore previously disturbed farmland?

1. Any restoration following disposal (e.g. streamlining) Any compensatory work required by directives from agencies





NW 1.4 PRESERVE UNDEVELOPED LAND

This credit is intended to enhance the design choices aimed at conserving the areas not subject to previous urbanisation ('greenfields'), where possible, installing the infrastructure on previously human-made areas ('greyfields' and/or 'brownfields').

For the purposes of applying this credit, consider as the surface area for the percentage calculation the area corresponding to the area occupied by the supports and any stations. The footprint of power lines therefore does not fall under the calculation (for both overhead lines and underground cables) as any easements or limitations on use do not compromise the greenfield features of the natural or farming areas passed through.

INTENT	To preserve virgin areas, siting the work in areas previously altered by humans.
PROTOCOL METRICS	Percentage of the surface area of the project that encroaches on areas already subject to previous human development.
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT					
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE	
At Least 25% Previously Developed	At Least 50% Previously Developed	At Least 75% Previously Developed	100% Previously Developed	Restore Natural Areas	
Α	Α	Α	Α	A + B	
POINTS: 3	POINTS: 8	POINTS: 12	POINTS: 18	POINTS: 24	
(A) At least 25% of the developed area of the project is located on previously developed land.	(A) At least 50% of the developed area of the project is located on previously developed land.	(A) At least 75% of the developed area of the project is located on previously developed land.	(A) 100% percent of the developed area of the project is located on previously developed land.		

(B) Return developed areas to a condition that supports, or could support, open space, habitat, or natural hydrology.

EVIDENCE AND DOCUMENTATION REQUIRED

A. To what extent is the project located on previously developed land?

- 1. Application of ERPA criteria to orient the siting of the work to minimise impacts on the territory, to implement strategies and choices on alternative layouts. One of the attraction parameters in the ERPA criteria for creating preferential corridors is established by the existing infrastructures (roads, highways, existing power lines, etc.).
- 2. Layout plan with siting of the work
- 3. Assessment of the percentage involvement of the areas already compromised or under the most human pressure, or the use of degraded areas or unused/abandoned sites
- B. Has the project returned developed areas to a condition that supports natural open space, habitat, or natural hydrology?
 - Projects plans showing the retrofitting of unused sites and that the project has a positive return in the restoration of natural areas or vegetation Projects to remove existing structures (consider any streamlining operations)





NW 2.1 RECLAIM BROWNFIELDS

The criterion is intended to enhance the benefits deriving from the installation of a project on a contaminated site (*brownfield*) with simultaneous reclamation of the area.

For purposes of the application of this credit, reclamation of a contaminated site means only the reclamation of the part of the contaminated area involved with the operation and in the layout of the work.

INTENT	To locate projects to overlap contaminated sites.
METRICS	The degree to which the contaminated site has been reclaimed.
APPLICABILITY	If none of the possible alternative plans considered include contaminated sites, this credit can be considered to be not applicable with adequate supporting documentation.

	LE	VELS OF ACHIEVEN	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Reuse Former Brownfield	Mitigate Exposure	Passive Remediation	Active Remediation	Complete Remediation
A	B + C	B + C	B + C	B + C + D
POINTS: 11	POINTS: 13	POINTS: 16	POINTS: 19	POINTS: 22
(A) The project is located on a site classified as a brownfield that has been remediated by others.	(B) The project is locate	d on a site classified as a b	prownfield, or is known to conta	ain contamination.
	(C) Minimum required capping and remediation is performed to reduce human exposure to safe levels. Contaminants remain generally on site at levels that can be addressed by engineering and/or institutional controls.	(C) Passive remediation is performed to reduce human exposure and to gradually remove or break down contamination on the site.	(C) Active remediation, or a combination of active and passive remediation, is performed to reduce human exposure and to remove or break down contamination on the site.	(C) Active remediation, or a combination of active and passive remediation, is performed to restore the entirety of site soils and/or groundwater back to regional background or unrestricted use levels.
		·		(D) The site is closed/deregulated by regulators, or is in the process of closing and has a long-term site management, monitoring, and inspection plan.





A. Is the project located on a site currently identified as a closed brownfield?

1. Documentation showing that the site was already reclaimed based on regulations in the sector (for example the implementation of reclamation projects)

B. Is the project located on a site currently identified as an active brownfield?

- 1. Project site layout plan highlighting contaminated sites (for example, SNIs or SRIs).
- 2. Regional lists of contaminated sites
- 3. Characterisation plan
- C. To what extent has the project mitigated or remediated the site?
 - 1. Characterisation plan
 - 2. Project for reclamation/restoration to operational safety

D. Has the brownfield site been closed or deregulated?

- 1. Certificate of completed reclamation
- 2. Release/restitution of the areas





NW 2.2 MANAGE STORMWATER

This credit addresses the infrastructure's impacts on the ability to accumulate rainwater.

By its nature, this credit is therefore not applicable to electrical transmission infrastructure (power lines or underground cables) as the latter does not cause the impermeability of significant surface areas. The areas of the electrical stations should be considered in any case, if present in the project to be assessed and if significant compared to the scale of the project.

INTENT	To minimise impacts on the amount, flow and quality of the rainwater runoff.
METRICS	The degree to which the project filters, causes evapotranspiration, re-uses and/or treats rainwater without exceeding the goals for speed or amount of runoff.
APPLICABILITY	This credit is applicable to all projects that influence the runoff of rainwater. Specifically, then, this credit applies to projects that include stations, while projects that only include power lines or underground cables this credit can be considered to be not applicable with adequate supporting documentation.

IMPROVEDENHANCEDSUPERIORCONSERVINGRESTORATIVExpanded Options85th percentile/ 2-year event90th percentile/ 10-year event95th percentile/ 95th percentile/ 50-year event95th percentile/ 100-year event95th percentile/ 95th percentile/ 100-year eventA + B + CA + B + CPOINTS: 2POINTS: 4POINTS: 9POINTS: 17POINTS: 24(A) Infiltrate, evapotranspirate, and/or reuse 100% of 85th percentile local 24-hour event.(A) Infiltrate, evapotranspirate, and/or reuse 100% of 90th percentile local 24-hour event.(A) Infiltrate, evapotranspirate, of 95th percentile local 24-hour event.(A) Infiltrate, evapotranspirate, or reuse 100% of 95th percentile local 24-hour event.(A) Infiltrate, evapotranspirate, or reuse more than 10 of 95th percentile local 24-hour event.OR If infiltration, If infiltration,OR If infiltration,OR If infiltration,OR If infiltration,	LEVELS OF ACHIEVEMENT					
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 (B) Do not exceed rate or quantity of runoff for the 2-year 24-hour rainfall event relative to the existing condition (greenfield, greyfield, or brownfield). (B) Do not exceed rate or quantity of runoff for the 2- and 5-year 24-hour rainfall event relative to the existing condition (greenfield, greyfield, or brownfield). (B) Do not exceed rate or quantity of runoff for the 2- and 5-year 24-hour rainfall event relative to the existing condition (greenfield, greyfield, or brownfield). (B) Do not exceed rate or quantity of runoff for the 2- and 5-year 24-hour rainfall event relative to the existing condition (greenfield, greyfield, or brownfield). (C) The project includes an erosion, sedimentation, and pollutant control plan for construction activities. 	 (B) Do not exceed rate or quantity of runoff for the 2-year 24-hour rainfall event relative to the existing condition (greenfield, greyfield, or brownfield). (C) The project includes an 	(B) Do not exceed rate or quantity of runoff for the 2- and 5- year 24-hour rainfall event relative to the existing condition (greenfield, greyfield, or brownfield).	(B) Do not exceed rate or quantity of runoff for the 2-, 5-, and 10-year 24-hour rainfall event relative to the existing condition (greenfield, greyfield, or brownfield).	(B) Do not exceed rate or quantity of runoff for the 2- , 5-, 10-, 25-, and 50-year 24-hour rainfall event relative to the existing condition (greenfield, greyfield, or brownfield).	(B) Do not exceed rate or quantity of runoff for the 2-, 5-, 10-, 25-, 50-, and 100-year 24-hour rainfall event relative to the existing condition (greenfield, greyfield, or brownfield).	
(D) The project	(-)				(D) The project	

(D) The project manages or treats stormwater from other sites according to criterion A, OR returns the site to a predevelopment hydrological condition.





- A. To what extent does the project infiltrate, evapotranspirate, reuse, and/or treat stormwater on site?
 - 1. Project documentation (e.g. rainwater system sizing, milling tanks, etc.)
 - 2. Layout of drainage and related calculation report
- B. To what extent does the completed project limit rate or quantity of runoff compared to existing conditions?
 - 1. Project documentation (e.g. rainwater system sizing, milling tanks, etc.)
 - 2. Layout of drainage and related calculation report
- C. Does the project include an erosion, sedimentation, and pollution control plan for all construction activities?
 - 1. Site plan for construction and erosion and sedimentation control (if present)
 - 2. Environmental Specifications
 - 3. Instructions for the operational management of construction sites and related monitoring check-lists
- D. Does the project treat stormwater from other sites or does it function as part of a larger stormwater management plan?
 - 1. Analysis of potable water consumption for industrial use and any plant projects to collect and use rainwater.





NW 2.3 REDUCE PESTICIDE AND FERTILIZER IMPACTS

This credit intends to enhance the design choices aimed at reducing the use of pesticides and fertilizers through the choice of suitable plant species.

This credit applies to mitigation or compensatory landscaping, when anticipated.

INTENT	To reduce improper sources of pollution by reducing the amount, toxicity, bioavailability and persistence of pesticides and fertilisers.
METRICS	Reduction of the amount, toxicity, bioavailability and persistence of pesticides and fertilisers used on site, selection of plant species and adoption of integrated control techniques.
APPLICABILITY	This credit is applicable when landscaping is expected, as compensatory or mitigating work. If the project assessed does not include the presence of green areas, this credit can be considered to be not applicable with adequate supporting documentation.

	LE	VELS OF ACHIEVEN	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Application	Less Pesticide Or	Better Selection,	No Pesticide Or Fertilizer	Pesticide Or Fertilizer
Management	Fertilizer	Lower Use	Use	Elimination
A + B	A + B + C	A + B + C + D	С	С
POINTS: 1	POINTS: 2	POINTS: 5	POINTS: 9	POINTS: 12
 (A) Operational policies and programs are designed to control the application of pesticides and fertilizers so they are not over-applied. (B) Runoff controls are put in place to minimize contamination of groundwater and surface water 				
	(C) Landscaping is designed as the species that require fewer pesticides.	gned to incorporate plant er fertilizers and	(C) Landscaping is designed with plant species that do not require pesticides or fertilizers.	(C) Landscaping is designed with plant species that do not require pesticides or fertilizers. This includes eliminating the need for pesticides and/or fertilizers on sites with prior use of pesticides or fertilizers.
		(D) When needed, pesticides and fertilizers with low toxicity, persistence, and/or bioavailability are specified.		





A. Have operational policies and programs been put in place to control the application of fertilizers and pesticides?

- 1. Restoration projects using seeding activities, related cultivation measures, when anticipated, performed with the instructions in the Environmental Specification (CAPAMB) in the contract or specific techniques showing the reduced use of fertilisers and pesticides, or that contain a low content of persistent substances that do not contribute to bioaccumulation.
- 2. With respect to specific authorisation directives, which often require coordination of restoration projects with related offices, planting trees, shrubbery and bushes (new planting) or the relocation of native species.

B. Have runoff controls been put in place to minimize contamination of groundwater and surface water?

- 1. If fertilisers or pesticides are used, project plans (layout plans or drawings) related to the irrigation and runoff system or water or rainwater stabilisation to remove any groundwater
- 2. Assessment of the risks related to the work activities and measures to prevent any contamination of the environmental matrices

C. To what extent has the project team designed landscaping to require fewer pesticides and fertilizers?

- 1. Use of species that do not require the use of fertilisers or pesticides, or use of treatments or technical alternatives (e.g. mulching fabric, selection of native plants)
- 2. Projects to replace vegetation that needs fertilisers and pesticides with other plant species that do not require the use of fertilisers and pesticides (for the Restorative level)

D. To what extent has the project team selected pesticides and fertilizers that have lower toxicity, persistence, and bioavailability?

- 1. Technical and safety data sheets for the mixture of fertilisers and pesticides used or information related to their content of toxic substances, persistent substances and their bioavailability.
- 2. Assessment of the risks related to the work activities and measures to prevent any contamination of the environmental matrices





NW 2.4 PROTECT SURFACE AND GROUNDWATER QUALITY

This credit is intended to enhance the project team's intent to prevent potential contamination of surface and groundwater, during both construction and operation, providing, where necessary, an environmental monitoring system as well as operating procedures in the event of accidental spills.

This credit is related to potential impacts during both construction and operation (in which case the credit is relevant only for stations with transformers present).

INTENT	To preserve water resources, avoiding the contamination of surface and groundwater and monitoring impacts during construction and operation.			
METRICS	Design solutions, plans and programs implemented to prevent and monitor the contamination of surface and groundwater during construction and operation.			
APPLICABILITY	This credit is always applicable to the construction phase. For the operation phase, the credit is applicable to structures with the potential to contaminate surface and/or groundwater, such as stations with transformers present.			

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
New Pathway Avoidance	Community Support	Risk Reduction	Public Reporting	Quality Improvement
A + B	A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F
POINTS: 2	POINTS: 5	POINTS: 9	POINTS: 14	POINTS: 20
(A) The project team determines potential impacts to surface water or groundwater quality, including temperature, during construction and operations.				
(B) The project includes spill and leak diversion systems, spill prevention plans, and cleanup. The project does not create new direct pathways for surface water and/or groundwater contamination such as:				
Direct runoff into karst terrain;				
 Untreated industrial or chemical discharge to unlined industrial ponds or lakes; 				

- reinjection water wells unless water is treated to secondary levels, or local regulations, whichever is more stringent;
- Chemical, byproduct, or fracking water, injection.

(C) Based on the types of impacts identified in criterion A, the project reduces the risk of quality degradation to surface water and/or groundwater. This should include water temperature.

(D) Adequate measures enable responsive surface water and/or groundwater quality monitoring and reporting mechanisms to provide the public with water quality data.

> (E) The project has actively eliminated at least one source of hazardous and/or potentially polluting substances or replaced them with nonhazardous or nonpolluting substances or materials.

> > (F) The project improves surface water and/or groundwater quality beyond existing conditions.





EVIDENCE AND DOCUMENTATION REQUIRED A. Has project team determined the potential for surface water and/or groundwater contamination during construction and operations? Documentation evaluating the project's potential impacts on the quality of the surface waters 1. and the groundwater (chemical/physical features), for example: Geological and hydrogeological studies; Environmental studies (pre-screening, preliminary environmental study, EIS, matrix of impact) 2. Assessment of the risks related to the work activities and measures to prevent any contamination of the environmental matrices B. Does the project include spill and leak prevention and response plans, and avoid creating new pathways for contamination during construction and operations? 1. CONSTRUCTION PHASE: Documentation declaring that the work does not have negative impacts on the quality of the water in the receiving water system: Terna's Environmental Specification for the preparation of all construction measures necessary to protect the environment; Procedure to manage any incidents and/or malfunctions (for example, accidental spills) for the construction and operations phase; Compliance with any authorisation-related directives from the responsible agencies: Contractual documents (e.g. construction site plan); SCP: Instructions for the operational management of construction sites and related monitoring check-lists; Assessment of the risks related to the work activities and measures to prevent any contamination of the environmental matrices (for example, plan to manage environmental impacts due to incidents and malfunctions). 2. OPERATIONS PHASE: Unified station design (e.g., indication of containment tanks for transformers); Assessment of the risks related to the work activities and measures to prevent any contamination of the environmental matrices C. To what extent does the project reduce the risk of surface water and/or groundwater quality degradation during construction and operations? 1. CONSTRUCTION PHASE: Documentation declaring that the work does not have negative impacts on the guality of the water in the receiving water system: Terna's Environmental Specification for the preparation of all construction measures necessary to protect the environment; Procedure to manage any incidents and/or malfunctions (for example, accidental spills) for the construction and operations phase; Compliance with any authorisation-related directives from the responsible agencies; Contractual documents (e.g. construction site plan); SCP: Instructions for the operational management of construction sites and related monitoring check-lists; Assessment of the risks related to the work activities and measures to prevent any contamination of the environmental matrices (for example, plan to manage environmental impacts due to incidents and malfunctions). 2. OPERATIONS PHASE: Unified station design (for example, indication of containment tanks for transformers);





- Assessment of the risks related to the work activities and measures to prevent any contamination of the environmental matrices
- D. Have adequate and responsive surface water and/or groundwater quality monitoring and reporting systems been incorporated into the project?
 - 1. Monitoring Programmes (EMPs)
 - 2. Instructions for the operational management of construction sites and related monitoring check-lists
- E. Has the project actively eliminated at least one source of hazardous and/or potentially polluting substances, or replaced them with nonhazardous or nonpolluting substances or materials?
 - 1. Project documentation and specific techniques for using biodegradable substances for drilling fluids
 - 2. Requirements for contractors: Terna's Environmental Specification to reduce the risk of pollution
- F. Does the project improve surface water and/or groundwater quality? (Criterion not pursued)





NW 3.1 ENHANCE FUNCTIONAL HABITATS

The electrical transmission infrastructure (whether overhead or underground) is by its very nature configured as a permeable obstacle for natural habitats: the infrastructure is, in fact, 'transparent' with respect to the ecological network, as it does not interrupt its connectivity.

The natural habitats of reference for this credit are land-based ones.

INTENT	To preserve and improve the functionality of terrestrial habitats.	
METRICS	Number of features of terrestrial habitats assessed in order to preserve or improve the net area and quality of the habitats.	
APPLICABILITY	In the event that there are no areas with natural habitats in any of the project alternatives considered, this credit can be considered not applicable with adequate supporting documentation.	

	LE	VELS OF ACHIEVEN	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Mitiaata Impaata	One Ecosystem	Two Ecosystem	Three Ecosystem	Restore And Create
Mitigate impacts	Function	Functions	Functions	Habitats
A + B	A + B + (C, D, or E)	A + B + (C, D, or E)	A + B + C + D + E	A + B + C + D + E + F
POINTS: 2	POINTS: 5	POINTS: 9	POINTS: 15	POINTS: 18
(A) The project team identif existing terrestrial habitats.	ies existing habitat types	on or near the project site. I	Efforts are made to avoid and	minimize impacts to
(B) Mitigation measures en criteria C, D, and E are mai occur on or adjacent to the avoidance, minimization, re	sure that existing habitat f ntained (i.e., not degraded site and follow a hierarchy storation, and compensat	unctions as defined in d or lost). Mitigation must / that prioritizes ion.	(B) The project ensures that disturbed or damaged.	no existing habitats are
	 (C, D, o E) Enhance one or more ecosystem functions compared to existing conditions: Quantity (C) Quality (D) Connectivity (E) 	 (C, D, o E) Enhance two or more ecosystem functions compared to existing conditions: Quantity (C) Quality (D) Connectivity (E) 	 (C, D, e E) Enhance all three compared to existing conditi Quantity (C) Quality (D) Connectivity (E) 	e ecosystem functions ons:
		•	•	(F) The project returns

(F) The project returns developed land to natural habitat or sets aside existing habitat for permanent conservation and protection.





- A. Has the project team identified existing terrestrial habitats and sited the project to minimize impact?
 - 1. Collection and analysis of the data available (Terna's map database) including data received through special Memoranda of Understanding for data exchanges with the regions and managers of protected areas
 - 2. SEA protocols with the regions
 - 3. Identification of the habitat (for example, on a map, asset sheet, bibliographic material or lists of assets)
 - 4. Layout plans on the interferences
 - 5. VINCA

B. Does the project mitigate all disturbances to functional terrestrial (land) habitats?

- 1. VINCA
- 2. EMP Monitoring during work of the disturbances anticipated in the EMP in order to verify that the thresholds of disturbances expected were not exceeded
- 3. Documentation on the mitigation measures to take to minimise the impacts, for example, those contained in the Ecological Impact Assessment (e.g.: Use of coloured plastic spirals or coloured urethane on HV cables to minimise any collisions in especially important areas for the ecological functioning of wild birds; preparation of physical barriers to limit the distribution of potential disturbances to the ecological functioning of the habitats of interest or those adjacent to the work in the project (e.g. acoustic barriers in expanded clay concrete placed near the plant)
- 4. Environmental Specification: restoration of the areas used for staging provisional work to the pre-construction conditions

C. Does the project increase the quantity of terrestrial habitat?

- 1. Streamlining or directives involving operations on habitats (for example, restoration of stable meadows downstream of the demolition of supports or for compensation)
- 2. Creation of small habitats near the bases of the supports in agricultural areas (for example, ISO 14001 Environmental Analysis)
- D. Does the project improve the quality of any existing or proposed new terrestrial habitat?
 - 1. Streamlining or directives involving operations on habitats (for example, restoration of stable meadows downstream of the demolition of supports or for compensation)
- E. Does the project facilitate movement between terrestrial habitats, provide new connections, or remove barriers, in order to improve habitat connectivity?
 - 1. Streamlining or directives involving habitat restoration operations
 - 2. EMP that monitors the re-stabilisation of environmental connectivity in the post-construction phase
- F. Does the project return developed land to natural habitat, or set aside existing habitat for permanent conservation and protection?
 - 1. Any environmental restoration work downstream of structure removal





NW 3.2 ENHANCE WETLAND AND SURFACE WATER FUNCTIONS

The electrical transmission infrastructure (whether overhead or underground) is by its very nature configured as a permeable obstacle for natural habitats: the infrastructure is, in fact, 'transparent' with respect to the ecological network, as it does not interrupt its connectivity.

The natural habitats of reference for this credit are aquatic ones.

INTENT	To maintain and restore the ecosystem functions of rivers, wetlands, bodies of water and the respective riparian areas.	
METRICS	Number of features kept and restored.	
APPLICABILITY	In the event that there are aquatic habitats in none of the project alternatives considered (wetlands or surface bodies of water), this credit can be considered not applicable with adequate supporting documentation.	

	LI	VELLI DI ACHIEVEM	IENT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Enhance One Ecosystem Function	Enhance Two Ecosystem Functions	Enhance Three Ecosystem Functions	Enhance Four Ecosystem Functions	Restore Ecosystem Function
A + B + (C, D, E o F)	A + B + (C, D, E o F)	A + B + (C, D, E o F)	A + B + C + D + E + F	A + B + C + D + E + F
PUNTI: 3	PUNTI: 7	PUNTI: 12	PUNTI: 18	PUNTI: 20
(A) Project team identifies p	project impacts to hydrolog	gic connection, water quality	y, aquatic habitat, and sedime	nt transport.
(B) Efforts are made to avoid surface water functions and Mitigation measures must n follow a hierarchy that priorid compensation.	id and minimize negative I to compensate for remain naintain net aquatic habita itizes avoidance, minimiza	impacts to wetland and ning unavoidable losses. at quality and quantity and ation, restoration, and	(B) The project ensures that surface water functions are a result of the project.	no existing wetlands or disturbed or damaged as
 (C, D, E O F) Actively protect one ecosystem function. Hydrologic Connection (C) Water Quality (D) Aquatic/Riparian Habitat (E) Sediment Transport/Sedimentatio n (F) 	 (C, D, E o F) Actively protect two ecosystem function. Hydrologic Connection (C) Water Quality (D) Aquatic/Riparian Habitat (E) Sediment Transport/Sediment ation (F) 	 (C, D, E o F) Actively protect three ecosystem function. Hydrologic Connection (C) Water Quality (D) Aquatic/Riparian Habitat (E) Sediment Transport/Sedimenta tion (F) 	 (C, D, E and F) Actively protect four ecosystem function. Hydrologic Connection (C) Water Quality (D) Aquatic/Riparian Habitat (E) Sediment Transport/Sedimentatio n (F) 	 (C, D, E and F) Actively protect one ecosystem function. Hydrologic Connection (C) Water Quality (D) Aquatic/Riparian Habitat (E) Sediment Transport/Sedimentat ion (F) In addition to protecting all existing wetland and surface water functions, the project can demonstrate it has restored at least one proviously degraded





A. Has the project team identified impacts to wetland and surface water functions?

LAND-BASED PROJECTS

- 1. Collection and analysis of the data available (Terna's map database) including data received through special Memoranda of Understanding for data exchanges with the regions and managers of protected areas
- 2. SEA protocols with the regions
- 3. Identification of habitats (e.g.: on maps, asset sheets, bibliographical material or lists of assets)
- 4. Layout plans on the interferences
- 5. VINCA and/or landscape report
- 6. Hydraulic compatibility report

MARINE PROJECTS

7. Report on cable placement and protection (under Ministerial Decree of 24 January 1996)

B. Does the project minimize and mitigate disturbance to wetland and surface water functions?

LAND-BASED PROJECTS

- 1. VINCA
- 2. EMP Monitoring during work of the disturbances anticipated in the EMP in order to verify that the thresholds of disturbances expected were not exceeded
- 3. Documentation on mitigation measures to be taken to minimise the impacts, for example, those contained in the Environmental Impact Assessment
- 4. Environmental Specification: restoration of the areas used for staging provisional work to the pre-construction conditions

MARINE PROJECTS

5. Report on cable placement and protection (under Ministerial Decree of 24 January 1996)

C. Does the project protect or restore hydrologic connection?

MARINE PROJECTS

- 1. Streamlining or directives
- 2. Report on cable placement and protection (under Ministerial Decree of 24 January 1996)

D. Does the project protect or restore water quality?

- 1. Environmental monitoring plan
- 2. Installation of water purification systems as needed

E. Does the project protect or restore aquatic habitat?

- 1. Operations to mitigate/compensate for the impacts (e.g. placement and protection technologies for underwater cables)
- 2. Environmental engineering operations to restore the shores of rivers

F. Does the project protect sediment transport and reduce sedimentation?

LAND-BASED PROJECTS

1. Operations deriving from Hydraulic Compatibility studies or any authorisation-related directives

MARINE PROJECTS

2. Report on cable placement and protection (under Ministerial Decree of 24 January 1996)

Note: For the Restorative level, assess any shore restoration/reimplanting operations deriving from directives.





EXAMPLE PROJECT:

THE OLD FOUNDATIONS ADAPTED FOR ROOSTING (2012)



Inside the parco Naturale Regione del Molentagius, the demolition project of the pylons inside the stretch of water linked to the landscape redevelopment provided for the non-disposal of the old foundations from the seabed that were used as a roost for flamingos (photo of 2012).





NW 3.3 MAINTAIN FLOODPLAIN FUNCTIONS

This credit is intended to identify sensitive territory through the study of areas sensitive to flooding. In the event of direct interference, the work should be sized/designed in such a way as to safeguard the natural hydrographic and hydrological conformation of the area of operation.

During the preliminary planning stage, a study should be performed to describe an exhaustive framework of the environment in which the layout will be developed; this study permits the precise description of the optimal layout and having all elements essential for preventing and limiting any interferences with any flooding areas at risk.

INTENT	To preserve the functionality of flooding areas to limit the development and the related impacts within them.
METRICS	Efforts taken to avoid flooding areas or to maintain the natural functionality of such areas.
APPLICABILITY	In the event that none of the project alternatives considered include supports or other structures in flooding areas, this credit can be considered to be not applicable with adequate supporting documentation.

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
75% Avoidance	85% Avoidance	95% Avoidance	Floodplain Preservation	Floodplain Restoration
A + B	A + B + C	A + B + C	(A + B + C) or D	A + B + C + E
POINTS: 1	POINTS: 3	POINTS: 7	POINTS: 11	POINTS: 14
(A) The project team identit	fies the 100-year or design	frequency floodplain. Cons	sideration is given to future flo	odplain scenarios.
 (B) The project site maintains a net quantity of at least 75% of natural/vegetated area within the floodplain. (B) The project site maintains a net quantity of at least 95% of natural/vegetated area within the floodplain. (B) The project site maintains a net quantity of at least 95% of natural/vegetated area within the floodplain. 				
(C) Project mitigates impacts to floodplain functions including conveyance and storage. Overall floodplain functions are not diminished as a result of the project. Functions should be maintained both above and below the 10-year flood.				
			OR	(E) Structures are

OR	(E) Structures are
(D)The project team can	removed from the
demonstrate the site was	floodplain, or previously
intentionally chosen to	developed areas are
avoid development on or	restored to
near the 100-year or	natural/vegetated zones
design frequency	in order to improve
floodplain.	floodplain functions.





- A. Has the project team identified the 100-year or design frequency floodplain in relation to the project location?
 - 1. Analysis of the constraints during the planning stage.
 - 2. Siting according to ERPA criteria to identify the areas most at risk
 - 3. Hydrogeological Asset Plan (HAP) used to plan and schedule the actions, operations and usage regulations regarding the defence of the territory from hydrogeological risk
 - 4. Hydrogeological report

B. To what extent does the project preserve vegetated zones within the floodplain?

- 1. Environmental documentation (EIS, VINCA or Hydraulic Compatibility Report)
- 2. Percentage calculation

C. Does the project mitigate impacts to floodplain functions?

- 1. Hydraulic compatibility report with the implementation of the instructions in the mitigation operations
- 2. Compliance with special directives such as environmental engineering operations

D. Was the project intentionally sited to avoid floodplains?

- 1. ERPA criteria
- 2. Project layout plan with hydrogeological asset plan (HAP)
- E. Does the project remove structures from the floodplain or return previously developed areas to a vegetated state?
 - 1. Retrofitting/restoration of the integrity of the expansion areas to protect potentially flooded areas
 - 2. Any streamlining with removal of existing structures





NW 3.4 CONTROL INVASIVE SPECIES

This criterion is intended to preserve the native species present in the territory and to contain the spread of invasive and alien species.

INTENT	Use appropriate non-invasive species and control or eliminate existing invasive species.
METRICS	Extent to which the invasive species have been reduced or eliminated
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Prevention	Assessment And Prevention	Program Controls	Minor Infestation Control	Major Infestation Control
A	A + B	A + B + C	A + B + C + D + E	A + B + C + D + E + F
POINTS: 1	POINTS: 2	POINTS: 6	POINTS: 9	POINTS: 12

(A) Best practices should be used to prevent unintentional introduction of known invasive species to the site.

Landscaping utilizes only species known to be noninvasive.

A construction management plan, or policies, includes provisions for preventing the introduction of invasive species (plant or animal).

(B) Identify, map and/or document invasive species infestations on site, or collaborate with local, state/provincial, and/or federal agencies.

(C) Establish and implement a program that controls minor infestations of invasive species on site before and throughout construction.

(D) The project guards against future infestations by supporting the establishment of native and/or noninvasive species.

(E) Long-term controls are in place through a minimum three-year management plan to prevent the introduction or reintroduction of invasive species and perform follow-up control actions if populations persist.

(F) Additionally, the project implements similar programs for controlling major infestations on site, or aquatic invasive species.





EVIDENCE AND DOCUMENTATION REQUIRED A. Does the project avoid introducing invasive species to the site? 1. Technical specifications for environmental restoration 2. Re-use of the same land within the site to avoid introducing new invasive species B. Has the project team conducted a site assessment to determine if invasive species are present? 1. VINCA 2. Dedicated studies if there are specific instructions (site inspections and vegetation surveys) C. Does the project implement controls for existing infestations of invasive species before, during and post-construction? 1. Environmental Monitoring Plans 2. Directives related to operations to remove the invasives in the construction areas 3. Timeline specification on cutting the plants and handling the cut materials (based on any directives) 4. Measures to reduce seed distribution of invasive species during soil movements D. Does the project guard against future infestations by supporting the establishment of native and/or noninvasive species? 1. Restoration operations in which native species are used 2. Use of mulching fabric (see criterion A)

- E. Does the project provide long-term controls to prevent the reintroduction of invasive species?
 - 1. Environmental Monitoring Plans
 - 2. Monitoring during the rooting stage (3-5 years)
- F. Does the project include the ongoing control, suppression, or containment of major infestations of invasive species after construction?
 - 1. Cutting invasive species in compliance with directives





NW 3.5 PROTECT SOIL HEALTH

This criterion is intended to enhance the anticipated actions to preserve vegetative soil. Preservation can take place through systems for maintaining the pedological features of the soil, aimed at restoring the original conditions after the work.

INTENT
METRICS
APPLICABILITY

To preserve the composition, structure and function of the soils present at the site.

The degree to which the disturbance to the soil was minimised and restored.

Applicable

LEVELS OF ACHIEVEMENT					
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE	
(Not Available)	Restore Soils	Special Feature Plan	Best Management Practices	Soil Restoration	
	A + B	A + B + C	A + B + C	A + B + C + D	
	POINTS: 3	POINTS: 4	POINTS: 6	POINTS: 8	
	(A) The project limits the	e area that is disturbed by d	levelopment activities.		
	(B) 100% of post-constru- soil type, structure, and	uction vegetated areas dist function to support healthy	urbed during construction are plant and tree growth.	restored for appropriate	
		(C) A soil protection plan, or policies, are prepared and implemented. The plan/policies specifically include any special landscape features.	(C) A soil protection plan, or policies, are prepared and implemented. The plan/policies specifically include any special landscape features. The plan is expanded to comply with best management practices from a local soil conservation agency or is reviewed or prepared under the guidance of a certified soil scientist.		
				(D) All areas disturbed by previous development and planned as vegetated areas have been restored for appropriate soil type, structure, and function to support plant and tree growth.	





- A. Has the project team limited the area that is disturbed by development activities?
 - 1. Environmental documentation (EIS, VINCA or landscaping, forestry report or report on temporary transformation of scrub lands)
- B. Have vegetated areas disturbed by development activities been restored for appropriate soil type, structure, and function to support healthy plant and tree growth?
 - 1. Vegetation restoration projects
 - 2. Techniques for re-using excavated soil and rocks that allow the fertile topsoil to be re-used to restore the areas
- C. Has the project team implemented a soil protection plan or policies?
 - 1. Environmental specification and operations to protect the soil
 - 2. Environmental Monitoring Plans
- D. Has the project restored appropriate soil type, structure, and function to vegetated areas disturbed by previous development?
 - 1. Any environmental restoration work downstream of structure removal (for example, streamlining)





NW 0.0 INNOVATE OR EXCEED CREDIT REQUIREMENTS

This credit allows an evaluation of innovative elements characteristic of the project that go beyond expectations in other credits in the category.

The related credit scores are not included in the total applicable points and, therefore, qualify as bonus scores.

INTENT

To reward outstanding performance beyond system expectations and the application of innovative methods that promote state-of-the-art sustainable infrastructure.

METRICS

The project's sustainability performance qualifies as innovation or exceptional performance or is not otherwise recognised in the existing credits.

LEVELS OF ACHIEVEMENT			
INNOVATION			
Innovate or Exceed Credit Requirement			
A or B or C			
POINTS: MAX 10			
(A) Implement innovative methods, technologies, or processes that are novel either in their use, application, or within the local regulatory or cultural context.			
 (B) Implement measures that exceed the highest existing requirements within one or more Natural World credits. OR 			

(C) Address additional aspects of sustainability not currently recognized in Envision

EVIDENCE AND DOCUMENTATION REQUIRED

- A. To what extent does the project implement innovative methods, technologies, or processes that overcome significant problems, barriers or limitations, or create scalable and transferable solutions?
 - 1. Documentation highlighting the application of innovative technical methods or solutions.
- B. To what extent does the project exceed the highest levels of achievement for a given credit?
 - 1. Documentation highlighting the fulfilment of the requisites required for the maximum achievement level of a credit in the *Natural World* category
- C. To what extent does the project address a sustainability aspect that is not currently addressed by the Envision system?
 - 1. Documentation highlighting how the project addresses a sustainability concern pertaining to the *Natural World* category, not currently evaluated by the other credits in the category.





Climate and Resilience

CR 1.1 REDUCE NET EMBODIED CARBON

This criterion assesses the reduction of net embodied carbon (measured in tonnes of CO₂) of the materials used for the infrastructure construction phase and during the operations of the infrastructure (meaning what was used for maintenance, restoration, etc. work). The objective is to reduce the impact due to the extraction, processing, production and transport of materials and the replacement, repair or restoration of those materials during all stages of the project.

This criterion is applicable to all projects that include the use or the consumption of physical materials during the construction and operation of the project.

To be able to make this assessment, Terna will consider as a point of reference (or in the determination of the baseline) the existing LCA studies involving overhead lines and underground lines of 380kV and 150kV².

In line with the objective established in the document 'Sustainability Actions and KPIs for the 2019-2023 Strategic Plan', a tool is being created to assess the environmental footprint of Terna's projects. It will therefore be possible to use the tool to perform LCA assessments of any new project.

The LCA analysis allows the estimation of greenhouse gases due to the extraction, production and processing, transport and replacement, repair or restoration of the materials to be used during construction and operations, during the maintenance and management of the project, for purposes of calculating the net embodied carbon required by the credit.

For the construction of electrical infrastructure, the primary materials to be considered are:					
Overhead line	Cable line	Electrical stations			
Aluminium or copper for	Aluminium or copper for	Concrete			
conductors	conductors	Steel for reinforcement and			
Steel for supports Steel for	Steel for reinforcement and	building work			
reinforcement and building work	building work	Bituminous conglomerate			
Concrete/cement	Concrete/cement	Copper			
Wood for packaging	Wood for packaging				

Bituminous conglomerate

HDPE

For the construction of electrical infrastructure, the primary materials to be considered are:

The above list of materials is to be considered as examples and not exhaustive and it could change based on the actual work to be implemented.

SF6

Aluminium

Glass for insulators

² 2018 Sustainability Report and previous editions back to 2013





INTENT	To reduce any impact related to the extraction, processing/production and transport of materials throughout the useful life of the project.
METRICS	Percentage of reduction of the net embodied carbon of the materials.
APPLICABILITY	Applicable.
BENCHMARK	The percentage of CO ₂ reduction can be calculated by referring to standard values for electrical lines and stations deriving from existing LCA studies or from the tool. For replacement or extraordinary maintenance operations on existing infrastructure, the percentage of reduction can refer to the comparison with the actual status of the project.

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
At Least 5% Reduction	At Least 15% Reduction	At Least 30% Reduction	At Least 50% Reduction	
A + B + C	A + B + C	A + B + C	A + B + C	
POINTS: 5	POINTS: 10	POINTS: 15	POINTS: 20	
(A) The project team identit The team determines which	ies primary materials to be u n materials are the primary co	sed on the project during co ontributors to net embodied o	nstruction and operation. carbon (collectively >80%).	
(B) Embodied carbon is cal criterion A. Calculations inc	culated, or acquired by a vali	idated source, for the primar	y materials identified in	
Embodied carbor Embodied carbor				
The replacement	. repair. or refurbishment of r	naterials over the life of the	project.	
(C) The project team demonstrates at least a 5% reduction in total embodied carbon of materials over the life of the project compared to the baseline. Calculations should be in tons CO ₂ .	(C) The project team demonstrates at least a 15% reduction in total embodied carbon of materials over the life of the project compared to the baseline. Calculations should be in tons CO ₂	(C) The project team demonstrates at least a 30% reduction in total embodied carbon of materials over the life of the project compared to the baseline. Calculations should be in tons CO ₂	(C) The project team demonstrates at least a 50% reduction in total embodied carbon of materials over the life of the project compared to the baseline. Calculations should be in tons CO ₂ .	





	EVIDENCE AND DOCUMENTATION REQUIRED
Α.	Has the project team determined materials that are the primary contributors to embodied carbon for the project during construction and operation?
	 In the analysis performed using specific studies or tools, consider the totality of the materials in the entire life cycle of the work. This allows the components to be highlighted (and consequently the materials) that make the most contribution to the project's embodied carbon. (These materials must contribute at least 80% to the project's net embodied carbon total).
В.	Has the project team calculated the primary contributors to overall embodied carbon?
	1. The project's LCA with identification of the materials that contribute to the project's net embodied
	2. Calculation of the project's net embodied carbon in tonnes of CO_2
C.	To what extent does the project reduce the net embodied carbon of materials used in construction and operation?
	 The chosen baseline LCA study of reference Comparison of the project's LCA and the baseline LCA with identification of the CO₂ reduction and related calculation of the percentage Documentation showing the design efforts and strategies used to incentivise the reduction of CO₂ emissions during construction, installation and operation of the infrastructure For example:
	 Presence of product EPD, national and international existing databases related to the sourcing of materials;
	 Contractual specifications for the contractor;
	 Any addition during the tender phase of minimum environmental criteria (MECs) for the awarding of low environmental impact assets;
	 Any addition of a premium score during the tender phase for equipment with reduced environmental impact





CR 1.2 REDUCE GREENHOUSE GAS EMISSIONS

This credit regards the emissions of greenhouse gases during operations and assesses the project's contribution to reducing the impacts in fighting climate change.

This credit is applicable to all projects that consume energy or fossil fuels or that alternatively produce greenhouse gases during operations.

Terna strives in each of its Development Plans to reduce CO_2 in the national system, for example with network attenuation by designing lines that transport renewable energy sources towards the areas where there is the most consumption.

Below are the possible activities falling under this credit:

- Electricity consumption associated with the functioning of the electrical transmission network;
- Small amounts of fuel used during the operation of electricity generation units;
- Losses of SF6, gas monitoring and reduction of losses;
- Global effect of reduction of greenhouse gases deriving from the connection to the national network of plants from renewable sources.

The reduction is expressed in terms of tonnes of CO₂ equivalents (CO₂eq).

INTENT	To reduce emissions of greenhouse gases during the operations phase of the project, reducing its contribution to climate change.
METRICS	Percentage of reduction of greenhouse gas emissions during operations.
APPLICABILITY	Applicable
BENCHMARK	The percentage of CO ₂ eq reduction can be calculated by referring to standard values for electrical lines and stations deriving from existing LCA studies or from tools. For replacement or extraordinary maintenance operations on existing infrastructure, the percentage of reduction can refer to the comparison with the actual status of the project.

LEVELS OF ACHIEVEMENT					
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE	
At Least 10% Reduction	At Least 25%	At Least 50%	100% Reduction	Carbon Negative	
	Reduction	Reduction	10070110000000	Calgon Hogaire	
A + B	A + B	A + B	A + B	A + B	
POINTS: 8	POINTS: 13	POINTS: 18	POINTS: 22	POINTS: 26	
(A) The project team demonstrates at least a 10% reduction in total CO2e over the operational life of the project compared to the baseline. Calculations should be in tons CO2e.	(A) The project team demonstrates at least a 25% reduction in total CO2e over the operational life of the project compared to the baseline. Calculations should be in tons CO2e.	(A) The project team demonstrates at least a 50% reduction in total CO2e over the operational life of the project compared to the baseline. Calculations should be in tons CO2e.	(A) The project team demonstrates at least a 100% reduction in total CO2e over the operational life of the project compared to the baseline. Calculations should be in tons CO2e.	(A) The completed project is carbon negative (i.e., sequesters/removes more CO2e than it produces over the operational life).	
(B) The project team maps and calculates the total annual greenhouse gas emissions of the final project design for reporting purposes. This includes direct and indirect greenhouse gas emissions and seguestration associated with project operations. Calculations must be in CO2e.					





EVIDENCE AND DOCUMENTATION REQUIRED Α. To what extent does the project reduce greenhouse gas emissions during its operational life? 1. Calculation of the baseline greenhouse gas emissions of reference (the baseline greenhouse gas emissions must be calculated in relation to the period equivalent to the one during the operations phase of the project assessed) The calculation must be done in tonnes of CO₂eq. 2. Calculation of the project's greenhouse gas emissions (in tonnes of CO₂eq) through the use of tools applied to the project 3. The benefit of a development operation in terms of reduction of CO₂ is related to: The resolution of intrazonal or interzonal network congestion, with the consequent attenuation of a larger production by plants with renewable sources or by more efficient intrazonal thermoelectrical plants (increase in the transport capacity on critical sections of the VHV or HV network within one market area); The reduction of network losses corresponding to a smaller production of energy from conventional sources. The development of the benefit should be determined as set forth in the methodology document for the cost/benefit analysis annexed to the Development Plan. Calculation of the reductions in CO₂ emissions and with respect to the established baseline 4. 5. Other strategies such as the choice of contracting firms and plant maintenance displaced from the territory as part of the project's operations, for the reduction of the displacement B. Has the project team calculated and reported the annual greenhouse gas emissions of the project? Calculation of the project's annual greenhouse gas emissions using tools during the operations 1 phase the tool must list all the possible sources of emissions related to the project.





CR 1.3 REDUCE AIR POLLUTANT EMISSIONS

This criterion aims to enhance the activities that can contribute to reducing emissions into the atmosphere, and the related monitoring and control systems.

Electrical infrastructures do not in themselves generate atmospheric emissions during their operations. Under extraordinary conditions (breakdown or extraordinary maintenance), the operation of vehicles or helicopters or the activation of electricity generating units may be required. In any case, these are occasional emissions, limited in time, of a small extent or not able to be estimated. Electricity generation units as well as vehicles and helicopters are, in any case, subject to regular review.

According to the information above, this credit can be considered to be not applicable, while preparing suitable supporting documentation for certification purposes.

INTENT	To reduce emissions of air pollutants: particulates (including dust), tropospheric ozone, carbon monoxide, sulphur oxides, nitrogen oxides, lead and volatile organic compounds.
METRICS	Reduction of air pollutants with respect to a baseline.
APPLICABILITY	Not applicable
BENCHMARK	/

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Exceeding Requirements	Ongoing Monitoring	VOC Minimization	Air Pollutant Elimination	Air Quality Improvement
A + B	A + B + C	A + B + C + D	A + B + C + D	A + B + C + D + E
POINTS: 2	POINTS: 4	POINTS: 9	POINTS: 14	POINTS: 18
(A) The project meets all ap	oplicable air quality standards	s and regulations for air pollu	itants.	
(B) The project implements strategies to reduce air pollutant emissions during operations.	(B) The project reduces emissions through the use of best available control systems or best management practices.	(B) Air pollution controls are within the 95th percentile, or represent the lowest levels possible compared to projects of similar type.	(B) The project eliminates air pollutant sources in the design, chooses a non-polluting alternative, or achieves at least a 98% net reduction in air pollution emissions compared to the baseline.	
(C) Systems are in place for the ongoing monitoring of any direct sources of air pollution. Processes are in place to identify and address changes in emissions in order to maintain performance targets.				
(D) The project team assesses whether volatile organic compounds harmful to human health are material to the project and, if so, implement strategies to reduce their use during construction and/or within occupied spaces of the completed project.				

(E) The project includes the direct removal of previously existing air pollutant sources, or captures and safely stores/disposes of air pollutants for a net positive impact.





EVIDENCE AND DOCUMENTATION REQUIRED A. Does the project meet all relevant minimum air quality standards and regulations? Not applicable B. To what extent does the project reduce air pollutant emissions during operations? Not applicable C. Does the project include the ongoing monitoring and management of direct air pollutant emissions? Not applicable D. Has the project team assessed the materiality of volatile organic compounds to the health of construction workers and the project operators? Not applicable E. Does the project remove existing air pollutant sources? Not applicable D. Host applicable

- 1. Documentation of the specific project stating the absence or negligibility of the polluting emissions into the atmosphere during operations, compared to the scale of the project.
- 2. Further supporting documentation





CR 2.1 AVOID UNSUITABLE DEVELOPMENT

This credit aims to reduce or avoid the siting of infrastructural work in areas subject to risks of various natures, including in particular hydrogeological risks (landslides, flood zones, areas near the coast, etc.).

In identifying the areas in which to develop its electrical transmission projects, Terna adopts a strategy that includes a preliminary assessment of the sites through the introduction of some criteria for the exclusion of areas subject to risk, including by means of support from geographic information systems (GIS).

INTENT	To minimise or avoid development on sites subject to risk.
METRICS	The degree to which the project was established and/or sited to avoid or mitigate the risks related to that site.
APPLICABILITY	Applicable

	LE	VELS OF ACHIEVEME	INT		
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE	
Alternative Assessment	Risk Mitigation	Lowest Risk Alternative	Unsuitable Development Avoided	Strategic Retreat	
A + B	A + B + C	A + B + C + D	A + B + C + E	A + B + C + F	
POINTS: 3	POINTS: 6	POINTS: 8	POINTS: 12	POINTS: 16	
 (b) Earling preating project to the project to exacerbate the hazard (e.g., creating impervious surfaces in a floodplain, building on potentially unstable hillsides). Potentially adverse sites include but are not limited to: Steep slopes (> 20 degrees) Permafrost Adverse geology (e.g., risk of liquefaction, subsidence, or sinkholes) Flood-prone areas At-risk coastline (coastal surges, coastal erosion). (B) The project team assesses siting alternatives that avoid or minimize hazard exposure and/or project alternatives less vulnerable to, or likely to exacerbate site bazards 					
	(C) The project includes specific strategies to mitigate the impact of site hazards on the project (e.g., elevating structures and equipment above flood levels), as well as the project development impacts on the site hazard (e.g., elevating structures and equipment above flood levels). This may include manifering and reasoned plane.				
		(D) Based on alternatives identified in criterion C, the project team can demonstrate the selected project and site resulting in the lowest exposure to site risk while still meeting project objectives and requirements.	(E) The project is intentionally sited to completely avoid site hazards.	(F) The project intentionally modifies or removes existing structures from areas prone to frequent damage and/or at high risk of future damage in order to prevent losses.	




- A. Has the project team identified potential siting hazards, the vulnerability of the project to the hazard, and the potential for the project to exacerbate the hazard?
 - 1. Analysis of the constraints (landslides/flooding areas) during the planning phase
 - 2. Consultation of maps of all the areas at risk in its own territorial databases (for example, of maps)
 - 3. Consultation of the computer archive of monitoring the stability of hillsides in the areas involved with existing lines (for planning and construction in areas surrounding existing projects)
- B. Can the project team demonstrate that siting and project alternatives were seriously considered in order to minimize exposure to risk?
 - 1. In the identification of alternatives to siting the infrastructure, the first step is setting the project assumptions in GIS (for example, ERPA criteria).
 - 2. Cartographic maps for siting the operation
 - 3. Maps of the constraints and the geological and hydrogeological risks
 - 4. Geological report and further related project documentation

C. Has the project team implemented strategies to mitigate the impact of site hazards?

1. Documentation related to project choices implemented to minimise risk (for example, work to strengthen hillsides, special foundations, addition and choice of the location of supports, etc.)

D. Can the project team demonstrate that the chosen project and site resulted in the lowest exposure to site hazards while still meeting project requirements?

- 1. The choice of project alternatives that considers the presence of areas at risk
- 2. Environmental impact study with analysis of the alternatives
- 3. Geological report or other documentation
- 4. Project planning aimed at showing that the project and the site chosen are the lowest exposure to risk for the work

E. Was the site chosen to intentionally avoid known site hazards?

- 1. The choice of project alternatives considers the presence of areas at risk, which are excluded (for example, EIS).
- 2. Project cartography
- 3. Environmental impact study with analysis of the alternatives or possibly a geological study
- 4. Project planning aimed at demonstrating that the choice of the site was intentional in relation to the various possible alternatives
- F. Does the project remove or modify structures subject to frequent damage?
 - 1. Projects for the replacement of work subject to risk (for example, earthquakes)





CR 2.2 ASSESS CLIMATE CHANGE VULNERABILITY

This criterion requires a prior assessment of the adaptability of the infrastructure to long-term climate change and the definition of any adaptation measures based on, for example, known climate changes (increased temperatures, increased precipitation, extreme climatic events, higher sea levels).

These events may cause breakdowns in the electrical network and supply interruptions. In particular:

- Long periods of drought increase the likelihood of surface discharge due to the increase of polluting deposits;
- Heavy snows, floods, landslides, whirlwinds and strong winds can cause the collapse of the supports or structural settling;
- The formation of accumulations of snow on the lines creates potential short circuits or structural settling due to overload.

Starting in 2015, ARERA, in Resolution 653/2015/R/eel, asked network managers to prepare a work plan aimed at the adoption of regulatory measures to increase the resilience of the electrical system. Because of this resolution, a special technical forum was instituted with participation by ARERA, CEI (Comitato Elettrotecnico Italian), Terna and managers of the distribution network, for the purpose of identifying a suitable indicator for resilience.

The results of the work of the Technical Forum were included in the Decision of 7 March 2017, no. 2/2017, containing the first part of the guidelines for the presentation of work plans to increase resilience. Pursuant to these guidelines: 'Terna and every distribution business that serves more than 50,000 users are sending the Authority a work plan aimed at the adoption of regulatory measures to increase the resilience of the electrical system (Resilience Plans, for short).

In this context, Terna is developing a new methodology for assessing operations aimed at increasing the resilience of the national transmission network, including in light of the increased frequency of especially intense weather events due to climate change.

This methodology will allow an extremely accurate identification of the areas in the territory that, with the greatest probability, may be struck in future by adverse weather phenomena and thus to assess the risk continuing in these areas to which the electrical transmission network is subject.

INTENT	To conduct an overall assessment of vulnerability to climate change.
METRICS	Extent and completeness of the assessment of vulnerability to climate change
APPLICABILITY	Applicable





	LE	VELS OF ACHIEVEME	INT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Project Vulnerability	System Vulnerability	Community Vulnerability	Knowledge Sharing	
A + B	A + B + C	A + B + C + D	A + B + C + D + E	
POINTS: 8	POINTS: 14	POINTS: 18	POINTS: 20	
 POINTS: 8 (A) The project team conduassessment, due to climate Duration: acutes Extent of effects: community wide The assessment should active threats/hazards. (B) The project team detern operational life due to climate continue to meet performane weather patterns, natural hereits and the patterns and the pattern	 POINTS: 14 ucts, or relies on, an existing, a change. Threats/hazards are shocks over hours and days, of project site (e.g., localized st (e.g., changes in climate). count for climate change's immines vulnerabilities and increate change-related threats. The goals over the life of the pazard frequency and intensity (C) The project team detern connected/related infrastru threats. This should include how prhow system vulnerabilities indirect impacts such as residued infrastru threats. 	POINTS: 18 comprehensive threat/hazar e classified by: or chronic stressors over yea cornwater overflow), infrastru- pact on the frequency, durat eased risk to the project, or p his should include whether corroject under changing opera (). mines vulnerabilities and inc cture system or network due oject vulnerabilities may imp may impact the project. This source and service availabili (D) The project team deter increased risk to the broad change threats. This should include how pri impact the broader commu- vulnerabilities may impact	POINTS: 20 Id identification study, or ars and decades. ucture system wide, or tion, and severity of performance, over its urrent design variables will ating conditions (i.e., climate, reased risk to the e to climate change-related act system performance and e should include direct and ty. mines vulnerabilities and ler community due to climate roject vulnerabilities may unity and how community the project. (E) The project team or owner shares climate threat findings in order to support and facilitate community awareness and their inclusion in future projects	





A. Has the project team determined climate change threats to the project and its surroundings?

- 1. Environmental impact study.
- 2. Environmental report.
- 3. To assess the operations in its DP, Terna considers the effects of climate change by mapping climate projections of the most relevant threats to the NTN (such as wind mapping, areas with common lightning strikes, ice accumulations, etc.).

B. Has the project team determined the vulnerability of the project to climate change threats?

- 1. Environmental impact study.
- Environmental report.
 The vulnerability of the project is related to the mapping of climate projections on the estimated threat and the vulnerability of the components of the line to direct and indirect stresses and is represented by the return time (RT) parameter for the lines and primary substations (PSs) in the area of interest to the project and in the pre- and post-operation conditions. The calculation methods will be established in the new methodology document.
- C. Has the project team determined the vulnerability of the infrastructure system to climate change threats?
 - 1. The vulnerability of the network is related to the mapping of the climate projections of the threat examined and to the vulnerability of the line to direct and indirect stresses and is represented by the return time (RT) parameter for the lines and primary substations (PSs) on the NTN under pre- and post-operation conditions. The calculation methods will be established in the new methodology document.

D. Has the project team determined the vulnerability of the community to climate change threats?

- 1. The community's vulnerability to the threats is assessed in terms of Expected Energy Not Supplied (EENS) below the primary substations.
- 2. Additional indicators, when present

E. Has the project team or owner shared their climate threat findings?

The new methodology for resilience, once the approval process has been completed by 1. ARERA, will be based on the new plan for operations to increase resilience.





CR 2.3 EVALUATE RISK AND RESILIENCE

This credit requires that an assessment be done on all potential risks, both those related to shortterm exceptional events, called 'acute shocks', (for example, whirlwinds, earthquakes, fires, floods, acts of terrorism, infrastructure collapse, etc.) and those related to changes connected to the passage of time and thus long term, called 'chronic stressors' (such as a higher sea level, the extinction of species, an increase in pollution or contaminants, the aging of the infrastructure, the shortage of funding, etc.) so as to increase the project's resilience and durability.

Terna plans its infrastructure based on the work's useful life span, considering all potential risks and implementing appropriate planning strategies to safeguard the infrastructure and the community.

Terna also evaluates various emerging scenarios due to endogenous and exogenous causes connected to its infrastructure in relation to various consequent risks (e.g. risks in terms of the service's safety, in terms of potential related environmental impacts) and prevents their occurrence.

Regarding climate risks, starting in 2015, ARERA, through Resolution 653/2015/R/eel, asked network managers to prepare a work plan aimed at the adoption of regulatory measures to increase the resilience of the electrical system. Because of this resolution, a special technical forum was instituted with participation by ARERA, CEI (Comitato Elettrotecnico Italiano), Terna and managers of the distribution network, with the purpose of identifying a suitable indicator for resilience.

The results of the work of the Technical Forum were included in the Decision of 7 March 2017, no. 2/2017, containing the first part of the guidelines for the presentation of work plans to increase resilience. Pursuant to these guidelines: 'Terna and every distribution business that serves more than 50,000 users are sending the Authority a work plan aimed at the adoption of regulatory measures to increase the resilience of the electrical system' (Resilience Plans, for short).

In this context, Terna is developing a new methodology for assessing operations aimed at increasing the resilience of the national transmission network, including in light of the increased frequency of especially intense weather events due to climate change.

This methodology will allow an extremely accurate identification of the areas in the territory that, with the greatest probability, may be struck in future by adverse weather phenomena and thus to assess the risk continuing in these areas to which the electrical transmission network is subject.

Regarding the risks of sabotage and attacks by third parties, Terna monitors and controls the safety of the network and the stations through a 'Security Operations Center' (SOC) that monitors in real time the ranges of risk to which the company is exposed (for example, risks of burglary, theft and damage to plants) to ensure the continuity of the electrical system. The physical security of the stations is guaranteed by a monitoring and video surveillance system that runs constantly for 24 hours every day and, in the event of a high alert level, also includes staffing by the army, as they are considered strategic infrastructure.

Terna has also developed the PSIS surveillance platform (Integrated Safety System for Terna stations) that can allow a dedicated surveillance centre, the Security Operations Center, constant observation of the intrusion alarms and video signals at 184 plants.

INTENT	To perform an overall assessment of risks and resilience.
METRICS	The scope and completeness of the overall assessment of risks and resilience.
APPLICABILITY	Applicable





LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Project Evaluation	System Evaluation	Community Evaluation	Integrated and Inclusive Approach	
A + B + C + D + E	A + B + C + D + E	A + B + C + D + E	A + B + C + D + E + F	
POINTS: 11	POINTS: 18	POINTS: 24	POINTS: 26	
A) The project team draws the assessment boundary for subsequent criteria (B, C, D, and E) around the project and its site.	(A) The project team draws the assessment boundary for subsequent criteria (B, C, D, and E) around the interdependencies of the project and its associated/connected infrastructure system/network.	(A) The project team draw for subsequent criteria (B, interdependencies of the p associated/connected infra and the broader communit	s the assessment boundary C, D, and E) around the project, its astructure system/network, y.	
 (B) Understand the Asset: The project team identifies the objectives and performance goals of the project and related systems. It also identifies the critical assets, systems, and networks that are essential to meeting objectives and performance goals. This should include the associated dependencies and interdependencies within the system. (C) Identify Threats/Hazards: The project team identifies threats/hazards (natural hazards and human-induced threats). Project teams may reference existing studies or assessments if relevant to the project and its context. 				
(D) Identify Vulnerability: The project team identifies the vulnerabilities of the critical functions and dependencies of the infrastructure asset and its primary components identified in criterion B to the threats/hazards identified in criterion C.				
(E) Evaluate Risk: The project team evaluates the project risk by determining the likelihood/probability of a threat/hazard occurring and the associated consequences/impacts. Consequences and impacts should be classified as social, environmental, and/or economic/financial.				
			(F) The project team conducts the risk evaluation with the owner and a diverse and integrated team of key stakeholders.	





A. To what extent does the project team's risk assessment include the project, infrastructure system, and community?

- 1. Definition of the analysis boundary
- 2. Assessment of risks connected to Terna's plants
- 3. Environmental Impact Assessment for the project
- 4. Environmental report, Development Plan: the operation form indicates various goals (inter/intrazonal congestion, quality of the service, resilience) that consider the potential risks to the electrical infrastructure and to the population that could take place without the project.
- 5. For assessments of the climate risks, Terna evaluates the risk to which the network is exposed as a function of climate projections and the vulnerability of the infrastructure, establishing the restoration times upon the occurrence of a breakdown and the related risk in terms of EENS of the primary substations. These analyses are performed on the infrastructure system under preand post- new operation conditions to increase the network's resilience.

B. Has the project team identified the critical functions and dependencies of the infrastructure asset and its primary components?

- 1. Assessment of risks connected to Terna's plants
- 2. Environmental Impact Assessment
- 3. Environmental report.
- 4. For the assessment of climate risks, the methodology for resilience includes the establishment of vulnerability curves for the line components that allow the identification of the most critical element of the asset.

C. Has the project team identified the threats or hazards to the project and its surroundings?

- 1. Assessment of risks connected to Terna's plants
- 2. Environmental Impact Assessment
- 3. Environmental report.
- 4. The methodology for resilience includes the identification of threats for various types of climate events based on maps of climate projections of the threat examined as defined in the methodology document.

D. Has the project team identified the vulnerabilities of the critical functions and dependencies of the infrastructure asset?

- 1. The methodology for resilience includes the identification of vulnerability based on maps of climate projections of the threat examined and the establishment of vulnerability curves for the line components that allow the identification of the most critical element of the asset, including against the indirect effects caused by the threat (e.g. plants falling due to wind and/or snow) and, finally, the restoration time upon the occurrence of an event on all lines and PSs in the NTN.
- 2. Security assessment (as reported in the introduction and on Terna's site)
- 3. Assessment of environmental risks connected to Terna's plants

E. Has the project team evaluated risks by determining the probability of a threat or hazard occurring and the associated impacts?

- 1. As established in the new methodology, the risk related to climate threats are expressed as probabilities of occurrence, that is, in restoration time upon the occurrence of an event that causes an interruption to the supply on the network.
- 2. Determination of probability of occurrence of emergency scenarios connected to Terna's plants in relation to environmental risks





- F. Did the risk evaluation conducted by the project include the participation of the owner and a diverse and integrated team of key stakeholders?
 - 1. The definition of the new methodology was shared with RSE; the approval of the methodology will be done by ARERA.
 - 2. Approval of the environmental report by the relevant ministries





CR 2.4 ESTABLISH RESILIENCE GOALS AND STRATEGIES

This credit requires the planning and implementation of resilience strategies as a function of the outcome of the risk assessment performed for credit CR 2.3.

Terna plans its infrastructure based on the work's useful life span, considering all potential risks and implementing appropriate planning strategies to safeguard the infrastructure and the community.

In relation to climate events, increasing the network's resilience means increasing a system's capacity to resist strains that exceed the limits of the system and to restore it to a state of normal functioning. To achieve this objective, it is necessary to make infrastructure investments aimed at preventing and mitigating impacts on the continuity of the electrical service and implementing operating methods and tools to manage the emergency and to restore normal functioning conditions in a short time.

Related to resilience, Terna is developing a methodology that is applicable and replicable for various types of climate threats, such as wind threat and the formation of ice accumulations.

The possible operations strategies, aimed at increasing the resilience of an electrical network, may involve:

- **Functional security**, with the goal of reducing the likelihood of an interruption of the supply due to a severe event, through raising the level of security; in these cases, this means preventive infrastructural operations (e.g. new overhead line construction, new cable line construction that may use technological diversification, project standard updates, replacement of worn lines, replacement of conductors, etc.) or mitigation (e.g. installation of anti-rotation and/or interphase devices, etc.);
- **Restoration**, with the goal of increasing the manager's capacity to re-supply its users quickly following a severe event; in these cases, this involves emergency plans (e.g. implementation of operating strategies and procedures to coordinate teams between the transmission network's manager, the distribution manager, local communities and the managers of production plants, use of electricity generation units, etc.) or work tools and equipment (e.g. use of special vehicles, temporary supports, improvement of telecommunications pathways, etc.) to reduce restoration times.

In relation to the occurrence of emergency scenarios that may take place and possible environmental impacts, Terna evaluates the actions to be taken in the field, the staffing to deploy and the training needed.

INTENT	To support greater project and community resilience by establishing clear objectives.		
METRICS	The degree to which the resilience objectives expand from the initial commitment to quantifiable project objectives, long-term operations plans and plans for community development.		
APPLICABILITY	Applicable		





	LE	VELS OF ACHIEVEME	NT	
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
/	Strategy Development	Stakeholder Input	Shared Community Goals	
/	A + B	A + B + C	A + B + C + D	
1	POINTS: 8	POINTS: 14	POINTS: 20	
	 (A) The project team deterr owner's acceptable level of (B) The project team uses to risk management strategies increase project resilience. greatest reduction of risk w 	innes the performance goals risk. the results of a risk evaluatic s that meet project performa The project team prioritizes ithin project cost constraints (C) The project team enga stakeholders in developing goals and strategies.	s of the project and the on (e.g., CR2.3) to develop nce goals and budget, and strategies that result in the ges the owner and key or reviewing resilience goals with project team aligns project resilience goals with broader community- or region-wide resilience goals and plans. OR If community resilience goals are lacking, the project team publicly shares its resilience goals	
			in support of developing broader community goals.	





		EVIDENCE AND DOCUMENTATION REQUIRED
Α.	Has th	e project team identified the project performance goals and risk appetite of the owner?
	1.	The projects can be evaluated according to the resilience methodology to identify, based on forecasting climate maps, the climate risks to which they are potentially exposed and how they can reduce the performance of those projects in terms of probabilities and thus restoration times in the event of a breakdown.
В.	Has th evalua	e project team developed risk management strategies based on a comprehensive risk tion?
	1. 2. 3.	Project strategies regard both structural operations on the assets that improve resilience by increasing network redundancy, reducing to a minimum the chance of service interruptions and strengthening portions of the network in critical areas (increasing meshing, rebuilding, layout changes, new line construction, technology diversification with solutions that partially or wholly integrate the use of underground cable); and prompt mitigation solutions that improve resilience by increasing the robustness of the system (installation of anti-rotation devices or interphase spacers). Specific project documentation with an indication of the specific strategy implemented Assessment of the risk related to Terna's plants that includes the actions to be taken in the event of the occurrence of the emergency scenarios
C.	Have k	ey stakeholders been engaged in developing resilience goals?
	1.	The resilience methodology was developed with the support of RSE and must be approved by ARERA.
	2.	Possible other joint agreements with other stakeholders, etc.
D.	Is the adapta	project part of, or does it support, larger community resilience or climate change ation goals?
	1. 2. 3	Operation form in the Development Plan (projects are characterised by precise objectives such as FER integration, resilience and energy transition) The resilience projects are implemented with the main objective of reducing the effects of climate changes (extreme events) on the NTN and the consequent impact in terms of energy not supplied to the primary substations.
	э.	





CR 2.5 MAXIMIZE RESILIENCE

In particular, this credit assesses whether the objectives and strategies implemented in credit CR 2.4 are incorporated into the project and constantly monitored.

Control and monitoring of performance are done by Terna at the plan level, as an annex to the DP, the 'Methodology document for the application of cost/benefit analyses applied to the development plan' that defines the methodology related to the cost/benefit analyses (called CBA methodology 2.0) applied to the operations in the Development Plan considered.

The cost/benefit analysis is also applied to the enhancement of the resilience benefit, assessed as outlined by the new Resilience Methodology being defined. In particular, the resilience benefit is measured in terms of reduction of expected energy not supplied to the primary substations.

INTENT	To increase resilience, the life cycle and system performance, and the ability to resist risks by maximising durability.
METRICS	The degree to which the project incorporates elements that increase durability and the ability to resist risks and prolong the useful life.
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Improved Resilience	Thorough	Ongoing Resilience		
Performance	Implementation	Monitoring	Quantifying improvement	
A + B	A + B + C	A + B + C + D	A + B + C + D + E	
POINTS: 11	POINTS: 15	POINTS: 20	POINTS: 26	
(A) The project team develo of the project (e.g., CR2.3).	ops resilience goals and strat	egies (e.g., CR2.4) based o	n a detailed risk evaluation	
(B) The project team takes	a comprehensive approach t	o implementing resilience st	rategies.	
	(C) The project team period	dically monitors the impleme	ntation of resilience	
	strategies and revisits their	enectiveness in addressing	project lisk throughout	
	project development.	(D) Resilience strategies a	re incorporated into the	
		operations and maintenan	ce of the project.	
		Organization(s) responsibl	e for the ongoing operation	
		of the project have system	s in place to maintain, grow,	
learn, and continually improve resilience capabilities				
		(i.e., "plan, do, check, act").	
			(E) The project team	
			establishes methods for	
			measuring/quantifying the	
			benefits of resilience	
			from avoided damage or	
			service loss, accelerated	
			recovery time).	





- A. Has the project team developed resilience goals and strategies based on a comprehensive risk evaluation?
 - 1. As a result of the risk assessment mentioned in credit CR 2.4 criterion A, Terna identifies objectives and strategies appropriate for reducing risk due to extreme climate events.
- B. Has the project team implemented resilience strategies sufficient to address major project risks and improve project resilience?
 - 1. As a result of the assessment of the previous point, Terna implements the most appropriate strategies of those defined in credit CR 2.4 criterion B, and enhances the related benefit in terms of improvement of resilience.
- C. Has the project team periodically monitored the implementation of project resilience strategies and reviewed their continued effectiveness throughout project delivery?
 - 1. The resilience strategies implemented are monitored as a function of the project's progress status from planning to design and construction.
 - 2. Further monitoring activities in the strategies implemented can depend on the type of solution chosen and/or regulatory directives.
- D. Will resilience goals and strategies be incorporated into the ongoing operations and maintenance of the project?
 - 1. The implementation of project resilience strategies is evaluated and considered through the analyses of the network during its planning stage and in the following operations stage.
- E. Does the project include methods for measuring or quantifying resilience performance targets?
 - 1. For Terna, the resilience performance objective is measured in terms of reduction of expected energy not supplied as defined by the resilience methodology that Terna is developing.





CR 2.6 IMPROVE INFRASTRUCTURE INTEGRATION

As manager of the NTN, Terna is charged with pursuing the development of the electrical network, ensuring increasing operating efficiency and integration with the European network.

The integration of the network includes various spheres of action, nationally among market zones to reduce network congestion, improving the use of generation resources to meet demand and increasing the use of more competitive and efficient plants, with positive effects on competition. Another aspect, also national, is the interoperability and coordinated development of infrastructure networks, especially with the distribution companies, with the former RFI railroad network.

Internationally, Terna is pursuing the development of interconnection with the networks in adjoining countries to increase the volume of energy exchanges at more competitive prices, increasing competitiveness in energy markets while also ensuring the supply of additional power reserves for the safe operation of the electrical system.

INTENT	To improve operational relationships and strengthen the functional integration of the project into connected, efficient and diversified infrastructure systems.
METRICS	The degree to which the design is integrated into other connected systems, where useful and appropriate, in order to increase the resilience and performance of the systems
APPLICABILITY	Applicable

LEVELS OF ACHIEVEMENT				
IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
Internal Integration	Risk Reduction	System Integration	Community/Network Integration	INnformation Integration
Α	A + B	A + B + C	A + B + C + D	A + B + C + D + E
POINTS: 2	POINTS: 5	POINTS: 9	POINTS: 13	POINTS: 18
(Λ) The project increases internal systems integration in order to achieve efficiency or system diversity				

(A) The project increases internal systems integration in order to achieve efficiency or system diversity. (B) Integration strategies increase resilience and reduce the risk of systemic or cascading failures.

(C) The project leverages its relationship within a larger infrastructure system in order to achieve efficiency or system diversity.

to achieve efficiency or system diversity.

(D) The project integrates networks of infrastructure systems (e.g., water and transportation) in order to achieve efficiency or system diversity. In certain cases, projects may substitute the community integration of non-physical social or economic systems.

(E) The project integrates data or monitoring systems with reporting or preparedness systems in order to learn and improve performance over time.





- A. Does the project increase internal systems integration?
 - 1. Development Plan (goal indicated in the objectives in the operation form)

B. Will the infrastructure integration reduce the risk of systemic or cascading failures?

- 1. Description of the operation in the Development Plan (goals and benefits to energy not provided)
- 2. Analysis of interferences with other infrastructure (e.g. TE cables)
- 3. Project documentation related to the specific project

C. Does the project increase external systems integration?

- 1. Integration with RFI (Rete Ferroviaria Italiana) (in the Development Plan): Operation form + Connections annex
- 2. Variation in the NTN (asset acquisition)
- 3. Integration with telecommunications (e.g. fibre optic) temperature monitoring systems, video surveillance Smart Towers/IoT for the Grid
- 4. Project documentation related to the specific project
- D. Does the project integrate infrastructure networks?
 - 1. Integration with the distributors (e.g. TSO/DSO coordination for resilience) and with the bordering TSOs (operation sheet from the Development Plan)
 - 2. Project documentation related to the specific project

E. Does the project integrate data or monitoring systems in order to improve performance?

- 1. Telecommunications systems (fibre optic) land and marine monitoring
- 2. Smart Towers/IoT for the Grid
- 3. Dynamic Rating variation in the range of the line as a function of the temperature parameters.
- 4. Project documentation related to the specific project





CR 0.0 INNOVATE OR EXCEED CREDIT REQUIREMENTS

This credit allows an evaluation of innovative elements characteristic of the project that go beyond expectations in other credits in the category.

The scores related to this credit are not included in the total applicable points and therefore qualify as bonus scores.

INTENT

To reward exceptional performance beyond the expectations of the system and the application of innovative methods that promote state-of-the-art sustainable infrastructure.

METRICS

The project's sustainability performance qualifies as innovation or exceptional performance or is not otherwise recognised in the existing credits.

LEVELS OF ACHIEVEMENT
INNOVATION
Innovate or Exceed Credit Requirement
A or B or C
POINTS: MAX 10
(A) Implement innovative methods, technologies, or processes that are novel either in their use, application, or within the local regulatory or cultural context.
OR
(B) Implement measures that exceed the highest existing requirements within one or more Climate and Resilience credits. OR

(C) Address additional aspects of sustainability not currently recognized in Envision

EVIDENCE AND DOCUMENTATION REQUIRED

- A. To what extent does the project implement innovative methods, technologies, or processes that overcome significant problems, barriers or limitations, or create scalable and transferable solutions?
 - 1. Documentation highlighting the application of innovative technical methods or solutions.
- B. To what extent does the project exceed the highest levels of achievement for a given credit?
 - 1. Documentation highlighting the fulfilment of the requisites required for the maximum achievement level of a credit in the *Climate and Resilience* category.
- C. To what extent does the project address a sustainability aspect that is not currently addressed by the Envision system?
 - 1. Documentation showing how the project addresses an aspect of sustainability pertaining to the *Climate and Resilience* category, not currently evaluated by the other credits in the category.





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