

## Technical Cooperation Document

### 1 Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	Informing the Design of Long-Term Decarbonization Strategies
▪ TC Number:	RG-T3575
▪ Team Leader/Members:	Vogt-Schilb, Adrien (CSD/CCS) Team Leader; Delgado, C. Raul (CSD/CCS) Alternate Team Leader; Almeida Oleas, Natalia (LEG/SGO); Breton, Herve Jeanmarie (CSD/CCS); Brusa, Federico (CSD/CCS); Colonna Urdaneta, Maurizio (CSD/CCS); Fernandez-Baca, Jaime (CSD/CCS); Gomez, Juan Carlos (CSD/CCS); Iju Fukushima, Ana Saori (CSD/CCS); Jaramillo Gil, Marcela Cristina (CSD/CCS); Saavedra Gomez, Valentina (CSD/CCS); Salas Parra, Cristian (CSD/CCS); Sandoval Pedroza, Jose Manuel (CSD/CCS)
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	N/A
▪ Date of TC Abstract authorization:	03 Jun 2020
▪ Beneficiary:	Chile, Peru and Colombia
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	French Climate Fund for Latin America and the Caribbean(FRC)
▪ IDB Funding Requested:	US\$997,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (Execution):	30 months
▪ Required start date:	September 2020
▪ Types of consultants:	Firms and individuals
▪ Prepared by Unit:	CSD/CCS-Climate Change
▪ Unit of Disbursement Responsibility:	CSD-Climate Change and Sustainable Development Sector
▪ TC included in Country Strategy:	Yes
▪ TC included in CPD:	No
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Environmental sustainability; Institutional capacity and rule of law

### 2 Objectives and Justification of the TC

- 2.1 Stopping the climate crisis requires ambitious policy reforms from all countries. Through the Paris Agreement, global leaders have pledged to make efforts to stabilize the increase in global temperature well below 2°C, and preferably below 1.5°C.<sup>1</sup> The Intergovernmental Panel on Climate Change (IPCC) confirmed in 2018 that these targets require reaching net-zero carbon emissions by around 2050.<sup>2</sup> Reaching net zero-carbon emissions is technically possible, leveraging: (i) decarbonization of electricity production; (ii) electrification of transport and other energy uses; (iii) public transportation; and (iv) preservation and restoration of natural carbon sinks such as forests.<sup>3</sup>

<sup>1</sup> United Nations, "Paris Agreement", 2015.

<sup>2</sup> IPCC 2018, Intergovernmental Panel on Climate Change. *Climate Change 2014, Synthesis Report*.

<sup>3</sup> IDB, DDPLAC 2019. [Getting to Net-Zero Emissions: Lessons from Latin America and the Caribbean](#).

- 2.2 The transition to net-zero emissions comes with economic opportunities—including the creation of 15 million net jobs in Latin-America and the Caribbean (LAC) by 2030—and can guide efforts for a sustainable post-COVID-19 recovery.<sup>4</sup> Yet, getting to net-zero will require to anticipate and manage hurdles to the transition, notably social<sup>5</sup> and fiscal<sup>6</sup> costs, and to overcome regulatory barriers that prevent the adoption of zero-carbon solutions by the private sector. To guide the necessary transformations, countries are invited by the Paris Agreement (Art. 4.19) to formulate and communicate Long-Term Low-emission development Strategies (LTS), which will help countries set up their vision of a decarbonized economy and identify cross-cutting and sectoral policy roadmaps to be deployed over time to achieve their vision in an economically beneficial and socially just manner.
- 2.3 This TC builds on IDB research (including from RG-E1563, ATN/FR-17301-RG, and ATN/MC-16271-RG) that shows LTS will be essential to guide short and medium-term actions, so that these are not detrimental to long-term decarbonized development.<sup>7</sup> Some actions seemingly virtuous in the short term regarding emission reductions, such as replacing coal power with natural gas, can lead to carbon lock-in, stranded assets, and jeopardize the achievement of long-term decarbonization.<sup>8</sup> Nationally Determined Contributions (NDC) fail to put economies on a pathway to achieve temperatures in line with the objectives of the Paris Agreement.<sup>9</sup> For instance, to achieve emissions targets consistent with the Paris Agreement temperature goals, LAC should produce 60 to 70% of its electricity from zero-carbon sources by 2050; but under the current NDC structure the share of zero-carbon sources will remain at 53 percent by 2030.<sup>10</sup> LTS can help countries align their NDC with the decarbonization objective. IDB research shows that LTS are can also be used to design green financial strategies for ministries of finance.
- 2.4 This TC also builds on lessons learnt in the execution of the Deep Decarbonization Pathways LAC research project (DDPLAC, ATN/MC-16271-RG). DDPLAC helped build the capacity of local academia to investigate emission reduction pathways in Argentina, Colombia, Costa Rica, Ecuador, Peru and Mexico. It has strengthened a dialogue between modelers and policymakers in these countries. It created a venue for regional peer exchange on modelling decarbonization pathways. It allowed making the issue of decarbonization strategies more prominent in the region, as well as at the IDB—including in its Climate Change Sector Framework Document (SFD)<sup>11</sup>— and it helped establish the Bank as a prominent partner in LAC to build LTS, as demonstrated by the country requests for this project.
- 2.5 DDPLAC has shown that modelling exercises can inform the design of LTS. It has confirmed that building capacity at local academia is key for the national credibility of the research and the sustainability of the modeling efforts, as universities continue to use models to inform government policy after the project has ended. DDPLAC also showed the value of: (i) using international technical teams to build capacity at local universities;

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<sup>4</sup> IDB and ILO, 2020. [Jobs in a net-zero emissions future in Latin America and the Caribbean](#); Hepburn et al. “Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?”.

<sup>5</sup> Vogt-Schilb, et al, 2019. [Cash transfers for pro-poor carbon taxes in Latin America and the Caribbean](#).

<sup>6</sup> IEA, 2019. [Government revenue from taxation](#), in: Global EV Outlook 2019; IDB, 2019. [Implications of Climate Targets on Oil Production and Fiscal Revenues in Latin America and the Caribbean](#).

<sup>7</sup> IDB, DDPLAC 2019, [Getting to Net-Zero Emissions](#).

<sup>8</sup> González-Mahecha, et al., 2019. [Committed emissions and the risk of stranded assets from power plants in LAC](#).

<sup>9</sup> UNEP [Emissions Gap Report 2019](#) ; UNFCCC (2016) [Synthesis report on the aggregate effect of INDCs](#)

<sup>10</sup> Binsted, et al, 2019. [Stranded asset implications of the Paris Agreement in LAC](#). Environ. Res. Lett.

<sup>11</sup> Lewis, A., Vogt-Schilb, A., 2018. IDB [Climate Change Sector Framework Document](#).

and (ii) regional peer exchange to improve the technical quality of the work in all countries. This project retains these features.

- 2.6 Results of DDPLAC were disseminated at the 25<sup>th</sup> Conference of the Parties (COP-25) of the United Nations Framework Convention on Climate Change (UNFCCC) through an IDB report jointly launched with the French Development Agency (AFD).<sup>12</sup> The report paved the way for LTS approaches in the region. The AFD and the IDB have then agreed to coordinate their support in helping governments model emission reduction pathways.<sup>13</sup> This project is designed to enable cooperation activities with AFD.
- 2.7 DDPLAC was also successful in supporting policy. The Government of Costa Rica designed its LTS, called the National Decarbonization Plan, using DDPLAC modelling results.<sup>14</sup> It includes more than 70 targets for 35 different government agencies and line ministries to implement by 2023. The plan now serves as a basis for the development plans of many line ministries and for the national strategy coordinated by the country's Ministry of Planning, and helps the government align *upstream policy, legislation, regulations, planning, and organizational capacities*<sup>15</sup> with environmental goals. It plays a prominent role in the IDB Country Strategy<sup>16</sup> allowing the IDB to *align its operations with long-term decarbonization pathways*<sup>17</sup>. The policy roadmap defined in the plan formed the basis for a Policy-Based Loan co-funded with the AFD.<sup>18</sup> The plan guides technical cooperation efforts, led by IDB divisions including Transport, Environment, Rural Development and Disaster Risk Management (RND), Climate Change and Fiscal and Municipal Management, includes: (i) the evaluation of the costs and benefits of the plan (finding that decarbonizing transport will bring about US\$20 billion in net benefits to the country by 2050 with lower operational costs, time saved in congestion, reduced health impacts and reduced accidents compensating the initially higher costs of electric vehicles),<sup>19</sup>; (ii) management of its fiscal impacts; (iii) definition of business models to facilitate the uptake of electric buses; (iv) definition of a payment for ecosystem services to enable reforestation targets required to reach net zero emissions; and (v) update the country's NDC to align it with the LTS.
- 2.8 Experience from Costa Rica confirms that for LTS to be politically acceptable, they must be designed with extensive stakeholder participation.<sup>20</sup> The Costa Rican plan was designed in a co-construction process that included all relevant government agencies, the private sector, civil society and academics. Indeed, ministries of environment typically have the knowledge and institutional responsibility to lead the design of climate policy; nonetheless, to be relevant and widely accepted, LTS should be co-designed with all relevant sectors of the government (e.g. energy, agriculture, transport, planning and finance ministries), and seek to achieve both development and environmental goals.<sup>21</sup> This project will facilitate such stakeholder engagement processes and quantify development benefits of decarbonization.
- 2.9 Key for the positive outcomes in Costa Rica was the fact that the government had actively approached the ATN/MC-16271-RG operation team to be included in the project (other

<sup>12</sup> IDB, DDPLAC 2019, [Getting to Net-Zero Emissions: Lessons from Latin America and the Caribbean](#).

<sup>13</sup> ORP-AFD Deep Dive of April 2020.

<sup>14</sup> Costa Rica, 2019. [National Decarbonization Plan](#). LTS submitted to the UNFCCC.

<sup>15</sup> Inter-American Development Bank, IDB Invest, 2018. [What is Sustainable Infrastructure?](#)

<sup>16</sup> IDB Group Strategy with Costa Rica 2019-2022.

<sup>17</sup> Answering a central question in IDB (2017) Delivering A Climate Agenda for LAC: IDB Group Actions to 2020, p.32.

<sup>18</sup> IDB, 2020. [Towards a green economy: support for Costa Rica's decarbonization plan](#) (Loan No. CR-L1142).

<sup>19</sup> IPCC 2018, *Climate Change 2014, Synthesis Report*.

<sup>20</sup> Vogt-Schilb, A., Hallegatte, S., 2017. [NDCs: Reconciling the Needed Ambition with the Political Economy](#);

<sup>21</sup> World Bank., 2015. [Decarbonizing Development: Three Steps to a Zero-Carbon Future](#).

country studies under that Research and Dissemination TC had been selected based on the availability of technical teams, with the governments simply providing an informal non-objection). This project is a Client-support TC focused on Chile, Colombia and Peru.

- 2.10 Colombia and Peru benefitted from DDPLAC, which built the capacity of local institutions in terms of modelling, and established proof of concepts regarding decarbonization strategies. Chile benefits from a strong dialogue with the IDB on low carbon development initiated prior to COP-25 (ATN/OC-17504-CH), supported in particular with technical assistance on a just transition.<sup>22</sup> Chile also has a target to reach net-zero emissions by 2050.
- 2.11 The aspiration of this TC is to replicate in Chile, Colombia and Peru some of the success stories of Costa Rica in the decarbonization agenda. The desired outcome is to see these three countries submit ambitious LTS consistent with decarbonization by 2050 to the UNFCCC. Ideally these LTS should be detailed enough to: (i) serve as a basis for domestic policy design and IDB policy-based loans; and (ii) inform the design of sectoral development strategies and IDB investment loans. This TC will support this ambitious goal with the following specific objectives: (i) facilitate engagement with national stakeholders to understand how decarbonization can help advance sectoral development goals in each country to improve both the relevance of local analysis and the buy-in from national stakeholders; (ii) produce numerical simulations to assess options that allow reaching net-zero emissions while advancing development objectives to inform the design of sectoral pathways in the LTS by the government; (iii) continue building the domestic analytical capacity to deliver objectives (i) and (ii), to improve the sustainability of the project over time; (iv) enable a regional peer exchange and regional comparison of lessons learned, to improve the quality of the work done by the countries and provide regional relevance of the project; and (v) use the results to communicate the feasibility and benefits of decarbonization in LAC and share lessons learnt on the role of Multi-lateral Development Banks to facilitate the design of decarbonization strategies to other borrowing members and other development institutions. This is expected to create demand for similar projects in the future, support efforts by the global development community and other countries—including outside the region—to design and implement decarbonization strategies in the context of the Paris Agreement.
- 2.12 In parallel, the AFD will tentatively fund similar projects in three other LAC countries, building on the previous work of DDPLAC in Ecuador and Mexico, and pursue additional specific analyses in parallel to the deployment of the LTS in Costa Rica. The IDB and AFD will seek to exchange lessons learned from their respective projects by inviting each other to the national workshops mentioned under objective (i) and organizing jointly the regional workshops mentioned under objective (iv) above.
- 2.13 This operation is consistent with the Update to the Institutional Strategy (AB-3190-2) and is aligned with the development challenge of productivity and innovation by providing training for government agencies and academia—in cutting-edge climate modeling methodologies—and by generating innovative knowledge to assist countries in the design of better NDC. It is also aligned with the cross-cutting themes of: (i) climate change and environment sustainability, as it seeks to enhance the planning capacity of governments in the design of LTS and NDC, which are critical to respond to the objectives of the Paris Agreement to limit the global temperature rise to well below 2°C, and manage climate related risks; and (ii) institutional capacity and the rule of law, as it seeks to

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<sup>22</sup> Vogt-Schilb, A., Feng, K., 2019. [The labor impact of coal phase down scenarios in Chile](#).

strengthen the capacity of relevant institutions that intend to improve their long-term planning to tackle climate change and seize development opportunities.

- 2.14 This operation contributes to the Corporate Results Framework 2020-2023 (GN-2727-12), indicator “agencies with strengthened digital technology and managerial capacity”, contributing to advance the Institutional capacity and rule of law institutional priority. Also, in the long term, the project will contribute to indicator 19 of the IDB Group Contributions to Development Results “Emissions avoided (annual tons CO<sub>2</sub> equivalent)”, advancing the Climate change and Environmental Sustainability priority. Additionally, the project is aligned with the SFDs for: Climate Change (GN-2835-8) as it “helps countries design, strengthen and implement their NDC and LTS”; Energy (GN-28308) by favoring the diversification of energy portfolios; and Transport (GN-2740-7) by supporting electromobility strategies. The operation contributes to implement the French Climate Fund for Latin America and the Caribbean (FRC) objective of “generating strategic knowledge on climate change” in LAC, by designing new methodologies, delivering research policy dialogue events and enabling a conversation about decarbonization in three countries.

### **3 Description of Activities/Components and Budget**

- 3.1 **Component 1. National policy dialogue and stakeholder engagement (US\$15,000).** To enable a co-construction process of emission reduction pathways in each country, the operation’s team will rely on three national stakeholders’ engagement workshops with the following respective objectives: (i) guide the research performed under Component 2 by understanding sectoral development goals, decarbonization options, existing data, models and studies from the energy, transport and land use sectors; (ii) present midterm results to the same stakeholders for validation of assumptions and to steer further research; and (iii) disseminate the findings about the feasibility, relevance, benefits and potential costs of long-term decarbonization options. Due to the pandemic, the first two workshops will be held virtually (at no cost). The operation team has extended experience with virtual workshops and guarantees their feasibility. This component may be used to fund travel of IDB staff members to the third round of workshops should public health conditions allow it.<sup>23</sup>
- 3.2 **Component 2. Assessing politically acceptable emission-reduction pathways (US\$435,000).** Modelling work by local institutions in Chile, Colombia and Peru will be carried out in order to support the assessment of emission-reduction pathways in the main emissive sectors (energy, transport and land-use) in terms of their economic benefits, stranded assets risks, distributional incidence, or fiscal impacts. The corresponding studies will be commissioned by the IDB, in coordination with ministries of environment. Academic teams in each country will produce a report for policymakers with lessons and recommendations drawn from their numerical simulations for the design of a long-term emission reduction strategy. Academics are working from home during the pandemics.
- 3.3 **Component 3. Capacity building and model transfer (US\$342,000).** Three teams of international modelers will be hired to support each of the local teams in charge of delivering Components 1 and 2. International experts will be selected in coordination with ministries of environment, based on previous experience using models to inform long-term strategies, and willingness to transfer modelling capacity to the domestic teams. These experts will: (i) provide training to specialists in domestic universities in the use of numerical simulations, and feedback on the technical work they carry out by email

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<sup>23</sup> The resources of this TC will not be complementing Bank Sector Budget.

and videoconference; and (ii) participate in modelling efforts and stakeholder engagement in national workshops, replicating the successful organization by DDPLAC.

- 3.4 **Component 4. Regional peer exchange (US\$155,000).** Subcomponent 4a: Regional workshops. Two regional workshops will be held to facilitate a discussion and exchange of lessons learnt between the modelers and key government staff participating in this project, as well as the participants of the parallel AFD project (AFD will fund two other similar workshops with participants of the IDB project attending). The first workshop will be held online. The second workshop is intended to be held in-person in 2021. This component may be used to fund travel of IDB staff members to such workshops.
- 3.5 Subcomponent 4b: Regional quality control and lessons learnt. A firm with experience in DDP modelling will be hired to complement the peer review process and enhance technical rigor of emission reduction pathways, provide technical advice to all three national teams in an ad-hoc fashion, and produce a discussion paper drawing lessons learnt at the regional scale from the comparison of the three national projects and the AFD-funded parallel project.
- 3.6 **Component 5. Communication and dissemination (US\$50,000).** The Bank will communicate lessons learned to a wide regional and global audience of policymakers, policy analysts, academia, donor countries, and the public. This component will fund typesetting, edition, and translation of the publications produced under the other components. It will also fund social media campaigns, and the participation of experts, government officials, and IDB staff involved in this project in dissemination events if the global health conditions improve and such events become part of our work again.

**Indicative Budget (US\$)**

<b>Component/Description</b>	<b>IDB/Fund</b>	<b>Counterpart</b>	<b>Total</b>
Component 1. online & in person workshops (if conditions allow)	15,000	0	15,000
Component 2. Local universities (3 countries, \$140K research contract/country, covers 1-yr. FTE PhD student, supervision)	435,000	0	435,000
Component 3. Research – International Academia (3 countries, 0.8-years FTE of PhD student, supervision)	342,000	0	342,000
Component 4. One online regional workshop	0	0	0
Component 4. 1 in-person regional workshop (40 international participants, \$1,500/participant –travel, lodging, and incidentals)	60,000	0	60,000
Component 4. Regional quality control & report on lessons learnt	95,000	0	95,000
Component 5. Translation, edition, typesetting, production	50,000	0	50,000
<b>TOTAL</b>	<b>997,000</b>	<b>0</b>	<b>997,000</b>

#### **4 Executing Agency and Execution Structure**

- 4.1 The regional coverage of the activities to be performed, the limited technical capacity in the region available to coordinate this project, and the request from the beneficiary countries position the IDB as the ideal executing agency for the operation. The implementation of the activities of this TC in Chile will not start before the liaison entity with the Bank in Chile communicates his no-objection to the Bank. The execution will be carried out by the Climate Change Division of the IDB (CSD/CCS). Adrien Vogt-Schilb, Climate Change Specialist, will lead the operation and be responsible for overall quality control, alignment of the products with CCS strategy, and the leveraging of state-of-the-art knowledge and all disbursements.
- 4.2 The Bank will follow its procurement policies and guidelines related to contracting processes: (i) individual consultants will be hired according to the guidelines established in policy AM-650; (ii) consulting firms of an intellectual nature will be hired according to the “Policy for the selection and contracting of consulting firms for operational work

carried out by the Bank” (GN-2765-4) and its Operational Guides (OP-1155-4); and (iii) other non-consulting services in accordance with the “IDB Institutional Procurement Policy” (GN-2303-28). The knowledge products derived from this TC will be the Bank's intellectual property.

- 4.3 Cristian Salas, (IDB Country Office in Chile), Marcela Jaramillo, and Federico Brusa will lead the dialogue with the Government of Chile; Jaime Fernandez-Baca and Ana Iju (IDB Country Office in Peru) and Valentina Saavedra will lead the dialogue with the Government of Peru; Jose Sandoval (IDB Country Office in Colombia) and Valentina Saavedra will lead the dialogue with the Government of Colombia. In each country they will manage: (i) the organization of workshops; (ii) the review of the products from local technical teams; (iii) the coordination with relevant IDBG specialists from INE and CSD as well as IFD, SCL, BID Invest and BID lab as relevant; and (iv) the quality of the products, as well as their relevance for the governments.
- 4.4 Specialists from the Transport, Energy, Water and Sanitation, Competitiveness and Innovation, Housing and Urban Development, RND, and Research Divisions, BID Invest and BID Lab, will be invited to the national workshops to review the deliverables. Specialists from the 2050 Pathways Platform, AFD, World Bank, United Nations, and the International Labor Organization will also be invited to the national workshops. AFD intends to execute a parallel project and participate in the regional peer exchange (Component 4, see 2.6 and 2.13).

## **5 Risks**

- 5.1 The pandemic and subsequent economic crisis may cause countries to reduce the ambition of their LTS and cause delays in the design and communication of the LTS to the UNFCCC. To reduce this risk, discussions will be oriented towards long-term horizons and evidence-based narratives will be constructed on the socioeconomic benefits of decarbonization. Countries may decide to aim to communicate LTS at the UNFCCC's Conference of the Parties in Glasgow in December 2021 and experience a few weeks of delays. Our 2022 timeline for the main outcomes accommodates this possibility.
- 5.2 Some risks pertain to the necessity of securing strong multi-year commitments from partners in the region and to the availability of dedicated staff and time to model development and application within these partners' organizations. We mitigate this risk by identifying potential partners before starting the execution of the TC.
- 5.3 The effective execution of a parallel project by AFD is not a given. The AFD might fail to secure funding or decide to cancel the project. We anticipated this risk by designing an operation that is executable independently from AFD's. While this operation will benefit from lessons learnt from the AFD parallel operation, in the worst case this operation can be executed as a standalone project. In that case, the budget of Component 4 would be reallocated to fund 4 workshops with 20 participants.

## **6 Exceptions to Bank Policy**

- 6.1 There are no exceptions to the Bank's policies in this operation.

## **7 Environmental and Social Strategy**

- 7.1 Per the Environment and Safeguards Compliance Policy of the IDB (OP-703), the operation has been classified as 'Category C' (see the [Safeguard Screening Form](#) and the [Safeguards Policy Filter](#)).

**Required Annexes**

- [Request from the client](#)
- [Results Matrix](#)
- [Terms of Reference](#)
- [Procurement Plan](#)