

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

BRAZIL

ACCELERATING THE DECARBONIZATION OF HEAVY INDUSTRY IN BRAZIL

(BR-T1694)

PROJECT DOCUMENT

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PROJECT SUMMARY

Operation Type:	Technical Cooperation
Sector:	ENERGY
Subsector:	LOW-CARBON ENERGY TECHNOLOGIES
TC Taxonomy:	Client Support
Project Number under the Operational Support Taxonomy:	N/A
Technical Responsible Unit:	INE/ENE-Energy
Unit with Disbursement Responsibility (UDR):	CSC/CBR-Country Office Brazil
Executing Agency:	Inter-American Development Bank

PROJECT OBJECTIVE

The objective of this TC is to contribute to Brazil's industrial decarbonization acceleration by developing financial instruments to unlock public and private investment in low-carbon industrial projects, studies, and initiatives.

FINANCIAL INFORMATION

Financing Type	Fund	Amount in US\$
TCN - Nonreimbursable	W2B - OC SDP Window 2 - Infrastructure	130,000
Total IDB Financing		130,000
Counterpart Financing		0
Total Project Budget		130,000

Donors:	N/A
Disbursement Period:	36 months
Execution Period:	36 months

ADDITIONAL FINANCIAL INFORMATION

N/A

I. JUSTIFICATION AND OBJECTIVE

- 1.1 **Diagnostic.** Brazil's national vision is to execute a transformative shift in its high-emitting industrial sectors—cement, steel, chemicals, and fertilizers—toward low-carbon technologies and net-zero practices. This vision is supported by a comprehensive policy architecture designed to accelerate the transition. Key frameworks include the New Industry Plan (*Nova Indústria Brasil*), which sets ambitious targets for biofuels, and the National Industrial Decarbonization Strategy (ENDI), which focuses on technological innovation and energy efficiency in energy-intensive sectors. These policies collectively aim to reduce emissions, enhance climate resilience, and develop robust clean technology supply chains, positioning Brazil as a global leader in sustainable industrial development.
- 1.2 The core of Brazil's strategy involves transitioning its industrial energy consumption from fossil fuels to renewable sources. This is being pursued through several key pathways, including the electrification of industrial processes and the integration of low-emission hydrogen as a clean energy vector. Concurrently, the strategy emphasizes advancing resource and energy efficiency through circular economy models, such as reusing industrial by-products. Furthermore, it involves piloting and scaling innovative technologies like Carbon Capture and Storage (CCS) and advanced manufacturing to address the most difficult-to-abate emissions.
- 1.3 Despite progress, significant challenges remain. In 2023, the industrial sector alone accounted for 31.8% of the country's total energy consumption, and the energy matrix was still 50.9% non-renewable, with industry heavily dependent on oil (35.1%), natural gas (9.6%), and coal (4.4%). One of the barrier to decarbonization is the financial risk of deploying innovative low-carbon technologies, which face high upfront costs and uncertain market conditions. Mobilizing private capital at the necessary scale requires effective risk-mitigation mechanisms. Achieving this transition also depends on robust capacity building, given the complexity of technologies, the scale of investment, and the systemic changes required. Priorities include strengthening technical expertise, enhancing policy and regulatory institutions, developing financial capacity to channel green investments, reskilling the workforce, and fostering collaboration across stakeholders to ensure a just and coordinated transition. Therefore, concessional finance and capacity building are essential to support and de-risk emerging solutions.
- 1.4 **Request.** This Technical Cooperation (TC) requested by the Brazilian Development Bank (BNDES) and the Ministry of Development, Industry, Trade and Services (MDIC), seeks to address these investment barriers. By developing and implementing financial mechanisms to de-risk private investment, the TC will catalyze funding for decarbonization projects, studies, and initiatives, thereby supporting the scale-up of low-carbon technologies across priority industrial sectors. The initiative will specifically support the development of new technologies such as hydrogen, carbon capture utilization and storage, energy efficiency improvements, electrification processes, identification and development of hubs, and circular economy. These targeted interventions will not only reduce emissions but also generate new economic opportunities and public health benefits.

- 1.5 The focus on steel, cement, chemicals, fertilizers, aluminum, and SAF is based on their high contribution to Brazil's industrial greenhouse gas (GHG) emissions, their strategic role in the national economy, and their potential for significant decarbonization impact through the adoption of low-carbon technologies. These sectors together account for approximately 73% of Brazil's process-related CO₂ emissions, representing the country's largest industrial emission sources¹.
- 1.6 **Objective.** The objective of this TC is to contribute to Brazil's industrial decarbonization acceleration by developing financial instruments to unlock public and private investment in low-carbon industrial projects, studies, and initiatives. The TC will focus on steel, cement, chemicals, and fertilizers to boost competitiveness and productivity, enhance climate resilience, and foster sustainable industrial growth.
- 1.7 **Strategic Alignment.** The TC is aligned with the IDB Group's Institutional Strategy: Transformation for Greater Scale and Impact (CA-631) and the objectives: (i) address Climate Change (CC); and (ii) bolster sustainable regional growth with the development of a low carbon, resilient electricity sector. By promoting financial innovation and investment mechanisms that de-risk private sector participation in industrial decarbonization, the TC supports the IDB Group's commitment to scaling up climate action and mobilizing capital for green transformation. It is also aligned with the operational focus areas: (i) biodiversity, natural capital and climate action; (ii) institutional capacity, rule of law, and citizen security; and (iii) sustainable, resilient, and inclusive infrastructure.
- 1.8 This TC is aligned to Brazil and IDB Group Strategic Agreement Country Strategy 2024-2027 (GN-3243-3), as it will contribute to the objectives of: (i) Enabling the Green Transition and Strengthening Climate Resilience; by accelerating the adoption of low-carbon industrial technologies such as hydrogen, carbon capture, electrification, and energy efficiency, and by creating financial and institutional conditions for large-scale decarbonization investments; and (ii) Accelerating Growth Through Strong Institutions and Enhanced Productivity, by improving the enabling environment for industrial competitiveness, strengthening institutional and technical capacities, and mobilizing private capital for innovation and green growth. This TC also aligns with Brazil's Nationally Determined Contributions (NDCs) under the Paris Agreement which commits to reducing emissions by 59–67% by 2035 (from 2005 levels) and achieving climate neutrality by 2050.
- 1.9 The TC is consistent with the Energy Sector Framework (GN-2830-8) as it contributes to the objective of building institutional capacity and fostering effective governance for the sector by strengthening its capacity to develop sector policies and manage risk; it is also consistent with the Climate Change Sector Framework Document (GN-2835-13) by supporting decarbonization; and finally, it is aligned with the Sustainable Infrastructure Strategy for Competitiveness and Inclusive Growth (GN-2710-5), with the strategic principle of planning and promoting decarbonization that promote sustainable and inclusive growth. Furthermore, the TC aligns with the Ordinary Capital Strategic Development Program (OC SDP),

¹ [Emissões de GEE por Setor, MDIC.](#)

Window 2 Infrastructure (W2B) (GN-2819-14) by promoting energy infrastructure that is more efficient and capable of integrating clean and innovative technologies.

II. COMPONENTS

- 2.1 **Component I. Identification and Structuring of Industrial Transformation Initiatives.** This component entitles the identification, evaluation and preparation of industrial transformation projects, studies, and initiatives in priority sectors such as steel, chemicals, cement, aluminum, sustainable aviation fuels, and fertilizers. Activities include analytical assessments, technical and economic evaluations, strategic studies, conceptual and preliminary project structuring, and the development of supporting instruments and methodologies. As applicable, these assessments, evaluations, and studies may cover: (i) decarbonization pathways and technological options; (ii) baseline diagnostics of emissions and production processes; (iii) technical-economic feasibility and cost analyses; (iv) regulatory and institutional barriers; and (v) preliminary project structuring and development of methodological tools (e.g., screening criteria). These efforts will incorporate quantitative analyses, cost estimation, and consideration of environmental and social impacts in line with Brazilian regulations and international best practices.
- 2.2 **Component II: Capacity building.** This component will support workshops, seminars, and capacity-building to target industry stakeholders, policymakers, and research institutions to promote domestic and regional knowledge dissemination, collaborative learning, and replication of successful technologies. Activities will focus on: (i) dissemination of methodologies and tools developed under Component I; (ii) decarbonization technologies and global best practices; (iii) regulatory and financing mechanisms for industrial transformation; and (iv) case studies and lessons learned to foster replication and regional knowledge exchange.
- 2.3 **Expected Results.** The main outcomes expected for this TC can be organized in the following part: Component I will generate a robust pipeline of industrial decarbonization projects, studies, and initiatives in priority sectors, supported by analytical, technical, economic, and environmental assessments that guide project prioritization and structuring. Component II will result in conducting workshops and local and regional industrial transformation events. These events will enhance the technical and institutional capabilities of industry stakeholders, policymakers, and research institutions by providing access to the latest knowledge and best practices in industrial transformation. Through workshops participants will gain practical skills and insights that enable the adoption and replication of successful decarbonization technologies and approaches. The component will also foster collaborative learning and strengthen networks for domestic and regional knowledge exchange, accelerating the dissemination of innovative solutions.
- 2.4 **Beneficiaries.** The primary beneficiaries of this TC are public and private stakeholders involved in Brazil's industrial transformation and decarbonization agenda. Direct beneficiaries include the requesting entities, BNDES and MDIC. Industrial firms in priority sectors will be indirect beneficiaries gaining access to pre-feasibility analyses, project preparation support, and tailored financial structuring to advance low-carbon investments. Public institutions and

policymakers will benefit from strengthened technical and institutional capacities to design and implement enabling policies and financial mechanisms that promote sustainable industrial development. Financial intermediaries and investors will also benefit from enhanced knowledge of risk-mitigation instruments and blended finance models to mobilize private capital. In addition, research institutions and technical agencies will gain from knowledge-sharing activities, workshops, and regional collaboration events, facilitating the dissemination and replication of innovative decarbonization technologies and business models across Brazil and the wider region.

III. BUDGET

- 3.1 **Budget.** The total cost of the TC will be US\$130,000, with resources from the OC SDP Window 2 - Infrastructure (W2B). No local counterpart contribution is contemplated. The budget details are provided below:

Budget in US\$		
Components	IDB Funding (W2B)	Total
Component 1: Identification and Structuring of Industrial Transformation Initiatives	115,000	115,000
Component 2: Capacity building	15,000	15,000
Total	130,000	130,000

IV. EXECUTION STRUCTURE

- 4.1 In compliance with the Operational Guidelines for Technical Cooperation Products Revised version (GN-2629-1), this TC is classified as Client Support. The TC will be executed by the Inter-American Development Bank (IDB), based on a request by the beneficiaries, in accordance with the Bank's Technical Cooperation Policy (GN-2470-2) and the Procedures for the Processing of Technical Cooperation Operations and Related Matters (OP-619-4), through the Energy Division (INE/ENE)². The Bank execution is justified due to its extensive experience in the sector and its active role in providing technical cooperation to support decarbonization efforts across Latin America and the Caribbean, such as in Chile with the TC [ATN/OC-21263-CH](#) (*Strengthening the energy transition process and carbon neutrality of the electricity sector*), and in Honduras with the [ATN/SX-21961-HO](#) (*Support for the decarbonization of the National power utility from Honduras*). The Bank has accumulated significant knowledge in designing and implementing financial mechanisms and policy instruments to promote low-carbon

² Prior to the start of specific activities in the beneficiary country, the Bank must obtain a no-objection letter from the respective liaison office. In the absence of such letter, no activities under this TC will be carried out.

- investment, including the development of green financing facilities, risk mitigation tools, and public–private partnerships for sustainable infrastructure. Additionally, the Bank has a proven track record in the preparation and implementation of technical and operational activities similar to those proposed for this operation, which will contribute more effectively to the achievement of the objectives of the TC in a timely manner. The Bank will allow for better coordination with the execution of the TC given the importance of addressing technical, procurement, environmental, and climate aspects.
- 4.2 As the EA, the Bank will: (i) guarantee the technical quality of the products and compliance with the standards necessary for the execution of the TC; (ii) facilitate the contracting and execution of studies and consultancies; and (iii) maximize the benefits of the IDB's technical knowledge in the different areas. The TC will be implemented in coordination with the beneficiary. The Bank will be responsible for the procurement processes, which will allow the contracts developed under the TC to be timely and planned at the time of execution. The beneficiary may provide technical input to the terms of reference and reports of the consultants, but the Bank will have the autonomy to approve such documents and act as Executing Agency (EA) of the TC. This dynamic will facilitate better articulation between the various actors within the framework of the TC.
- 4.3 **Procurement.** All procurement to be executed under this Technical Cooperation have been included in the Procurement Plan (Annex IV) and will be hired in compliance with the applicable Bank policies and regulations as follows: (a) Hiring of individual consultants, as established in the regulation on Complementary Workforce (AM-650) and (b) Contracting of services provided by consulting firms in accordance with the Corporate procurement Policy (GN-2303-33) and its Guidelines.
- 4.4 **Execution and Disbursement Period.** This TC will be executed in a period of 36 months. The project team at INE/ENE will be responsible for monitoring and facilitating the activities required to achieve the expected results. The TC will be monitored and evaluated in accordance with Bank requirements and through the Results Matrix. Annual and final reports will be prepared in Convergence, as established in OP-1385-4.

V. POTENTIAL RISKS

- 5.1 No major risks are anticipated for this TC. The moderate risks identified in this TC include: (i) coordination between the different entities of the power and industry sector as well as risk management sector and their institutions; and (ii) potential difficulties in obtaining information from the different entities. To mitigate the first risk, the TC will leverage the IDB's convening capacity and established relationships with sectoral stakeholders to facilitate coordination and dialogue. Regular technical meetings and validation workshops will be organized to ensure alignment of activities, promote ownership, and foster collaboration among the entities involved. To mitigate the second risk, the IDB's technical team will provide guidance and support to standardize data requests and formats, while ensuring confidentiality and proper handling of sensitive information.

- 5.2 **Intellectual Property.** The knowledge products generated within the framework of this TC will be the property of the Bank and may be made available to the public under a creative commons license. However, upon the request of the beneficiaries, the intellectual property of said products may also be licensed and/or transferred to the beneficiaries through specific contractual commitments that will be prepared with the advice of the Bank's Legal area.

VI. EXCEPTIONS TO BANK POLICIES

- 6.1 No exceptions to the Bank's policies are anticipated.

VII. ENVIRONMENTAL AND SOCIAL ASPECTS

- 7.1 This Technical Cooperation is intended to finance pre-feasibility or feasibility studies of specific investment projects and the environmental and social studies associated with them; therefore, the terms of reference and products of this TC will be consistent with the applicable requirements of the Bank's Environmental and Social Policy Framework (ESPF).

REQUIRED ANNEXES:

- Annex I: Request from Client
 - Annex II: [Results Matrix](#)
 - Annex III: [Terms of Reference](#)
 - Annex IV: [Procurement Plan](#)
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