**TC Document**

1. **Basic Information for TC**

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| * Country/Region: | BRASIL |
| * TC Name: | FINEP Clima: Fostering Climate Technology and Innovation to Deliver Brazil’s NDCs |
| * TC Number: | BR-T1412 |
| * Team Leader/Members: | Radaelli, Vanderleia (IFD/CTI) Team Leader; Brakarz, Barbara (CSD/CCS) Alternate Team Leader; Carpizo Riva Palacio, Carlos Ignacio (VPC/FMP); Delgado, C. Raul (CSD/CCS); Diaz Briones, Karina Miriam (VPC/FMP); Eschoyez, Guillermo Antonio (LEG/SGO); Kelly Castillo, Emily Leticia (IFD/CTI); Visconti, Gloria (CSD/CCS) |
| * Taxonomy: | Client Support |
| * Operation Supported by the TC: | . |
| * Date of TC Abstract authorization: | 26 Mar 2019. |
| * Beneficiary: | Financiadora de Estudos e Projetos – FINEP |
| * Executing Agency and contact name: | Inter-American Development Bank |
| * Donors providing funding: | INS – OC Strategic Development Program for Institutions  ACL – NDC Pipeline Accelerator Multidonor Trust Fund |
| * IDB Funding Requested: | US$750,000.00 |
| * Local counterpart funding, if any: |  |
| * Disbursement period (which includes Execution period): | 24 months |
| * Required start date: | July 2019 |
| * Types of consultants: | Firms and Individual consultants |
| * Prepared by Unit: | IFD/CTI-Competitiveness, Technology and Innovation Division |
| * Unit of Disbursement Responsibility: | CSC/CBR-Country Office Brazil |
| * TC included in Country Strategy (y/n): | Yes |
| * TC included in CPD (y/n): | No |
| * Alignment to the Update to the Institutional Strategy 2010-2020: | Productivity and innovation; Institutional capacity and rule of law; Environmental sustainability |

1. **Objectives and Justification of the TC** 
   1. The objective of this Technical Cooperation (TC) is to support the Financiadora de Estudos e Projetos (FINEP), a brazilian innovation and research agency, in the design of a climate-oriented innovation program, Finep Clima, to increase and mobilize investments in priority sectors that will support the delivery of Brazil’s National Determined Contribution[[1]](#footnote-2) (NDC) targets and strengthen Finep’s institutional capacity in implementing a robust climate portfolio. It will focus on: (i) developing a methodology to measure, report and verify the results and impacts of Finep’s financial instruments, (ii) defining priority mitigation and adaptation technologies for research, development and innovation, and (iii) mainstreaming climate change into existing and future grants and loans instruments. The proposed program will be based on a mission-oriented framework, which has proven to be effective at steering innovation, and refocusing financing to enable transformation.
   2. Finance, technology and capacity building are three central elements for the delivery of NDCs. A survey by the Technology Executive Committee of the United Nations Framework Convention on Climate Change (UNFCCC’s) pointed that over 75% of submitted Intended National Determined Contributions (INDC’s) refer to technology and innovation to support the delivery of national plans. Finance is a critical component and challenge to the delivery of NDCs. Estimates for Brazil, indicate US$26.2 billion[[2]](#footnote-3) will be required between 2016 - 2030 to meet the country’s overall climate commitments. Funding in Brazil has traditionally been provided by public agencies and banks, which have created programs to assist the execution of the National Climate Change Policy. The same is true for innovation, where the Brazilian Development Bank (BNDES) and Finep have been the predominant funding institutions. Although the public sector has been an active player in promoting innovation, other forms of arrangements, such as public - private partnerships and international cooperation via multilateral development banks, are necessary to scale-up investments. Recent cuts to research and development (R&D) and climate change, by the current Brazilian administration, also highlights the need to catalyze private investments.
   3. Another fundamental element to meet NDCs and drive effective action of climate change is the definition of priority technologies. A publication from the Brazilian Ministry of Science, Technology, Innovations and Communications (MCTIC) identified mitigation alternatives to reduce greenhouse gas emissions (GHG) in strategic sectors, but it does not detail or rank technologies. The Brazilian Technology Needs Assessment (TNA), which is being implemented under the coordination of the MCTIC, will prioritize specific technologies to achieve mitigation. A TNA is an important tool to support national sustainable development, to build national capacity and to facilitate the implementation of prioritized climate technologies. The TNA methodology gets inputs from existing policies, programs, plans and climate strategies aligning these with social and economic development objectives to map and classify which technologies could deliver them at lower emissions and greater resilience.
   4. Brazil has done extensive work through its sectoral mitigation and adaptation plans, covering deforestation, energy, agriculture, industry, mining, transport and urban mobility and health. The Brazilian NDC also recognizes the need of clean technology development, deployment, diffusion and transfer to meet adaptation and mitigation targets across energy, agriculture, infrastructure and industry. Country specific technology solutions will be required to address local issues; therefore, it is fundamental to stimulate innovation to accelerate the development and adoption of low carbon technologies[[3]](#footnote-4). Finep *Clima* will benefit from the results of the Brazilian TNA, which is expected to be due in 2020. A tailored assessment and prioritization of Finep’s technology and innovation needs, prior to this timeframe, seeks to provide customized delivery and financing solutions for successful implementation of the Finep Clima following TNA guidelines and using the national TNA as a basis. Additional responses to support this process could come from a mitigation and adaptation innovation assessment to guide research, development and innovation in Brazil.
   5. This much needed climate technology push can be facilitated through a mission-oriented approach[[4]](#footnote-5) that combines policy and financing frameworks. Being mission-oriented is not about using public investments to de-risk and level the playing field, but steering it to achieve a goal, in this case tackling climate change. It involves making decisions about technologies, finance mechanisms, partnerships, regulations and incentives that can create an enabling environment to achieve that objective, while creating positive socioeconomic outcomes. In 2016, MCTIC’s Centre for Strategic Studies (CGEE), commissioned a mission-oriented policy proposal for Brazil’s innovation system[[5]](#footnote-6), identifying strengths as long-term finance by BNDES and Finep and weaknesses, as the absence of a long-term vision to steer public scientific research and private innovation. Hence, applying this process could contribute for effective climate funding.
   6. A central element in the successful implementation of a mission-oriented innovation is the need to build institutional capacity, competencies and expertise to strengthen policy formulation and implementation. This is important to support different organizations in fulfilling their roles and in guiding private actors to identify and develop innovative solutions to tackle societal challenges. The mission-oriented approach requires different types of capacity to create the appropriate knowledge and environment to deliver the defined mission and a clear vision, in this case climate innovation. The Finep *Clima* aims in building internal capabilities to encourage the private sector and research institutions to invest in climate innovation to respond to Brazil’s climate commitments and economic aspirations. To build a strong innovation system, capacity building efforts should be aligned to long-term priorities so countries can focus on areas of relevance, effectively respond to threats and accelerate technology development.
   7. Finep is the leading institution funding basic and applied R&D and innovation in Brazil, benefiting universities, R&D centers and industry through. Non-reimbursable grants and reimbursable loans. In 2016, climate related areas for non-reimbursable grants included energy (USD ~56 million), agriculture (USD ~46 million) and water (USD ~21 million)[[6]](#footnote-7). Though 2017 figures do not provide a similar breakdown, these themes continue as priority areas for the Agency. The top ten projects in this portfolio are worth USD ~33 million and involve energy, regional and global climate models, water resources, biodiversity and ecosystems and transversal science, mitigation and adaptation topics. While the top ten projects in the reimbursable loans’ portfolio are worth USD ~299 million and focus on industrial processes (e.g. chemistry, pulp and paper) and energy (e.g. renewables, energy efficiency, efficient equipment). Nevertheless, there isn’t a dedicated climate change program to maximize efforts and mobilize private funding for adaptation and mitigation projects.
   8. Finep is currently looking at creating a dedicated climate program to support Brazil’s NDC and the Brazilian 2016-2022 Science, Technology and Innovation Strategy. Through this program, Finep would capture and centralize public and private funding for climate actions and initiatives. Priority areas for adaptation and mitigation have been initially drawn from the country’s climate change plans and programs however need to be further assessed and prioritized to steer funding to critical technologies and sectors. Other gaps also need to be addressed to structure and implement this climate program, such as the design of a mission-oriented framework to ensure the delivery of adaptation and mitigation projects, including an evaluation of Finep’s past and current portfolio, per finance mechanism; the mapping of potential partners to deliver and co-fund projects/calls, capacity building plan to mainstream climate change amongst Finep staff, and awareness campaigns for existing and potential clients.
   9. This TC will use existing innovation systems and funding mechanisms to implement adaptation and mitigation projects in Brazil. It intends to: (i) identify priority technologies for Brazil aligned with the country’s NDC’s to determine funding areas; (ii) structure a climate innovation program, Finep *Clima*, to create a mission-oriented approach towards R&D; (iii) launch specific project calls for research centers, companies and startups; (iv) design more attractive loans to catalyze private sector investment; (iv) mobilize private investors to deliver joint climate innovation projects; and (v) build internal and external capacity to mainstream climate change into existing and future funding mechanisms and projects. These objectives are aligned with the ACL and INS funds, which respectively aim to prepare countries in meeting and accelerating their climate and sustainable investments, and in strengthening technological innovation to foster institutional and policy implementation.
   10. The outcomes of this TC will contribute to the US$1.5 billion Conditional Credit Line for Investment Projects (CCLIP) for the Promotion of Innovation (BR-O0004) and the US$600 million first individual operation: Innovation for Growth Program (BR-L1490), both executed by Finep and which aims to boost the productivity of Brazilian enterprises, by fostering technology innovation among micro, small and medium sized enterprises (MSMEs), by supporting dynamic business ventures and by strengthening Finep’s institutional capacity to promote open innovation.
   11. This technical cooperation is consistent with the Update to the Institutional Strategy 2010-2020 (AB-3008) under the pillars of Productivity and Innovation, and Environmental Sustainability considering it promotes research and development for adaptation and mitigation technologies. It also contributes to the transversal area of Institutional Capacity, and it is consistent with Strategic Development Program for Institutions financed by Ordinary Capital (INS) (GN-2819-1) on its contribution to public policies and effectiveness of institutions. In addition, this TC is consistent with the NDC Pipeline Accelerator Multidonor Trust Fund (ACL) (GN-2890) given it supports the Brazilian Government “to prepare the necessary investments to meet their climate and sustainable development objectives” and “to accelerate sustainable projects”. It is aligned with the objectives of the Country Strategy 2019-2023 (GN-2889) to support activities aimed at enhancing competitiveness through innovation and is also consistent with the Innovation, Science and Technology Sector Framework Document (GN-2791-3) and with the Climate Change Sector Framework Document (GN-2835-3). Furthermore, this TC is fully aligned with the soon-to-be-approved update to the Institutional Strategy for the 2020-2023 period, which calls for a renewed approach to help to reduce LAC’s scientific and technological gaps, and prioritizes the need to reinforce and mainstream the support of the Bank for (i) promoting state-of-the-art technology and innovation applications across all sectors, (ii) developing instruments that nurture technological innovation, and (iii) supporting governments to navigate the opportunities and risks of emerging technologies.
2. **Description of activities/components and budget** 
   1. Project activities will support Finep to prioritize technologies that will contribute to climate mitigation and adaptation by building a mission-oriented approach. It will also improve funding mechanisms to catalyze private and international funding. This should be delivered by individual consultants/ firms, to be hired according to the Bank’s procurement policies, by the end of 2020. The main outcome is the delivery of *Finep Clima*, which will mainstream climate change into innovation funding.
   2. **Component 1. Assessing priority climate technologies (US$180,000).** This analysis will provide inputs to the design of Finep *Clima* by identifying priority technologies, in support of Brazil’s NDC implementation and in line with UNFCCC guidance. It will achieve this by:
   3. **Analyzing climate technologies:** this will be based on the main Brazilian policies and guidelines, especially in MCTIC’s publication about mitigation alternatives to reduce GHG emissions in strategic sectors, as well as the under-construction TNA, and national and international studies related to climate change. The analysis should identify the priority technologies and innovations to be supported by Finep.
   4. **Assessment of Finep’s portfolio:** by financing instrument (grants and loans), including outcomes (e.g. deployed technologies, GHG reduction). This analysis will be carried out by the Unicamp Development Foundation (Funcamp), which has analyzed Finep’s portfolio and developed an assessment methodology to measure its impacts, thus Funcamp can provide valuable inputs. The selected firm will be hired directly as it presents indispensable knowledge to carry out this analysis, consistent with that indicated in OP-1155-4.
   5. **Component 2. Designing of the Finep *Clima* Program (US$520,000).** This component will establish a mission-oriented approach to guide Finep’s climate program, providing inputs for the development of components for the second individual loan operation under the CCLIP. It will structure the *Finep Clima* program, reorienting existing instruments to support climate innovation projects and creating internal and external capacity; it will also include the evaluation of Finep’s existing portfolio and development of an MRV methodology. This will allow the Agency to allocate dedicated funding for climate research and technology projects and mainstream climate change and sustainability institutionally. Proposed outputs to achieve this are:
   6. **Tailored climate mission-oriented policy:** evaluation of Finep’s financing model, considering its strengths and weaknesses, to propose a mission-oriented structure for its climate program. It will apply the steps for creating a mission-oriented organization not only limited to this specific program, but also to be used by the organization to direct innovation towards solving climate challenges in Brazil.
   7. **Measurement, Reporting and Verification (MRV):** MRV Methodology that allows Finep to assess the results and impacts of its financial instruments and to prioritize its pipeline. The MRV will use sustainability criteria such as potential of GHG mitigation of proposed innovation projects supported by Finep to direct programs and financing to low-carbon activities.
   8. **Design of financial instruments:** reorientation of existing mechanisms towards climate innovation to produce attractive conditions for companies investing in climate solutions; this could be lower rates, extended payment deadlines or greater participation from Finep. This will allow Finep to catalyze private investments.
   9. **Strengthening institutional capacity by:** (i) Building internal and external capacity – design of a capacity building plan for Finep staff and delivery of training sessions to support the execution, monitoring and evaluation of climate innovation projects. This will also include targeted sessions with external partners and clients, such as MCTIC, CGEE, BNDES, State Research Agencies, National Association for R&D of Innovative Companies**;** (ii) Defining a climate portfolio strategy – compilation and systematization of the findings of the previous activities to serve as the guiding action plan for implementation of the for the second individual loan operation under the CCLIP (BR-O0004)Innovation for Growth Project. The definition of the missions based on the analysis from Component 1 to be used as reference for strategic actions to promote innovation and expand Finep’s climate portfolio; and (iii) Call for bids–design of a call for bids on climate innovation (non-reimbursable call for R&D institutions, non-reimbursable call for companies or investment call for startups), according to the availability of Finep’s budget and aligned with the climate portfolio strategy. This will take into consideration Green Procurement Criteria to ensure that goods and services to be contracted also promote environmentally sustainable actions.
   10. **Component 3. Awareness and outreach (US$50,000)**. This component will support Finep to position itself as Brazil’s top climate innovation institution and increase dissemination of project outcomes among key stakeholders, validating key products of the TC and improving their diffusion:
   11. **Organizing workshops** meetings and consultations to validate findings and recommendations resulting of activities of components 1 and 2. This will also include a final event to disseminate key outcomes with the IDB and stakeholder in government, industry and academia. The IDB CTI and CCS teams will also develop an in-house evaluation of the final results of all the activities carried out**.**
   12. The total cost of this TC will be US$750,000 of which US$500,000 will be financed by the NDC Pipeline Accelerator Multidonor Trust Fund (ACL) and US$250,000 will be funded by OC Strategic Development Program for Institutions (INS), with the following breakdown:

**Indicative Budget**

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| **Activity/Component** | **ACL**  **Funding** | **INS**  **Funding** | **Total Funding** |
| **Component 1. Assessing priority climate technologies**  1.1 Analyzing climate technologies  1.2 Assessment of Finep’s portfolio | US$100,000 | US$80,000 | **US$ 180,000**  US$80,000  US$100,000 |
| **Component 2. Design of Finep *Clima* Program**  2.1 Climate mission-oriented policy  2.2 Measurement, reporting and verification  2.3 Design financial instruments  2.4 Strengthening institutional capacity | US$100,000  US$100,000  US$150,000 | US$100,000  US$70,000 | **US$ 520,000**  US$100,000  US$100,000  US$100,000  US$220,000 |
| **Component 3. Awareness and Outreach**  3.1 Workshops | US$50,000 |  | **US$ 50,000**  US$50,000 |
| **Total** | **US$ 500,000** | **US$250,000** | **US$ 750,000** |

1. **Executing agency and execution structure** 
   1. In response to the request made by Finep, the Bank will execute this TC through the Competitiveness and Innovation Division (CTI) and Climate Change and Sustainability Division (CCS). This will ensure project’s strong alignment to the Innovation for Growth CCLIP and effective contribution to the design of the operation’s second individual loan; as well as ensure Finep and MCTIC have access to the Bank’s wide-ranging and noticeable international expertise in developing innovation and climate change programs, which will be critical not only to be celerity of implementation, but also achieving the TC’s expected outcomes and effective project management.
   2. The IDB will manage TC activities to reduce implementation risks, define a more strategic action plan to meet the operation’s objective and identify synergies with current and future projects, particularly the Innovation for Growth Project (4358/OC-BR), developed in partnership with Finep. As the executing agency, the IDB will follow its procurement policies and guidelines related to hiring processes: (i) individual consultants will be hired in accordance with the guidelines set out in policy AM-650; (ii) consulting firms of an intellectual nature only will be hired in accordance with policy GN-2765-1 and its related Operational Guidelines (OP-1155-4); and (iii) logistics and other related services in accordance with GN-2303-20 (Corporate Procurement Policies). Bank policies will also apply to third parties hired to implement this TC.
   3. Any information, data and reports resulted by this TC, as well as its follow up findings, shall be owned by the Brazilian Government, represented by Finep, which will grant use to the Bank project implementers involved in activities to use it, provided previous consultation is undertaken with Finep.
2. **Major issues** 
   1. The following risks and mitigation measures have been identified:

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| Risk: capacity to coordinate and engage relevant stakeholders to define priority mitigation and adaptation technologies | Mitigation measure: CTI and CCS staff have been actively engaging with Finep, the MCTIC, MMA and other relevant stakeholders dealing with innovation and climate change in Brazil. An outreach platform will be created to kick-start discussions among these actors and to ensure their buy-in to deliver an innovation needs assessment, to support wider climate commitments. |
| Risk: mission-oriented framework fails to address barriers towards innovation and in mainstreaming climate change as a mission. | Mitigation measure: a first study was carried out by MCTIC and CGEE, involving innovation players and this approach will be tailored to Finep. Capacity building sessions will also be carried out internally and externally to increase awareness and ensure effective delivery of climate innovation projects. |
| Risk: changes in the new Brazilian administration priorities and in administrative structures and governance causes delay to project or undermines governmental buy-in due to changes in climate related policies. | Mitigation measure: the CTI and CCS teams are closely engaged with Finep and MCTIC, ensuring institutional buy-in at technical and political level and monitoring potential alterations to long-term development and climate plans and priorities. |

1. **Environmental and Social Strategy** 
   1. As the proposed TC will involve consulting services and studies, it is classified as a low risk Category C operation - OP-703, ([Safeguard Screening Form](https://idbg.sharepoint.com/teams/EZ-BR-TCP/BR-T1412/15%20LifeCycle%20Milestones/BR-T1412_SSF_20190625_1520.pdf) and [Safeguard Policy Filter Report](https://idbg.sharepoint.com/teams/EZ-BR-TCP/BR-T1412/15%20LifeCycle%20Milestones/BR-T1412_SPF_20190625_1520.pdf)). As this project aims at reducing GHG mitigation from strategic sectors (e.g. energy, agriculture, infrastructure and industry) and increasing resilience, there are no potential negative environmental or social impacts.

**Required Annexes:**

[Request from the Client - BR-T1412](https://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-621245918-10)

[Results Matrix - BR-T1412](https://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-621245918-11)

[Terms of Reference - BR-T1412](https://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-621245918-6)

[Procurement Plan - BR-T1412](https://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=EZSHARE-621245918-7)

1. UNFCCC. [NDC Registry. Brazil’s First NDC](https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx). [↑](#footnote-ref-2)
2. Pedro Piris-Cabezas, Ruben Lubowski, Steve Schwartzman, Alexander Golub and Nathaniel Keohane, 2016. [Cost-Effective Emissions Reductions beyond Brazil’s International Target: Estimation and Valuation of Brazil’s Potential Climate Asset. of the Environmental Defense Fund (EDF).](http://www.edf.org/sites/default/files/cost-effective-emissions-reductions-brazil.pdf) [↑](#footnote-ref-3)
3. UNFCCC, 2017. TEC Brief #10. Technology Innovation for the Paris Agreement. [↑](#footnote-ref-4)
4. Defined by Mazzucato and Penna (2016). [Brazilian Innovation System: A Mission Oriented Policy Proposal](https://www.cgee.org.br/documents/10195/1774546/The_Brazilian_Innovation_System-CGEE-MazzucatoandPenna-FullReport.pdf). [↑](#footnote-ref-5)
5. CGEE, 2016. [The Brazilian Innovation System](https://www.cgee.org.br/documents/10195/1774546/The_Brazilian_Innovation_System-CGEE-MazzucatoandPenna-FullReport.pdf). [↑](#footnote-ref-6)
6. Finep, 2016. [Áreas Prioritárias 2016](http://webcache.googleusercontent.com/search?q=cache:YF0BbcLjGJYJ:www.finep.gov.br/apoio-e-financiamento-externa/instrumentos-de-apoio/financiamento-reembolsavel/areas-prioritarias+&cd=1&hl=en&ct=clnk&gl=br). [↑](#footnote-ref-7)