**TC ABSTRACT**

**I. Basic Project Data**

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| ▪ Country/Region: | Regional |
| ▪ TC Name: | Enabling Energy Storage Markets in LAC for a Resilient, Low-Carbon Multisector Coupling |
| ▪ TC Number: | RG-T3801 |
| ▪ Team Leader/Members: | Edwin Malagón (INE/ENE), Team Leader; Marcelino Madrigal (INE/ENE), Alternate Team Leader; Cecilia Correa (INE/ENE); Fidel Márquez (INE/ENE); Virginia Snyder (INE/ENE); Michelle Carvalho (INE/ENE); Juan Paredes (INE/ENE); Augusto Bonzi; Sergio Ballón; Héctor Baldivieso; Kenol Thys; Alexandra Planas; Javier García; Carlos Echevarría; Stephanie Suber (INE/ENE); Raúl Rodríguez (INE/TSP); Mariel Juárez (CSD/CCS). |
| ▪ Taxonomy: | Client Support |
| ▪ Number and name of operation supported by the TC: | N/A |
| ▪ Date of TC Abstract: | 13 Nov 2020 |
| ▪ Beneficiary: | Bolivia, Brazil, Colombia, Dominican Republic, Ecuador |
| ▪ Executing Agency: | Inter-American Development Bank (IDB) |
| ▪ IDB funding requested: | US$1,000,000.00 |
| ▪ Local counterpart funding: | US$0.00 |
| ▪ Disbursement period: | 36 months |
| ▪ Types of consultants: | Individuals; Firms |
| ▪ Prepared by Unit: | INE/ENE - Energy |
| ▪ Unit of Disbursement Responsibility: | INE/INE - Infrastructure and Energy Sector |
| ▪ TC included in Country Strategy (y/n): ▪ TC included in CPD (y/n): | No No |
| ▪ Alignment to the Update to the Institutional Strategy 2010-2020: | Productivity and innovation; Institutional capacity and rule of law; Environmental sustainability |

**II. Objective and Justification**

2.1 Support the enabling of energy storage markets in Latin America and the Caribbean to increase power systems flexibility and to better manage energy supply and demand across sectors, through the strengthening of policies and regulations and the development of innovative storage projects.

2.2 Stabilizing climate change below 2°C and close to 1.5°C requires getting net-zero carbon emissions by 2050. Decarbonizing the economy could achieve annual savings for Latin America and the Caribbean (LAC) of $621 billion by 2050 if energy and transport sectors reach net-zero emissions. This would create 7.7 million new permanent jobs. Solar and wind power could allow to move away from fossil fuels, which carry $90 billion worth of stranded assets risk in the region’s power sector alone. Many renewable energy sources, key for the decarbonization, are variable. Renewable energies are already competitive, and their expansion is needed for the decarbonization of the electricity mix and the electrification of other uses such as industry and transportation. Therefore, tools for temporal and special match between demand and supply are required. Energy storage will be key in providing flexibility to the system and will shape the future of the energy sector (DIA 2020).

2.3 Storage technologies can bring several solutions through centralized and decentralized investments to balance the system and to increase resiliency. The share of renewable energy in the electricity sector is growing in LAC. Yet sectors such as transport, buildings, and industry, still largely depend on fossil fuels. The electrification of these sectors and the use of other energy sources such as green hydrogen or renewable liquid fuels could be a key to the decarbonization of the economy. This transformation requires deepener sector coupling. Different storage technologies are being implemented in LAC. Storage technologies can benefit the grid, but new business and regulatory models need to be analyzed to boost their adoption and reduce barriers.

2.4 LAC has more than 1,000 electric buses in operation, which represent at least 200 MW of battery storage capacity. If properly integrated with the grid can help decarbonize both sectors and improve their resiliency. Also, there are many minigrids with storage. However, experiences on-grid scale services, such as energy shifting, frequency control, or power transmissions deferral are limited. Chile, Mexico, and Colombia have developed specific regulations for storage integration. In other cases, regulatory agencies are starting to work on storage as a reaction requests to connect new storage facilities by the private sector.

2.5 The development of storage technologies requires understanding of all services storage technologies can provide and value them accordingly. This TC will also evaluate different energy storage technologies to increase participation of variable renewables and the electrification of other energy uses. Resources form the CIF’s Global Energy Storage Program (GESP)[[1]](#footnote-1) will focus on enabling countries’ policy and regulatory frameworks to foster the creation of energy storage markets needed for the sectors coupling, reduce barriers and benefit from storage flexibilities that end-use sectors may represent, including residential, commercial, industrial and transport sector. This contribution will play a critical role in LAC clean energy transition by reducing power grids congestions, allowing further penetration of renewable energy, increasing the system efficiency, improving grid flexibility and reliability, improving energy access, and promoting the electrification of different sectors[[2]](#footnote-2).

**III. Description of Activities and Outputs**

3.1 **Component I: Development of Energy Storage Regulatory Frameworks.** Will finance the analysis and identification of required changes in regulatory frameworks, as well as analyze regulatory barriers for the adoption, new entrants, and remuneration of the different storage services. It will also analyze enabling regulatory frameworks and their relationship with different market designs and enabling infrastructure (such as the existence of smart metering). Expected outputs will be regulatory frameworks proposals designed and aligned with the characteristics of LAC.

3.2 **Component II: Strengthening of Energy Storage Planning.** The inclusion of storage in the decision-making of regulators and policy makers require the improvement of storage modeling and support for energy storage planning. This will also subcomponent port power systems modeling and simulations to determine and design feasible storage solutions for power systems. The output of this component will be the improvement of power system modeling that will contribute with energy storage planning.

3.3 **Component III: Energy Storage Projects Support.** Support energy storage pilot projects through the: (i) development of technical and economic pre-feasibility studies for storage projects; (ii) design of business models for utility-scale, behind the meter and vehicle to grid applications; and (iii) specific support for pilot projects. Expected outputs: (a) prefeasibility studies undertaken; (b) innovative business models designed; (c) engineer designs developed; and (d) storage projects implemented.

3.4 **Component IV: Knowledge sharing and dissemination.** Will finance workshops and/or webinars, and technical publications to increase awareness on the value of storage to the energy systems and promoting the development of the technology. Stakeholders will include – among others – policymakers, energy regulators, environmental authorities, local governments, local communities, and industries. Will disseminate knowledge and experiences on storage technologies, including results and lessons learned from Components I, II, and III.

**IV. Budget**

**Indicative Budget**

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| --- | --- | --- | --- |
| **Activity/Component** | **IDB/Fund Funding** | **Counterpart Funding** | **Total Funding** |
| Component I. Development of Energy Storage Regulatory Frameworks. | US$300,000.00 | US$0.00 | US$300,000.00 |
| Component II. Strengthening of Energy Storage Planning | US$150,000.00 | US$0.00 | US$150,000.00 |
| Component III. Energy Storage Projects Support. | US$450,000.00 | US$0.00 | US$450,000.00 |
| Component IV. Knowledge sharing and dissemination. | US$100,000.00 | US$0.00 | US$100,000.00 |
| **Total** | **US$1,000,000.00** | **US$0.00** | **US$1,000,000.00** |

**V. Executing Agency and Execution Structure**

5.1 As requested by the beneficiaries and according to the Operative Guidelines (GN‑2629‑1), the IDB, through its Energy Division (INE/ENE) will be the Executing Agency of this regional TC.

5.2 The Energy Division (INE/ENE) will act as the executing agency of this regional TC due to its ability to leverage its extensive network of internal and external subject-matter experts and well-established relationships with the stakeholders involved.

**VI. Project Risks and Issues**

6.1 One risk for the implementation of this TC is related to delays in the implementation of activities involving local authorities or site visits. The COVID-19 pandemic has affected the speed of response from authorities and public companies to different projects because of the teleworking conditions. Similarly, travel restrictions could impact local data gathering for international consulting studies. To mitigate this, the project team will implement all activities in close coordination with IDB country offices and key country stakeholders, including representatives from government, industry, and civil society. In addition, consulting services will foresee the use of remote communication tools to ensure the scope of work completion. Training and dissemination activities will be conducted using virtual tools.

6.2 Coordination with multiple institutions and authorities to analyze and review the deliverables from the studies could delay the TC execution. To mitigate the risks the local team members based in the Country Offices will lead the dialogue with the local authorities with support and in coordination with the team leader of this TC. The TC team will conduct regular meetings with the designated focal point in each organization/Ministry established at the beginning of the implementation.

**VII. Environmental and Social Classification**

7.1 The ESG classification for this operation is Category "C", as the TC has no environmental or social implications. For details, see the [Safeguard Policy Filter Report](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-1896128619-2) and the [Safeguard Screening Form](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-1896128619-3).

1. US$600,000,000.00 fund to be co-financed by the GCF. [↑](#footnote-ref-1)
2. See: Cavallo. E., Powell. A, and Serebrisky. P. [*From Structures to Services - The Path to Better Infrastructure in Latin America and the Caribbean*](https://flagships.iadb.org/en/DIA2020/from-structures-to-services). IDB, July 2020. [↑](#footnote-ref-2)