

Transparency and Long-Term Strategies Scoping Analysis Report



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Scoping Analysis Report

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This document was prepared for the United States Agency for International Development (USAID) by ICF. Please visit the T-LTS [project site](#) to learn more about the Transparency and Long-Term Strategies project.

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TABLE OF ABBREVIATIONS

Acronym	Definition
AFD	Agence Française de Développement
AFOLU	Agriculture, Forestry, and Other Land Use
BAU	Business-as-usual
BUR	Biennial Update Report
CAEP	Climate Action Enhancement Package
CBIT	Capacity Building Initiative for Transparency
CDKN	Climate and Development Knowledge Network
CEEW	Council on Energy, Environment, and Water
CIFF	Children’s Investment Fund Foundation
COP	Conference of Parties
CRGE	Climate Resilience Green Economy
DDP	Deep Decarbonization Pathways
DfID	Department for International Development
EDGE	Enhancing Development and Growth through Energy
EFFECT	Energy Forecasting Framework and Emissions Consensus Tool
FAO	Food and Agriculture Organization
GAINS	Gas and Air Pollution Information and Simulation
GGAP	Green Growth Action Plan
GGGI	Global Green Growth Institute
GHA	Greater Horn of Africa
GHG	Greenhouse Gas(es)
GTG	Greening the Grid
IDB	Interamerican Development Bank
IEG	Institute of Economic Growth
IIMA	Indian Institute of Management Ahmedabad
LCA	Latin America and the Caribbean
LCDI	Low Carbon Development Initiative
LEAP	Long-range Energy Alternatives Planning
LED	Low Emission Development
LEDS	Low Emission Development Strategies
LTMS	Long-Term Mitigation Scenarios
LTS	Long-Term Strategies

MADS	Ministry of Environment and Sustainable Development
MAPS	Mitigation Action Plans and Scenarios
MOIT	Ministry of Industry and Trade
M&E	Measuring and Evaluation
MOT	Ministry of Transportation
MTP	Medium Term Plan
MRV	Monitoring, Reporting, and Verification
NARUC	National Association of Regulatory Utility Commissioners
NCAER	National Council of Applied Economic Research
NCCAP	National Climate Change Action Plan
NDC	Nationally Determined Contribution
NERC	Nigeria Electricity Regulatory Commission
OECD	Organization for Economic Cooperation and Development
PACE	Partnership to Advance Clean Energy
PDP	Power Development Plan
POLES	Prospective Outlook on the Long-term Energy System
PPD	Peak, Plateau, Decline
PREPARED	Planning for Resilience in East Africa through Policy, Adaptation, Research and Economic Development
PRIME	Pastoralist Areas Resilience Improvement through Market Expansion
SDSN	Sustainable Development Solutions Network
SEI	Stockholm Environment Institute
SURE	Scaling Up Renewable Energy
TASCA	Tracking and Strengthening Climate Action
TIMES	The Integrated MARKAL-EFOM System
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
WRI	World Resources Institute

1. EXECUTIVE SUMMARY

Overview of Transparency and Long-Term Strategies

To support low-emissions development and decarbonization, countries are increasingly looking to develop long-term strategies (LTS). LTS is a policy tool that helps a country identify development priorities and pathways that help achieve mid-century greenhouse gas (GHG) reductions. The vision defined in a LTS can inform the development of shorter-term plans, such as nationally determined contributions (NDC) under the Paris Agreement. A robust LTS is supported by documentation of the underlying assumptions and data so that government can transparently communicate to stakeholders how targets are developed and what actions would be included to achieve goals.

Improved transparency is important to support long-term climate change strategies but also multiple development objectives. Transparency can ensure that development assistance is properly utilized and outcomes from that assistance are accurately monitored and evaluated. Transparency is also a foundational pillar for democratic governance and free and competitive markets. It can promote a shared vision for development and enhance overall public trust. Additionally, it can create a favorable investment climate in emerging markets and can ensure that all countries are held to the same standard.

This scoping analysis was conducted under the USAID Transparency and Long-Term Strategy (T-LTS) project. The purpose of this analysis is to provide an overview of the current international transparency and long-term planning landscape to inform USAID and partner capacity-building efforts. The goal of the T-LTS project is to improve country capacity for modeling low-emission pathways to 2050, as well as ensuring that assumptions and data are robust and well-documented. The T-LTS project also aims to empower USAID Missions in integrating transparency and LTS considerations into their activities

Donor Engagement and Existing Modeling Capabilities

Many donors are providing technical assistance on transparency and LTS. Some key donors include the 2050 Pathways Platform, the Low-Emissions Development Strategies Global Partnership, ClimateWorks Australia, GIZ, World Resources Institute, the NDC Partnership, and the Interamerican Development Bank. Although donors have worked on transparency issues for many years, planning to mid-century is an emerging topic for most agencies and governments. Donors are providing a mix of bilateral technical assistance, regional trainings, global trainings, peer-to-peer exchanges, knowledge products, and modeling support.

There are some existing models in use for developing LTS, but there is no one-size-fits-all approach. Countries have developed or adopted tools that are multi-sector or focus in on a specific sector (most commonly energy and agriculture, forestry, and other land use). The most commonly used models including the LEAP, GAINS, and TIMES models.

Transparency and LTS Opportunities with Select USAID Countries

There are several USAID countries that are developing LTS or have activities that are well-aligned with long-term planning (e.g., activities that derive from the Enhancing Capacity for Low Emissions Development Strategies program). Some USAID Missions have current or planned activities that could be complemented with transparency and LTS technical assistance.

2. INTRODUCTION

Analysis Overview

This scoping analysis was conducted under the USAID Transparency and Long-Term Strategy (T-LTS) project. The purpose of this analysis is to provide an overview of the current international transparency and long-term planning landscape to inform USAID and partner capacity-building efforts. The analysis' intended audience includes USAID headquarters staff and Missions, as well as other active partners supporting long-term planning initiatives.

This scoping analysis includes:

- An introduction to the concepts of transparency and long-term strategies (LTS) as they relate to development objectives;
- Context on how transparency and LTS are connected to the Paris Agreement;
- An overview of existing donor activities related to transparency and LTS;
- Examples of models being used for developing LTS;
- Findings from desk research and donor and mission consultations about existing LTS activities for select countries; and
- Highlights of countries and themes where the T-LTS project could provide technical assistance.

Long-Term Strategies, Transparency, and Development Objectives

LTS are a policy tool to help countries identify development priorities and pathways that help achieve mid-century greenhouse gas (GHG) reduction targets. The contents of a LTS can vary, including different elements depending on the goals and/or needs of the country. Typically, a LTS will include a country's long-term vision or goal as it relates to sustainable development, and GHG mitigation, adaptation, and/or sectoral objectives. A LTS will also typically include pathways for achieving these objectives as well as provisions for monitoring progress and making planned improvements. Countries will need to determine the elements to be included in their respective LTS.

Transparency, in the context of LTS and the Paris Agreement, refers to the documentation and reporting of information (i.e., data, models, assumptions) that underpins target setting, scenario planning, and monitoring. More broadly, transparency supports good governance, builds trust, and promotes development outcomes and accountability. Transparency is a foundational pillar for democratic governance and free and competitive markets. It can promote a shared vision for development and enhance overall public trust. Transparency can also ensure that development assistance is properly utilized and outcomes from that assistance are accurately monitored and evaluated; this can help countries realize their development goals and support them on the pathway to self-sufficiency. Additionally, it can create a favorable investment climate in emerging markets and can ensure that all countries are held to the same standard.

Established under the United Nations Framework Convention on Climate Change (UNFCCC), the [Paris Agreement](#) serves as the framework for global efforts to mitigate and adapt to the impacts of climate change.

Because LTS outline national goals, they can inform short- and medium-term strategies and national policymaking that transform a vision into implementation. They can also provide a framework for countries to increase the ambition of their current climate commitments. This can ensure that decisions supporting low-emission, sustainable development are prioritized and reduce the risk of decisions being made that undermine these goals. For example, having a clear national goal as part of a LTS could steer countries toward clean energy alternatives that would replace investment in a high-emitting, fossil fuel electricity generation facilities.

Transparency and Long-Term Strategies as Part of the Paris Agreement

Transparency and LTS provisions are both included within the Paris Agreement. Article 13 of the Agreement calls for an enhanced transparency framework that establishes the common reporting requirements for tracking progress towards the GHG reduction targets defined in each country's nationally determined contribution (NDC).¹ The [Katowice Package](#) (or "Paris Rulebook"), established at the 24th Conference of the Parties (COP24), outlines how the enhanced transparency requirements will be operationalized. Many of the requirements of the enhanced transparency framework overlap with the information required for establishing a transparent LTS.

LTS are encouraged but not required under the Paris Agreement. The Agreement states that "All Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies..." The Conference of Parties (COP), by its decision [1/CP.21](#), has invited Parties to communicate their long-term development strategies to the UNFCCC by 2020.

The Relationship Between LTS and NDCs

LTS and NDCs differ in the Paris Agreement; however, there are also opportunities for coordination between them. NDCs will be developed with more specific implementation plans than LTS and will be subject to more stringent transparency requirements under the Paris Agreement. LTS are a voluntary exercise, while NDCs are required under the Agreement. Parties are required to communicate and update NDCs every five years; whereas, they are only invited to provide an LTS in 2020 and not subsequently. The planning horizon for a NDC is also expected to be between 10-15 years, while a LTS extends to 2050.

Despite these differences, these two planning elements are [closely related](#) and can inform each other and/or be developed in tandem. For example, data collection, modeling capacity, and stakeholder engagement activities for a LTS and NDC could be done in tandem. LTS could also inform Parties' efforts to increase their overall climate ambition through subsequent NDC updates by setting a clear long-term goal. Alternatively, a NDC can help make a LTS goal a reality by facilitating the implementation of short- and medium-term actions that are consistent with the goals of its LTS.

LTS can provide countries with an opportunity to gain a better understanding of the actions needed to achieve long-term goals and how to link initial policy and program decisions to long-term outcomes as a necessary step for achieving more ambitious and complex goals and targets in the future. By framing their NDCs within the broader context of an LTS, countries can also use short- and medium-term accomplishments to build confidence as they pursue sustainable development pathways. This could encourage countries to commit to more ambitious NDCs and LTS.

Submission Tracking

Parties submitted their first NDCs in advance of the Paris Agreement's adoption and, under the Agreement, are now expected to update them every five years, starting in 2020. As of April 2020, [34](#) countries have stated that they will update their NDCs and [107](#) have stated that they will enhance the ambition or actions put forward in their NDC. Two countries have submitted updated NDCs so far.

Although countries have made ambitious commitments in their NDCs, most parties have low capacity to meet the transparency requirements or to develop a LTS. Only [17](#) countries have submitted a LTS as of April 2020.

¹ The requirement for a nationally determined contribution (NDC) is defined in Article 4 of the Paris Agreement. Parties are required to submit a NDC, which defines GHG reduction targets, every five years. Parties are required to include information on how the NDC was developed and prepare periodic reports on progress according to the enhanced transparency framework (Article 13) to enable Parties to assess whether Parties are on track to keep global warming to below two degrees Celsius.

All Parties to the Paris Agreement have submitted NDCs and developed plans for the short- and medium-term. Parties are now beginning to look beyond the NDC and establish low-emission trajectories for countries to follow over the multi-decade timeframe.

Table 1 provides a summary of the differences between LTS and NDCs.

Table 1: Summary of Differences Between LTS and NDCs

	Long-Term Strategies (LTS)	Nationally Determined Contributions (NDCs)
Scope	Defines the national vision and development priorities for a country, and links this vision and priorities to emissions pathway	Defines specific GHG emission reduction targets and more detailed implementation plans
Timeframe	2050	2030
Requirement under the Paris Agreement	Voluntary (Article 4, paragraph 19)	Required (Article 4, paragraph 2)
Frequency of Update	Parties are invited to submit a LTS in 2020 with no requirement for revisions	Parties are required to communicate and update NDCs every five years
Number of Countries with UNFCCC Submissions	17 (as of April 2020)	195 (as of 2016)

Opportunities to Support Transparency and Long-Term Planning

Improved transparency and longer-term planning support multiple development objectives, including improving governance, ensuring that development assistance is properly utilized, improving efficiencies in short- or medium-term strategies, addressing climate change issues, and supporting favorable investment environments. There are many potential opportunities where USAID Missions could address long-term planning for both climate and development objectives, including:

- Providing support to countries in linking NDC and LTS planning.
- Extending sectoral planning to the 2050 horizon to inform shorter-term activities.
- Facilitating improved institutional arrangements to support information sharing and documentation of the socioeconomic development planning process.
- Providing focused support for building the capacity to conduct GHG and economic projections.

The T-LTS project’s goal is to improve country capacity for modeling low-emission pathways to 2050 as well as ensuring that assumptions and data are robust and well-documented. The T-LTS project also aims to empower USAID Missions in integrating transparency and LTS considerations into their activities. The outcomes of this scoping analysis will inform future LTS capacity-building efforts, which will include virtual trainings and bilateral support.

3. KEY DONORS AND SUPPORT ACTIVITIES

Many donors and multilateral organizations have provided transparency-related technical assistance for multiple years to support the requirements under the Paris Agreement as well as various other development objectives. Since the launch of the 2050 Pathways Platform at the 22nd Conference of Parties in 2016, organizations have increasingly been providing technical assistance to support long-term planning for net-zero emissions by mid-century.

Some key donors and organizations providing LTS support include:



The **2050 Pathways Platform** is a multi-stakeholder initiative to support countries seeking to develop LTS for climate-resilient and sustainable development. Utilizing a mixture of internal and other donor funds, 2050 Pathways primarily serves as a convening mechanism and source of collaboration for countries, cities, regions, states, and companies to exchange ideas. 2050 Pathways fosters bilateral support through the facilitation of workshops or peer exchanges. The organization focuses on LTS development processes – predominantly for economy wide LTS, stakeholder engagement processes for setting long-term visions, aligning socioeconomic goals, and reflecting the uncertainties of development. 2050 Pathways works with many partners, including Agence Française de Développement (AFD), ClimateWorks Australia, GIZ, Institute for Sustainable Development and International Relations (IDDRI), Interamerican Development Bank (IDB), Low-Emissions Development Strategies Global Partnership (LEDS-GP), NDC Partnership, World Bank, and World Resources Institute (WRI).



ClimateWorks Australia works to bridge the gap between climate research and action and have played a key role in promoting and supporting the transition of critical sectors to low-emissions solutions. They are currently focused on robust stakeholder engagement and visioning for LTS and pathways for decarbonization in Pacific countries. They are working on the design process for LTS, which will incorporate indigenous storytelling. They are also working on a Maritime Transportation Roadmap with the Marshall Islands, decarbonization pathways in Tonga (with the Global Green Growth Institute), and financing of LTS in Indonesia (with IDDRI).



Euroclima+ is a program funded by the European Union to promote sustainable and climate-resilient development and offer a variety of services and support to assist in the implementation of NDCs. The program has facilitated peer and information exchanges between European and Latin American countries to share experiences and lessons learned about LTS development and decarbonization. Euroclima is working with the United Nations Environment Programme (UNEP), the United Nations Economic Commission for Latin America and the Caribbean (CEPAL), GIZ, and other Latin American partners on this work.



Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, or **GIZ**, is German government-owned enterprise that supports international sustainable development. GIZ is supporting LTS development and encouraging linkages with NDC enhancements through bilateral technical assistance in approximately a dozen countries. It has also supported the convening of modelers in several G20 countries, including China and

India, to facilitate knowledge sharing. GIZ is partnering with 2050 Pathways, the NDC Partnership, and LEDSGP.



Global Green Growth Institute (GGGI) is an intergovernmental organization focused on supporting and promoting inclusive and sustainable economic growth in developing countries and emerging economies. GGGI provides a variety of services to its member and partner countries to support LEDSGP development, including support for stakeholder engagement; policy assessment; modeling; policy and project prioritization and development; document preparation; and identification of project financing. GGGI led the development of Fiji's LED in 2018 and are focusing their LED support on small island developing states. GGGI is currently working alongside ClimateWorks Australia.



Institute for Sustainable Development and International Relations (IDDRI) works at the international and national levels, engaging with sectors and policymakers to ensure that there are the appropriate operating conditions for countries to ambitiously respond to and address the challenges posed by climate change. IDDRI, in collaboration with the Sustainable Development Solutions Network (SDSN) recently begun work on the Deep Decarbonization Pathways (DDP) project and created a platform that starts to answer critical questions pertaining to the specific context of countries in achieving climate and development objectives. IDDRI has expanded on this work to implement initiatives that address the critical need for capacity building in developing countries to enable them to design and develop these LEDSGP. IDDRI works with a range of partners including 2050 Pathways and IDB.



Interamerican Development Bank (IDB) provides bilateral support via technical assistance, capacity building trainings, and the provision of resources and tools to six countries in Latin America working on the development of LEDSGP. IDB has supported IDDRI on the DDP project in Latin America. In addition to supporting IDDRI, IDB works with 2050 Pathways, AFD, and Children's Investment Fund Foundation (CIFF), among others.



Low Emissions Development – Global Partnership, or LEDSGP, works to support the development and implementation of LEDSGP through collaboration, knowledge resources, peer learning/information sharing, and technical assistance. LEDSGP supports a wide breadth of work related to LEDSGP including advisory support on a bilateral basis, trainings, and tools. More recently, their focus has shifted towards country demands and implementation, where there are increasing requests for greater alignment between sustainable development goals (SDGs), NDCs, and LEDSGP. LEDSGP is seeking to scale up deeper bilateral support and funding for de-carbonization pathways and is already supporting communities of practice and exchanges of knowledge sharing both for sectoral and economy-wide decarbonization pathways with near-term actions. LEDSGP works across an array of actors including 2050 Pathways, ClimateWorks Australia, GIZ, NDC Partnership, and USAID.



The [NDC Partnership](#) works with national governments, international institutions, civil society, researchers, and the private sector to leverage their resources and expertise to provide countries with the information and tools required to effectively implement their NDCs and combat climate change. The Partnership’s [Climate Action Enhancement Package \(CAEP\)](#) works to catalyze change towards LED/LTS and aids developing countries to achieve two primary objectives: enhance/raise ambition of NDCs and fast-track NDC implementation, including providing in-country technical expertise and capacity building. The NDC Partnership is coordinating and supporting LTS through CAEP requests and country engagement plans. They have provided this support to countries in Africa, Latin America, and Asia and are currently working with a myriad of partners including 2050 Pathways, GIZ, LEDSGP, WRI, and many other NDC Partnership member institutions.



The [Organization for Economic Cooperation and Development \(OECD\)](#) has recently increased its efforts to support countries in the delivery of their NDCs and the realization of other climate and development objectives. This work has centered upon the various country-specific factors (e.g., environmental, social, economic) that are critical to the creation of effective, climate-resilient, and low-emissions development. A [recent OECD report](#) outlines potential components to a long-term LEDS (LT-LEDS); linkages between LT-LEDS and NDCs; and analyzes the experiences of countries developing LT-LEDS to date. OECD has worked with 2050 Pathways on LTS development.



[United Nations Development Programme \(UNDP\)](#) provides LTS support through their NDC Support Programme, which works with countries to support the achievement of development objectives and scaling up action on climate change. Moreover, these NDCs are a mechanism for countries to transition more broadly towards LED-LTS and the program supports efforts to eliminate barriers towards this transition. As part of the [Climate Promise](#), UNDP has pledged to support 100 countries in enhancing and aligning NDCs with other targets (e.g., LTS). UNDP also partners with WRI on the [Long-Term Strategies Project](#). UNDP works with 2050 Pathways, GIZ, LEDSGP, and WRI in Africa and Latin America.



[World Resources Institute \(WRI\)](#), in collaboration with UNDP and UN Climate Change, offer a suite of tools and resources to assist policymakers integrate LTS into their national policymaking agendas and priorities. WRI manages a [LTS Tracker](#) which monitors countries that have submitted LTS documents, documents case studies on prior LTS efforts, and offers technical expertise from a range of practitioners and sector specialists on areas related to LTS. WRI’s work on LTS contributes to 2050 Pathways and is undertaken with the NDC Partnership.



The [World Bank](#) supports the [NDC Support Facility \(NDC-SF\)](#), a multi-donor trust fund created to facilitate the implementation of NDCs, undertaken in close coordination with the NDC Partnership. The NDC-SF allocates funds to World Bank Group teams that are working towards fulfilling the climate change targets set by countries in their NDCs and supports rapid and substantive action on the country level, including on NDC-related policy, strategies, and budgeting.

Table 2 provides an overview of the types of support that donors are providing on LTS. Table 3 provides a summary of the regions in which donors are providing LTS technical assistance.

Table 2: Existing LTS Donor Activities [As of December 2019]

Organization	Capacity Building				Types of Products		Scope of Focus	
	Bilateral Technical Assistance	Regional Trainings	Global Trainings	Peer to Peer Exchanges	Knowledge Resources and Tools	Modeling/Quantitative Analysis	Economy-wide	Sectoral
2050 Pathways	✓		✓	✓	✓	✓ ^a	✓	
ClimateWorks Australia	✓				✓	✓		
Euroclima+		✓		✓			✓	
GGGI	✓				✓	✓	✓	
GIZ	✓				✓	✓	✓	✓
IDB	✓	✓			✓		✓	
IDDR	✓	✓		✓	✓	✓		
LEDS-GP	✓ ^b	✓	✓	✓	✓		✓	✓
NDC Partnership	✓			✓	✓	✓		
OECD			✓				✓	
UNDP	✓	✓	✓		✓		✓	
USAID	✓	✓				✓		
World Bank					✓	✓		✓
World Resources Institute			✓					

^a Peru; limited modeling support ^b Primarily short-term advisory

Table 3: Bilateral Donor LTS Engagement, by Region [As of December 2019]^a

Organization	Africa	Asia	Caucasus	Latin America and Caribbean
2050 Pathways	✓	✓		✓
GGGI/ClimateWorks		✓		
GIZ	✓	✓	✓	✓
IDB				✓
LEDS-GP	✓			✓
NDC Partnership	✓			✓
UNDP				✓

^a Donor support based off of desk research and preliminary consultations.

4. MODELS USED TO SUPPORT LTS DEVELOPMENT

Climate models are important tools for the development of LTS. Models provide an evidence-based approach for developing and evaluating different development scenarios for achieving a mid-century decarbonization goal. There is no one-size-fits-all model for developing LTS; however, there are many models that have been developed that are currently used for longer-term planning. Table 4 lists a range of models used by countries for modelling long-term impacts of policies and emission reduction strategies. This list was generated based on desk research and consultations and is not exhaustive.

Some of most commonly used models include the Long-range Energy Alternatives Planning System (LEAP) model, the Greenhouse Gas and Air Pollution Information and Simulation (GAINS) model, and the Integrated MARKAL-EFOM System (TIMES) model. Each of these three models has been widely used by the LTS community for multi-sectoral or energy modelling.

- The LEAP model has been widely used to support energy resource planning and GHG mitigation analysis. It is a versatile tool that can account for both energy sector and non-energy sector emission sources while also analyzing air pollution reduction climate co-benefits. Several countries have received capacity-building support from the Stockholm Environment Institute (SEI) on using the LEAP model.
- The GAINS model is able to maximize benefits of strategies that simultaneously assess local air quality, human health, and GHG emissions. The GAINS model analysis is not as detailed as the LEAP model.
- The TIMES model analyzes the energy sector. The model assesses the feasibility of targets and associated costs with new energy system configurations, which some countries have used to determine their NDCs.

Table 4: Example Models Used for Long-Term Strategy Development

Model	Description	Countries Using Model ^a
Multi-sector		
2050 Pathways Calculator	Supported by the UK Government, the 2050 Pathways Calculator was developed to provide policymakers and the public with a tool to assess different long-term decarbonization pathways.	South Africa
AIM	Asia-Pacific Integrated Model was developed to assess climate change mitigation policy options.	Asia
EFFECT	The Energy Forecasting Framework and Emissions Consensus Tool is an open-source tool that countries can use to develop GHG projections for a variety of sectors, including road transport, agriculture, power, industry, household, and non-residential sectors.	Nigeria, Vietnam
GAINS	The Greenhouse Gas and Air Pollution Information and Simulation model is used to identify cost-effective emission control strategies for local air pollution and GHG emissions.	Asia, Europe, China, India
GCAM	The Global Change Assessment Model is a model used to simulate interactions between human systems, including the energy system, water, agriculture and land use, and the climate system.	Colombia, India
IMAGE	The Integrated Model to Assess the Global Environment model assesses the impacts of human activity on the global environment.	Multiple
IV2045	The Indonesia Vision 2045 model is a multi-sectoral model which was used to develop the country's low-carbon development strategy.	Indonesia

Model	Description	Countries Using Model ^a
SAFRIM/INFORUM	The Inter- Industry Forecasting Model is a macro-economic model used to assess the impact of GHG mitigation policies in South Africa.	South Africa
Energy		
BALMOREL	The BALMOREL model supports energy sector analysis with emphasis on the electricity and the combined heat and power sectors.	Vietnam
BLUE	The Brazilian Land Use and Energy System , is a least-cost energy system optimization model. The model accounts for the entire energy system, including electricity generation, agriculture, industry, transport, and the buildings sectors.	Brazil
e-SAGE	The Energy Extended South African General Equilibrium Model is a general equilibrium economic model that has been used to assess the impact of energy and climate policies in South Africa. It can link to the TIMES Model.	South Africa
GEM-E3	The General Equilibrium Model for Economy - Energy - Environment is used primarily by the European Union to evaluate climate and energy policies and their impact on the environment.	Europe, India
GEMMES	The General Monetary and Multisectoral Macrodynamics for the Ecological Shift model is a macro-economic modeling tool developed by AFD for the energy sector. The application of the models is under consideration in several countries.	Brazil, Côte d'Ivoire, Vietnam, Colombia
LEAP	The Long-range Energy Alternatives Planning System (LEAP) model is an energy scenario modeling tool that has been widely used to support energy resource planning and low emission development strategies, and GHG mitigation analysis.	Colombia, Jamaica, Nigeria, Peru, India, Uganda, Vietnam
MARKAL	MARKAL is an energy system model that can be tailored to assess national and sub-national energy systems. The model is used by 37 countries. The TIMES model is intended to succeed MARKAL.	Various (listed here)
POLES	The Prospective Outlook on the Long-term Energy System is a global energy simulation model used to evaluate changes in energy demand, supply, and commodity flows between countries and in regions.	India
PRIMES	The Price-Induced Market Equilibrium System is an energy system model, which has been used by European Union countries to assess future projections of energy demand, supply, prices, and investments, as well as the related emission impacts.	Europe, India
TIMES, TIAM	The Integrated MARKAL-EFOM System Model (also known as the TIMES Integrated Assessment Model [TIAM]) uses a least-cost energy system optimization approach to support in-depth energy and environmental analyses.	Georgia, South Africa, Vietnam
Agriculture, Forestry, and Other Land Use (AFOLU)		
CMIP5	The Coupled Model Intercomparison Project Phase 5 model is a set of 35 climate model comparison experiments that assess model differences in areas such as atmosphere-ocean general circulation, which has been used for long-term weather and crop planning.	Ethiopia
EX-ACT	The Ex-Ante Carbon-balance Tool is a land based emissions accounting tool that can estimate the impact of policies and programs on carbon balances. The tool is a set of linked Microsoft Excel sheets and includes nine topic modules.	Ethiopia, Nigeria
FLinT	Full Lands Integration Tool is an open-source tool that compiles remote sensing and ground data for countries to use	Kenya

Model	Description	Countries Using Model ^a
	to develop time series data and projections related to sustainable land-use policies and programs.	
GLOBIOM/ INDOBIOM	The Global Biosphere Management Model is used to assess trade-offs between agriculture, forestry, and bioenergy activities. INDOBIOM is a country-tailored version of the model that was used to develop Indonesia’s Vision 2045.	Indonesia, India
POLYSYS	The Policy Analysis System is an economic modeling simulation to support planning decisions in U.S. Agricultural Statistics Districts. The model is currently being considered by other countries, such as Peru.	United States, Peru

^a Countries listed were identified through desk research and may not represent all model users.

5. OVERVIEW OF SELECT USAID COUNTRIES

To understand the current landscape of transparency and LTS activities amongst USAID countries, the T-LTS project team conducted a combination of desk research, donor consultations, and mission consultations. An initial review of published reports and case studies helped identify countries that have expressed political interest in long-term planning, evidence of some existing modeling capacity, and activities that the T-LTS could leverage or build on. Consultations with major donors, including 2050 Pathways Platform, GIZ, UNDP, and the NDC Partnership, provided more detailed information.

Based on the results of the desk research and donor consultations, the T-LTS project shortlisted countries that could be partners for regional workshops and/or bilateral support. The T-LTS project identified 12 countries for consideration and conducted 11 consultations with in-country USAID missions.

Country-Specific Profiles

The following section provides detailed results on each country based on desk research, donor consultations, and mission consultations.

- **Africa Region**
 - Ethiopia
 - Kenya
 - Nigeria
 - South Africa
 - Uganda
- **Asia Region**
 - India
 - Indonesia
 - Vietnam
- **Caucasus Region**
 - Georgia
- **Latin America & Caribbean Region**
 - Colombia
 - Jamaica
 - Peru

Africa: Ethiopia

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> • Ethiopia is a member of 2050 Pathways Platform. • IDDRI is providing some LTS support in Ethiopia. • Ethiopia is receiving LTS support via the UNDP NDC Support Programme. • GIZ (funded by the International Climate Initiative [IKI]) has supported Ethiopia through the Tracking and Strengthening Climate Action (TASCA) program, which focuses on providing tools and resources to track the implementation and effects of their NDCs and the underlying policies that support them, as well as identifying further abatement opportunities that can inform future NDCs. • As of March 2019, Ethiopia has finalized a MRV gap assessment, training needs assessment, and drafted a sectoral Climate Resilience Green Economy Strategy (CRGE) roadmap. TASCA has also helped support the update of Ethiopia’s NDC and development of a LTS, through collaboration with 2050 Pathways and AFD. • Ethiopia has an approved US\$1.1M project under the Capacity Building Initiative for Transparency (CBIT) that is focused on developing institutional capacities for reporting under the Paris Agreement framework. UNDP is the implementing agency. This project does not include LTS or modeling requests.
	Supporting Partners	<ul style="list-style-type: none"> • UNDP, GIZ, IDDRI, 2050 Pathways Platform, AFD
	In-Country Partners	<ul style="list-style-type: none"> • None identified.
	Models	<ul style="list-style-type: none"> • CMIP5 (for long-term weather and crop planning)
	NDC Review	<ul style="list-style-type: none"> • Ethiopia has set an unconditional target to limit its net GHG emissions in 2030 to 145 Mt CO₂eq. or lower. This would constitute a 255 MtCO₂eq. reduction from the projected ‘business-as usual’ (BAU) emissions in 2030, equivalent to a 64% reduction from the BAU scenario in 2030. No information was provided on the methodology used to calculate the BAU scenario. • Ethiopia intends to enhance ambition or action in its 2020 NDC per the Climate Ambition Alliance statement by Chilean presidency.
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> • Through the Enhancing Capacity for Low Emission Development (EC-LEDS) initiative (2013-2019), USAID worked to enhance capacity for Ethiopia’s Climate Resilient Green Economy, which provides a blueprint to achieve middle-income status by 2030 without increasing GHG emissions relative to 2010 levels. USAID provided technical support at the program-level within the agriculture sector by improving information sharing, government and community adaptation efforts, and analytic tools for early warning and disaster risk preparedness. • Under the Power Africa initiative (2013-Ongoing), USAID is supporting the development of Ethiopia’s renewable energy potential with a focus on geothermal energy. • USAID has supported the use of improved climate models to develop climate scenarios for SERVIR (2008-Ongoing) hub regions and the refinement of these scenarios to meet regional concerns. Work includes the compilation of a 30-year record of rainfall estimates, which will estimate crop yields and produce a set of long time-series drought indicators for the Greater Horn of Africa (GHA), and then for the Sahel and southern Africa. • The USAID Pastoralist Areas Resilience Improvement through Market Expansion (PRIME) project in Ethiopia (2012-2017) promoted the viability and resiliency of pastoralist communities through low emissions agricultural practices. The project estimated mitigation co-benefits by using the Food and Agriculture Organization’s (FAO) Ex Ante Carbon Balance Tool (EX-ACT).

Africa: Kenya

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> Kenya has received support for the energy sector under the Ambition to Action project (2017-2019), which supports NDC implementation and is implemented by the Energy Research Centre of the Netherlands and the NewClimate Institute. Project funding is from IKI and the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU). The German government has provided funding through the UNDP for the Climate Change Directive. Kenya has worked on enhancing MRV for their Climate Change Act of 2016, which provides an enhanced response to climate change action and provides mechanisms and measures to achieve low carbon and climate resilient development. Kenya has developed a Kenya Vision 2030, which aims at making Kenya a newly industrializing, “middle income country providing high quality life for all its citizens by the year 2030.” Social and economic growth are the main focus. UNEP has provided capacity-building support for long-term planning and modeling to the Ministry of Planning. The Third Medium Term Plan (MTP) framework (2018-2022) presents opportunities to mainstream climate change into national planning. For instance, the Green Economy Strategy and Implementation Plan (GESIP) (2016-2030) aims at providing guidance to all development actors to adopt pathways with higher green growth, cleaner environment, and higher productivity relative to the business-as usual growth scenario. Kenya had an approved US\$1M project under CBIT that focused on enhancing the SLEEK system for managing data related to transparency (2018-2019). Conservation International was the implementing agency for this CBIT effort. This project did not include LTS or modeling requests.
	Supporting Partners	<ul style="list-style-type: none"> Energy Research Centre of the Netherlands, NewClimate Institute, BMU, Conservation International, UNDP, UNEP
	In-Country Partners	<ul style="list-style-type: none"> Ministry of Planning, Climate Change Office (Ministry of Environment), Ministry of Energy
	Models	<ul style="list-style-type: none"> Full lands Integration Tool (FLinT)
	NDC Review	<ul style="list-style-type: none"> Kenya has a conditional NDC target of reducing GHG emissions by 30% by 2030 relative to the BAU scenario of 143 MtCO₂eq. BAU projection was developed using a comprehensive GHG inventory for 2000 to 2010 and projecting emissions to 2030. The reference case is detailed in Kenya’s National Climate Change Action Plan (NCCAP) and Second National Communication. Kenya intends to update its 2020 NDC. The USAID mission has been supporting this but provision of support is being transitioned to the German government.
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> USAID Kenya has been doing some climate change work under a project that receives Adaptation and Clean Energy funding. This is coming to an end in May 2020. Kenya has not received any Sustainable Landscapes funding. NREL used to work with UNEP to provide training to government officials to improve modeling. The USAID Mission worked closely with NREL to complement activities. USAID is funding the Climate Change Office (within the Ministry of Environment). Under the EC-LEDS Program (2010-2018), USAID supported the implementation of climate change policies under Kenya’s National Climate Change Action Plan. USAID has also partnered with scientific organizations to build the capacity of Kenyan institutions to use climate data for improved decision-making. Over \$13 million in private finance will be leveraged through USAID’s Power Africa initiative (2013-Ongoing) to support household access to renewable energy and connection to the national grid.

Africa: Nigeria

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> • Nigeria is a member of the 2050 Pathways Platform. • Nigeria has been a participant in the Low Emission Development Pathways (LED-P) Initiative, led by the Stockholm Environmental Institute (SEI). This program, which ran through 2019, aimed to build capacity by creating an integrated framework to examine climate change (including long- and near-term mitigation) and air pollution together, along with "easy-to-use planning and analytical tools." • Nigeria requested help from NDC Partnership to develop a long-term Low Carbon Development Strategy and is now working with the FAO, AFD, Natural Eco Capital, and Stratus. • IDDRI conducted a workshop in August 2019 with a focus on bringing together research capabilities within Nigeria. Nigeria has research capacity but it hasn't been mobilized or coordinated to support LTS. There is an opportunity to support "leapfrogging" through this effort. • GIZ is supporting the Government of Nigeria in conducting a country-wide scenario analysis to assess how the country will meet its conditional NDC commitment by 2030. • Nigeria has been using the Climate Finance Accelerator to link sources of climate finance funding to projects and sectors self-identified from NDCs. This effort aims at accelerating NDC finance planning and implementation to make sure long-term targets for the Paris Agreement are met. • Nigeria has been working to decentralize LTS by increasing capacity building across sectors and within the Department of Climate Change; they are also developing a LTS legal framework and finance strategy.
	Supporting Partners	<ul style="list-style-type: none"> • IDDRI, 2050 Pathways, SEI, NDC Partnership, GIZ, FAO, AFD, Natural Eco Capital, Stratus
	In-Country Partners	<ul style="list-style-type: none"> • Department of Climate Change
	Models	<ul style="list-style-type: none"> • Energy Forecasting Framework and Emissions Consensus Tool (EFFECT) • EX-ACT (Ex Ante Appraisal Carbon Balance Tool) • Long-range Energy Alternatives Planning (LEAP) model
	NDC Review	<ul style="list-style-type: none"> • Nigeria has set unconditional and conditional targets to reduce its GHG emissions by 20% and 45%, respectively, compared to the BAU by 2030. Focus areas include improving energy efficiency by 20 percent, 13 GW of renewable electricity provided to rural communities currently off-grid, and ending gas flaring. • Nigeria intends to enhance its NDC by addressing waste and water management, which were not addressed in its initial NDC. • Nigeria's NDC enhancement process includes an impact assessment for the currently included sectors, vulnerability and risk assessments, cost-benefit analyses, and the quantification of sectoral targets. Many of the impact assessments have been completed, particularly for the electricity and agriculture sectors.
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> • USAID Nigeria is currently developing its country development cooperation strategy for the next five years. There are some water, sanitation, and hygiene (WASH) efforts. There are also activities that target increasing women in STEM (E3 Gender and Utilities). • The USAID Power Africa (2013-ongoing) project has engaged Nigeria primarily through initiatives that diversify Nigeria's energy mix through the addition of solar projects and reducing losses at distribution. Power Africa is also supporting the Nigeria Electricity Regulatory Commission (NERC) through a partnership with the National Association of Regulatory Utility Commissioners (NARUC). Power Africa is also assessing opportunities to advance utility-scale renewable energy projects and to commercialize gas flaring in the Delta.

Africa: South Africa

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> • South Africa is a member of 2050 Pathways Platform. • The Energy Research Center at University of Cape Town is part of a three-year consortium of stakeholders from South Africa, Brazil, China, India, and Indonesia to support LTS development. The consortium began in 2018 and is facilitated by IDDRI and supported by IKI. • South Africa participated in the Deep Decarbonization Pathways project, releasing a report in 2015, which relied on several models to consider LEDS for the country. • The Mitigation Action Plans and Scenarios (MAPS) program emerged out of the experience of the Long-Term Mitigation Scenarios (LTMS) in South Africa, which ran from 2005-2007. MAPS ran from 2010-2015 and sought to build national scenarios to inform action towards lower emissions in Brazil, Chile, Colombia, and Peru. MAPS was country-owned, driven by their governments and reliant on the country teams. • South Africa is in the process of finalizing its LEDS 2050, which will be submitted to the UNFCCC in 2020. • Under the TASCAs program and with WRI support, South Africa has developed a data portal for the biennial update report (BUR) and climate reports. • South Africa has an approved US\$1.1M project under the CBIT program that is focused on increasing accessibility of climate data. UNEP is the implementing agency for this CBIT effort. The project timeframe is March 2019 to March 2022.
	Supporting Partners	<ul style="list-style-type: none"> • 2050 Pathways, IDDRI, IKI, WRI, UNEP, GIZ
	In-Country Partners	<ul style="list-style-type: none"> • Energy Research Centre - University of Cape Town, SouthSouthNorth.
	Models	<ul style="list-style-type: none"> • 2050 Pathways Calculator • Energy Extended South African General Equilibrium Model (e-SAGE) • South African TIMES Model (SATIM) • Inter-Industry Forecasting Model
	NDC Review	<ul style="list-style-type: none"> • South Africa has a “Peak, Plateau, Decline” (PPD) trajectory, capping emissions to 398 and 614 Mt CO₂eq. by 2025 and 2030, as defined in national policy. • No analytical basis was provided on the methodology used to calculate the NDC BAU scenario, but South Africa includes robust forecasts in other documents, which leveraged information developed under the LTMS study. • After 2030, South Africa has a long-term goal to reduce GHG emissions to 212–428 MtCO₂eq. by 2050 (including LULUCF). The long-term target is based on the steady decline of the PPD trajectory. • Established various vehicles for NDC progress, such as the Green Economy initiative, which provides the potential for NDC ambition raising due to the long-term vision, and the Green Economy plan, which provides for public and private investment. • South Africa intends to enhance the ambition of its NDC.
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> • USAID is helping the government to implement its national green growth plans by supporting investment in projects that reduce GHG emissions. • USAID’s SA-LED (2015-2020) program strengthened the local capacity of the public sector to plan, finance, implement, and report on low emissions development projects and to accelerate the adoption of low emissions technologies for a green economy.

Africa: Uganda

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> Uganda has requested support on LTS development from GIZ, LEADS GP, and the NDC Partnership (through the Climate Action Enhancement Package). LEADS-GP is working to support Uganda’s National Transport Master Plan. Transportation appears to be a focus area of Uganda’s long-term emissions mitigation planning. Uganda has developed a Vision 2040, which is their long-term strategic growth framework. Environment and waste management will be emphasized in line with the integrated physical planning models, which will entail strict control of pollution, wetland management, waste management, and the promotion and protection of green areas, open spaces, and corridors. Uganda had an approved US\$1.1M project under the CBIT program that focused on enhancing institutional capacity related to data collection and processing. Conservation International was the implementing agency for this CBIT effort. The project timeframe was June 2018 to November 2019. This project did not include LTS or modeling requests. The NDC Support Programme, hosted by UNDP, recently programmed \$775,000 to support several outputs in Uganda’s Partnership Plan, including strengthening Uganda’s capacities in “integrated governance, gender mainstreaming, climate actions, transparency systems, climate finance, and private sector engagement.”
	Supporting Partners	<ul style="list-style-type: none"> SEI, UNDP, NDC Partnership, GIZ, LEADS GP, Conservation International
	In-Country Partners	<ul style="list-style-type: none"> None identified.
	Models	<ul style="list-style-type: none"> Long-range Energy Alternatives Planning (LEAP) model
	NDC Review	<ul style="list-style-type: none"> Uganda has set an unconditional target to reduce its GHG emissions by 22%, compared to the BAU by 2030. The major targets are based on the cumulative impact of the policies and measures from the mitigation contribution. Uganda is considering moving some of its targets for 2030 forward to 2020. Uganda intends to enhance the ambition of its NDC.
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> USAID (ongoing) supports Uganda to: improve meteorological data collection, analysis and forecasting; build local research capacity and fund climate-related agricultural research; and deepen district government officials’ understanding of climate change impacts and build their capacity to design and budget responsive action plans. The USAID Power Africa (2013-ongoing) project has engaged Uganda primarily by providing transaction advisory services to enable generation projects to financially close and piloting off-grid product designs and payment platforms. The Planning for Resilience in East Africa through Policy, Adaptation, Research and Economic Development (PREPARED) project (2012-2018) worked in Uganda to strengthen the sustainable management of ecosystems; enhance resilient water, sanitation, and hygiene services; and improve climate change adaptation technical capacity, policy leadership, and action readiness.

Asia: India

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> • The Indian Institute of Management Ahmedabad (IIMA) is part of a three-year consortium of stakeholders from Brazil, China, India, Indonesia, and South Africa to support LTS development. The consortium began in 2018 and is facilitated by IDDRI and supported by IKI. • In 2018, GIZ India organized a dialogue on low-carbon modeling (overview of models and GHG emission scenarios for 2030-2050). The dialogue included experts from Indian institutions and the European Union’s Joint Research Centre. • As part of the Mitigation Action Plans & Scenarios (MAPS) initiative, supported by the Climate and Development Knowledge Network (CDKN), India’s Centre for Policy Research released a report in 2015 on different modeling studies, which may have informed the country’s NDC. • India participated in the Deep Decarbonization Pathways project, releasing a report in 2015, which relied on several models to consider low-emission development scenarios. • In 2014, the Indo-German Centre for Sustainability used the LEAP model to inform a long-term energy and development pathway analysis. • India has submitted a US\$3.8M project concept to the CBIT program with a focus on strengthening institutional coordination for the Paris Agreement. UNDP is the implementing agency for this CBIT effort. This project does not include LTS or modeling requests.
	Supporting Partners	<ul style="list-style-type: none"> • 2050 Pathways Platform, CDKN (previous donor), GIZ, IDDRI, SEI, UNDP
	In-Country Partners	<ul style="list-style-type: none"> • IIMA, TERI, Integrated Research for Action and Development (IRADe), Institute of Economic Growth (IEG), Center for Study of Science, Technology and Policy (C-STEP), National Council of Applied Economic Research (NCAER), Council on Energy, Environment, and Water (CEEW), Brookings India, Prayas Pune, Ministry of Environment, Forest and Climate Change, Center for Policy Research
	Models	<ul style="list-style-type: none"> • Prospective Outlook on the Long-term Energy System (POLES) • General Equilibrium Model for Energy, Economy and Environment (GEM-E3) • Price-Induced Market Equilibrium System (PRIMES) • Greenhouse Gas and Air Pollution Information and Simulation (GAINS) • Global Biosphere Management Model (GLOBIOM) • ANSWER-MARKAL Model • Global Change Assessment Model – Indian Institute of Management (GCAM-IIM) • Long-range Alternative Planning (LEAP) System Model
	NDC Review	<ul style="list-style-type: none"> • India has set a conditional target to reduce the GHG intensity of its GDP by 33-35% of 2005 levels by 2030. • Mitigation actions in the power, forestry, and low-carbon infrastructure and public transportation sectors form the basis of this target. However, no analytic basis for calculating emissions is provided in the country’s NDC.
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> • Under the Asia Enhancing Development and Growth through Energy (EDGE) project (2018-Ongoing), USAID is assisting India with its low-carbon energy development and integration efforts. USAID’s engagement includes support for policy, regulations, standards, and incentive structures; enhanced institutional and technological capacity; new technologies and business model pilots; domestic and regional electricity market platforms; and consumer adoption of advanced energy technologies. • USAID supported forest management activities in India under the Partnership for Land Use Science (2012-2017). This program was followed up by Forest PLUS 2 (active). • Under the Partnership to Advance Clean Energy (PACE) Program (2014-Ongoing as PACE-D 2.0), USAID is supporting clean energy deployment activities in India. • The U.S. and India have established the U.S.-India Strategic Energy Partnership (2019-Ongoing), which includes working groups for renewable

	<p>energy and sustainable growth. The SG working group has supported cross-sectoral climate and energy modeling and convened an energy modeling forum in March 2019.</p> <ul style="list-style-type: none">• Grid integration of renewable energy is a priority in India. USAID's Greening the Grid (GTG) project modeled the roadmap to meet 175 GW renewable energy targets by 2022 using the PLEXOS model (NREL with POSOCO). The activity is piloting grid integration technologies and solutions and is also supporting CERC in modeling various power market scenarios (active).• USAID also partnered with GIZ and the U.K.'s Department for International Development (DfID) to support grid integration of renewable energy. In 2019, a conference with expert representatives from 16 countries was held in New Delhi, which was a follow-on to the first conference held in 2017.
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Asia: Indonesia

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> • As part of the country’s Low Carbon Development Initiative (LCDI), in 2019, the Government of Indonesia released <i>Low Carbon Development Indonesia</i>, a report which presents a low-carbon development pathway to 2045. • The Bogor Agricultural University (CCROM - IPB) is part of a three-year consortium of stakeholders from Brazil, China, India, Indonesia, and South Africa to support LTS development. The consortium began in 2018 and is facilitated by IDDRI and supported by IKI. • ClimateWorks Australia (with IDDRI) is working with Indonesia on financing aspects of LTS and pathways for decarbonization. • The City of Jakarta wants to develop an LTS for transportation and has made a request for support with the LEDSGP and started discussions with ClimateWorks Australia. • The Government of Indonesia has requested support from the NDC Partnership to update its NDC. • Indonesia participated in the Deep Decarbonization Pathways project, releasing a report in 2015, which relied on several models to consider low-emission development scenarios. • Indonesia has submitted a US\$1.9M project concept to the CBIT project with a focus on strengthening technical and institutional capacity to meet the enhanced transparency framework. UNDP is the implementing agency for this CBIT effort. This project does not include LTS or modeling requests.
	Supporting Partners	<ul style="list-style-type: none"> • 2050 Pathways, GGGI, ClimateWorks Australia, UK Department for International Development (DfID), UNDP, the Governments of Norway, Denmark, and Germany
	In-Country Partners	<ul style="list-style-type: none"> • CCROM – IPB, Center for Research on Energy Policy - Institut Teknologi Bandung (CREP-ITB), Ministry of Environment and Forestry
	Models	<ul style="list-style-type: none"> • Indonesia Vision 2045 Model (IV2045) • Indonesia Biosphere Management Model (INDOBIOM)
	NDC Review	<ul style="list-style-type: none"> • Indonesia has set unconditional and conditional targets to reduce its GHG emissions by 29% and 41%, respectively, compared to the BAU by 2030. • The post-2010 BAU modeling is based on the 2000-2010 national GHG trajectory. • The GHG emission reduction target is based on a sector-based approach. The methodology and target sectors are not described. • Indonesia intends to update its NDC.²
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> • USAID is partnering with the Government of Indonesia to improve energy sector policies, regulations, and coordination in order to support national low-emissions development and electricity access goals. Activities identified by USAID include support for local governments to develop low carbon energy development plans. • The USAID LESTARI program (2015-2020) has supported the Government of Indonesia with GHG reduction and biodiversity conservation activities in the forest and land use sectors.

² “Update” refers to improvements to the clarity related to the NDC or measures to implement the NDC, not to increasing ambition of the NDC target.

Asia: Vietnam

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> • Vietnam’s Ministry of Industry and Trade (MOIT) used the MARKAL/TIMES modeling platform to develop a BAU scenario for its NDC mitigation analysis. MOIT and the Ministry of Transportation (MOT) have considered several other energy models to support the Country’s NDC process, including the BALMOREL and EFFECT models for power system and transport planning, respectively. • MOIT regularly updates its Power Development Plan (PDP), which sets decadal targets for power generation capacity and the transmission system. • As of 2019, MOIT was in the process of developing implementation plans for its Green Growth Action Plan (GGAP) and Renewable Energy Action Plan (REDS-AP), which will set sustainable development goals in several key sectors. • MOIT is developing the 8th Power Development Plan (PDP8) covering the period of 2021-2030 with an outlook to 2045. • The Prime Minister of Vietnam has issued the National Action Program on the Reduction of Greenhouse Gas Emissions through the reduction of Deforestation and Forest Degradation, Sustainable Management of Forest Resources, and Conservation and Enhancement of Forest Carbon Stocks (REDD+) by 2030. • The Government of Vietnam has requested support from the NDC Partnership to mainstream its NDC goals in national and provincial development plans and guide the overall implementation of its NDC. It has also requested support to develop national and provincial level macro-economic models.
	Supporting Partners	<ul style="list-style-type: none"> • 2050 Pathways Platform, GIZ, NDC Partnership
	In-Country Partners	<ul style="list-style-type: none"> • MOIT, MOT, MONRE, MARD
	Models	<ul style="list-style-type: none"> • Long-rate Energy Alternatives Planning (LEAP) system • MARKAL/TIMES Modeling Platform • BALMOREL Energy Model • EFFECT Transportation Model
	NDC Review	<ul style="list-style-type: none"> • Vietnam has set unconditional and conditional targets to reduce its GHG emissions by 8% and 25%, respectively, compared to the BAU by 2030. Vietnam has also pledged to reduce its emission intensity per unit of GDP by 20% by 2030 relative to 2010. • Vietnam’s BAU was developed based on data from National Statistics Yearbooks from ministries, agencies, and published research results, and an emissions forecast based on assumption of economic growth in the absence of climate change policies.
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> • USAID has been working with MOIT to support renewable energy and energy efficiency developments through the Vietnam Low Emission Energy Program (V-LEEP) (2015-Ongoing). This program will continue through FY2020. • USAID is working with Da Nang and Ho Chi Minh cities to develop and implement urban energy plans to deploy distributed energy solutions through the Vietnam Urban Energy Security (2019-2023). • Under the EC-LEDS Program (2010-2018), USAID partnered with Vietnam to support GHG emission reduction modeling in the energy, agriculture, and forestry sectors. The program also supported forest management activities. • Under the Green Annamites Activity (2016-2020) and the Vietnam Forest and Delta Program (2012-2021), USAID supported low-emission development for the land use sector in several provinces in Vietnam.

Caucasus: Georgia

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> • GIZ and the NDC Partnership have been supporting the Government of Georgia with the development of the country’s climate action plan and updates to its NDC. • Georgia has requested that the NDC Partnership provide technical support for the TIMES Model calibration and mitigation scenario development. Additional stakeholder engagement to raise awareness of low emission development activities has also been requested. • Georgia has an approved US\$1M project under the CBIT program that is focused on an integrated transparency framework for the implementation of the Paris Agreement. UNEP is the implementing agency for this CBIT effort. This project does not include LTS or modeling requests.
	Supporting Partners	<ul style="list-style-type: none"> • GIZ, NDC Partnership, UNEP
	In-Country Partners	<ul style="list-style-type: none"> • Ministry of Environment Protection and Agriculture of Georgia
	Models	<ul style="list-style-type: none"> • TIMES/ANSWER model
	NDC Review	<ul style="list-style-type: none"> • Georgia has set unconditional and conditional targets to reduce its GHG emissions by 15% and 25%, respectively, compared to the BAU scenario by 2030. No information was provided on the methodology used to calculate the BAU scenario. • Georgia intends to enhance the ambition of its NDC.³
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> • USAID Georgia previously supported the Government of Georgia with the development of the country’s LEDS (2017-2018) but the government did not adopt it. • USAID’s Energy Program supports Georgia’s competitive energy market development and its integration into the regional energy markets and supports the development of electricity generation from resources native to Georgia (2017-Ongoing). • USAID’s Energy Technology and Governance Program (2016-Ongoing) is supporting regional energy sector reform trainings and meetings, which include Georgia. These convenings are intended to assist with long-term electricity analysis and development plans and enable grid owners and operators to plan for future sector investments. • USAID is also supporting electricity and natural gas market reforms by assisting regulators with regulations development, and is planning to work with local hydropower developers to advance hydropower projects in the country.

³ “Enhance” refers to an intention to strengthen mitigation ambition and/or increase adaptation action in the 2020 NDC submission.

Latin America & Caribbean: Colombia

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> Colombia is a member of the 2050 Pathways Platform. Colombia intends to release its LTS by COP26. The Government of Colombia, supported by WRI’s TASCAs project, is working on a “2050 Strategy” which will include the development of a roadmap and technical studies to analyze a decarbonization pathway to achieve carbon neutrality by 2050. The Government of Colombia has requested support from the NDC Partnership to link their NDCs with national long-term strategies and to enhance the ambition of its NDC. The Deep Decarbonization Pathways Project Latin America (DDP LAC) is supporting in-country teams in Colombia with tools and methodologies for the further development of decarbonization pathways, and their incorporation in country policies and NDC updates. The project is supported by the IDB and AFD. Colombia has been a participant in the Low Emission Development Pathways (LED-P) Initiative, led by the SEI. This program, which ran through 2019, aimed to build capacity by creating an integrated framework to examine climate change (including long- and near-term mitigation) and air pollution together, along with “easy-to-use planning and analytical tools.” Colombia participated in the Mitigation Action Plans and Scenarios (MAPS) programme from 2014 to 2015. MAPS supported the development of Colombia’s Low Carbon Development Strategy. From 2012 to 2015, Colombia participated in the CLIMACAP-LAMP project, an inter-model comparison exercise that focused on energy and climate change economics issues in LAC countries. Project partners included the National University of Colombia and the National Planning Department. Colombia has submitted a US\$3.8M project concept to the CBIT program with a focus on developing their national GHG inventory system and improving GHG data and management. UNDP is the implementing agency for this CBIT effort. This project does not include LTS or modeling requests. The Ministry of Environment and Sustainable Development (MADS) is coordinating a series of studies and independent modeling exercises related to LTS. The final LTS will be a compilation of independent models, which are largely developed by research institutions.
	Supporting Partners	<ul style="list-style-type: none"> 2050 Pathways Platform, AFD, GIZ, LEDS-GP, IDB, SEI, UNDP, WRI
	In-Country Partners	<ul style="list-style-type: none"> Universidad de los Andes & Rosario, MADS, Institute of Hydrology, Meteorology and Environmental Studies (IDEAM), National University of Colombia, the National Planning Department
	Models	<ul style="list-style-type: none"> Global Climate Change Assessment Model (GCAM) Long-range Energy Alternatives Planning (LEAP) model General Monetary and Multisectoral Macrodynamics for Ecological Shift (GEMMES) MARKAL
	NDC Review	<ul style="list-style-type: none"> The Government of Colombia has set unconditional and conditional targets to reduce GHG emissions by 20% and 30%, respectively, from BAU levels by 2030. Emission reduction targets were set using the country’s 2010 inventory and include scenario projections based on expert input, macroeconomic assumptions, current and prospective policies, and additional information regarding historic emission pathways. Colombia intends to enhance the ambition of its NDC.⁴

⁴ “Enhance” refers to an intention to strengthen mitigation ambition and/or increase adaptation action in the 2020 NDC submission.

Mission Information	Relevant Current Activities	<ul style="list-style-type: none">• USAID’s Scaling Up Renewable Energy (SURE) Program (2017-Ongoing) is supporting Colombia with its first long-term energy auctions, which are intended to support the countries renewable energy capacity installation goals.• Under the EC-LEDS Program (2010-2018), USAID partnered with Colombia to support implementation of the Estrategia Colombiana de Desarrollo Bajo en Carbono (ECDBC), a whole-of-government LEDS.• The Paramos Forest activity and SilvaCarbon are active in land use and forestry monitoring and reporting; and support is provided to IDEAM to improve AFOLU emissions projections.
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Latin America & Caribbean: Jamaica

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> Jamaica is developing a 2050 emission reduction strategy, to be consistent with international goals and with a goal of net-zero emissions by 2050: review projections and action options for net-zero emissions by 2050; prepare a long-term, low-carbon development strategy with an M&E framework; and map finance flows and opportunities for LTS implementation. With support from the World Bank and the NDC Partnership, Jamaica is in the process of reviewing and updating its NDC. The project, “Supporting the Assessment and Update of NDC and the Development of Partnership Plan” is intended to conclude in 2020. Sectors being assessed for NDC enhancement include, energy, transport, forestry, water, agriculture, and waste. Jamaica is part of the Caribbean Cooperative MRV Hub, a multi-year initiative (2018-2023) to assist English-speaking countries in the Caribbean with GHG inventories, mitigation projections, and NDC implementation. The project is being implemented by the Greenhouse Gas Management Institute (GHGMI) with support from the UNFCCC, UNDP, and IKI. Jamaica has an approved US\$1.3M project under the CBIT program that is focused on strengthening the transparency framework. IDB is the implementing agency for this CBIT effort. This project does not include LTS or modeling requests.
	Supporting Partners	<ul style="list-style-type: none"> NDC Partnership, World Bank, GHGMI, UNFCCC, UNDP, IDB
	In-Country Partners	<ul style="list-style-type: none"> Climate Change Division, Ministry of Economic Growth and Job Creation, CARICOM
	Models	<ul style="list-style-type: none"> Not specified
	NDC Review	<ul style="list-style-type: none"> The Government of Jamaica has set unconditional and conditional targets to reduce GHG emissions in the energy sector by 7.8% and 10%, respectively, from BAU levels by 2030. Energy sector fuel use was assumed to grow at rates consistent with the GDP growth rate, GDP per-capita growth rate, or a compound annual growth rate calculated by best-fit regression on energy sector data from 2000-2005. Growth rates were validated using 2005-2014 sector data. Jamaica intends to expand its NDC to include additional sectors.
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> Jamaica has been a participant in the USAID Caribbean Clean Energy Program (CARCEP) (2015-2018), which is intended to foster growth in renewable energy and energy efficiency in the region. There are still some Global Climate Change activities happening in the region but through the Dominican Republic. Under the EC-LEDS Program (2010-2018), USAID supported clean energy development and forest management activities in Jamaica. USAID also supported the development of Jamaica’s NDC.

Latin America & Caribbean: Peru

Existing Long-Term Strategy and Modeling Activities	In-Country Activities	<ul style="list-style-type: none"> • Peru is a member of the 2050 Pathways Platform. • The Deep Decarbonization Pathways Project Latin America (DDP LAC) project is supporting in-country teams in Peru with tools and methodologies for the further development of decarbonization pathways, and their incorporation in-country policies and NDC updates. The project is supported by the IDB and the AFD. • Under DDP LAC, Peru is working on land use modeling using POLYSYS. The University of Tennessee is partnering with the Universidad del Pacifico on improving capacity. • The Government of Peru has requested support through the NDC Partnership to evaluate the potential to increase its NDC targets post-2030. • Peru has been a participant in the Low Emission Development Pathways (LED-P) Initiative, led by the SEI. This program, which ran through 2019, aimed to build capacity by creating an integrated framework to examine climate change (including long- and near-term mitigation) and air pollution together, along with "easy-to-use planning and analytical tools." • From 2012 to 2014, Peru participated in the Mitigation Action Plans and Scenarios (MAPS) programme. MAPS supported Planning for Climate Change, a process to generate the scientific evidence base to build GHG emission scenarios, evaluate mitigation options and assess the implementation of mitigation measures. • In 2018, a Multisectoral Technical Group (GTM) made up of 13 sectors and Centro Nacional de Planeamiento Estratégico representatives released a report detailing climate change mitigation and adaptation measures, and pillars for monitoring and evaluation measures, which aligned with NDC implementation. The working group and the report were supported by EC-LEDS. • Peru has an approved US\$1.2M project under the CBIT program that is focused on developing institutional capacities for the formulation of long-term, low emissions development strategies. UNEP is the implementing agency for this CBIT effort. The project timeframe is April 2019 to April 2022.
	Supporting Partners	<ul style="list-style-type: none"> • 2050 Pathways Platform, AFD, UNDP, IDB, NDC Partnership, SEI, UNEP
	In-Country Partners	<ul style="list-style-type: none"> • Universidad del Pacifico, Ministry of Economy and Finance
	Models	<ul style="list-style-type: none"> • Long-range Energy Alternatives Planning (LEAP) model • Policy Analysis System (POLYSYS)
	NDC Review	<ul style="list-style-type: none"> • The Government of Peru has set unconditional and conditional targets to reduce GHG emissions by 20% and 30%, respectively, from BAU levels by 2030. • IPCC guidelines, national statistics and projections of population, and GDP were used to calculate emissions for the BAU. • Peru is considering updates to its NDC and enhancements in ambition post-2030.⁵
Mission Information	Relevant Current Activities	<ul style="list-style-type: none"> • Under the Country Development Cooperation Strategy (CDCS) (2012-2020), USAID has sought to support low-emissions planning and development practices in Peru. • As part of the Amazon Regional Environment Program (2018-2023), USAID is supporting sustainable forest management activities in Peru. A stated objective of the project is to reduce deforestation and GHG emissions. This could have implications for long-term emission trajectories.

⁵ “Update” refers to improvements to the clarity related to the NDC or measures to implement the NDC. “Enhance” refers to an intention to strengthen mitigation ambition and/or increase adaptation action in an NDC submission.

6. METHODOLOGY

The T-LTS project team used a combination of desk research and consultations with key stakeholders to collect information on the current international transparency and long-term planning landscape, and USAID activities and engagement opportunities in select countries.

Desk Research

The project team used desk research to develop an initial understanding of existing or planned transparency and long-term planning activities, and to identify key contacts for consultation. The project team reviewed various sources, including the:

- 2050 Pathways Platform;
- Capacity Building Initiative for Transparency platform;
- Deep Decarbonization Pathways plans;
- NDC Partnership country engagement plans;
- UNFCCC submissions from key donor countries; and
- Documentation from major funds and development banks (e.g., International Climate Initiative, Global Environment Facility, Climate Investment Funds, Inter-American Development Bank).

This research was used to identify donor and in-country partners for consultations, and to identify the most promising countries and regions for capacity-building support. Following its survey of the transparency and long-term planning landscape, and the consultations informed by this research, the project team reviewed USAID mission and regional bureau documents to identify relevant in-country activities and engagement opportunities. This informed consultations with USAID mission and regional bureau staff.

Consultations

Informed by desk research, the project team conducted outreach to key stakeholders from governments, non-governmental organizations, research institutions, and other partnership programs. Because of the constantly changing donor environment and limited information available through desk research, these consultations were critical to information both this scoping analysis and the regional workshop development. Consultations were conducted in person, over the phone, and in meetings during COP25 in Madrid, Spain. Subsequent desk research was undertaken based on information gathered during these consultations.

The following USAID bureaus, USAID missions, and donors were consulted for this scoping analysis:

USAID Missions	USAID Regional Bureaus	Donors
<ul style="list-style-type: none"> • Colombia • Ethiopia • Georgia • India • Indonesia • Jamaica • Kenya • Nigeria • Peru • South Africa • Vietnam 	<ul style="list-style-type: none"> • Africa • Asia • Europe and Eurasia • Latin America and the Caribbean 	<ul style="list-style-type: none"> • 2060 Pathways • ClimateWorks Australia • Global Green Growth Institute • GIZ • Inter-American Development Bank (IDB) • Institute for Sustainable Development and International Relations (IDDR) • LEDS-GP • NDC Partnership • United Nations Development Programme (UNDP) • World Resources Institute

7. REFERENCES

This section summarizes the references used for desk research in this scoping analysis. Additional information was gathered through interviews with Mission staff, donors, and other experts.

Abeyasinghe, A. (2019). Seven Key Elements for a Successful Long-term Climate Strategy. World Resources Institute. <https://www.wri.org/climate/expert-perspective/seven-key-elements-successful-long-term-climate-strategy-ltcs>.

Elliot, C., J. Worker, K. Levin, and K. Ross (2019). Good Governance for Long-Term Low-Emissions Development Strategies. <https://www.wri.org/publication/good-governance-long-term-low-emissions-development-strategies>.

Levin et al. (2018). Long-Term Low Greenhouse Gas Emission Development Strategies: Approaches and Methodologies for Their Design. World Resources Institute and United Nations Development Programme. <https://www.wri.org/publication/designing-G20-long-term-strategies>.

Levin, K. and T. Fransen (2019). Climate Action for Today and Tomorrow: The Relationship between NDCs and LTSS. World Resources Institute. <https://www.wri.org/news/climate-action-today-and-tomorrow-relationship-between-ndcs-and-ltss>.

Organisation for Economic Co-operation and Development (2019). Key questions guiding the process of setting up long-term low emission development strategies. Paper No. 2019(4). Available at: <https://www.oecd.org/environment/cc/Key-questions-guiding-the-process-of-setting-up-long-term-low-emissions-development-strategies.pdf>.

United Nations Framework Convention on Climate Change (2015). Paris Agreement. <https://unfccc.int/process/conferences/pastconferences/paris-climate-change-conference-november-2015/paris-agreement>.

United Nations Framework Convention on Climate Change (2018). Katowice Climate Package. <https://unfccc.int/documents/193360>.

United Nations Framework Convention on Climate Change (2020). Chapter XXVII Environment. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=en.

Waisman, H., T. Spencer, and M. Colombier (2016). Long-term low emissions development strategies and the Paris Agreement. Why, what and how? Institut du développement durable et des relations internationales. <https://www.transparency-partnership.net/documents-tools/long-term-low-emissions-development-strategies-and-paris-agreement-why-what-and-how>.

World Resources Institute (2020). Long-Term Strategy Tracker. <https://www.climatewatchdata.org/lts-tracker> (Accessed 2 April 2020).

World Resources Institute (2020). 2020 NDC Tracker. <https://www.climatewatchdata.org/lts-tracker> (Accessed 2 April 2020).

World Resources Institute (2019). What is a Long-term Strategy? <https://www.wri.org/climate/what-long-term-strategy>.



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