

# Mobilizing Finance for Climate Action

Strategies Informed by the International Climate Initiative's  
Mobilizing Private Investments Program

April 2020



Supported by:



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety

based on a decision of the German Bundestag

SOUTH  
SOUTH  
NORTH  
TOWARDS CLIMATE RESILIENCE



Climate & Development  
Knowledge Network



The International Climate Initiative Mobilizing Investment (IKI MI) program for Nationally Determined Contributions (NDCs) implementation is a three-year program focused on interventions within seven target countries: Bangladesh, Dominican Republic, Ethiopia, Kenya, Peru, Philippines, and Vietnam, and it is supported by the German government's International Climate Initiative. This program undertook analysis of finance mobilization measures in a wide range of sectors, technologies, and business models. Table 1 summarizes the IKI MI country program overviews and outputs to date.

## Acknowledgements

The authors gratefully acknowledge the contributions of the entire IKI MI team and the work of our implementing partner country governments in Bangladesh, Dominican Republic, Ethiopia, Kenya, Peru, Philippines, and Vietnam. We thank the following individuals for their written contributions and input into the development of this report.

SouthSouthNorth: Carl Wesselink, John Thorne, Amanda Dinan, Samson Mbewe, Alexa von Geusau

PriceWaterhouseCoopers: Areej Riaz, Yasomie Ranasinghe

National Renewable Energy Laboratory: Bethany Speer

Scott Muller

## Reference

“Mobilizing Finance for Climate Action, Strategies Informed by the International Climate Initiative’s Mobilizing Private Investment Program”, Low Emissions Development Strategies Global Partnership Finance Working Group / Electric Capital Management, Spring 2020

## Report Methodology

- Desk analysis of existing program outputs
- Multiple country consultations, semi-structured interviews, and formal structured interviews with team leads by phone
- Feedback on the content from country team leads and SouthSouthNorth (SSN)
- Country program examples of the different approaches added to this document where relevant

This document is an output from the Mobilising Investment program, an initiative of the Climate and Development Knowledge Network (CDKN) and Low Emission Development Strategies Global Partnership (LEDS GP) contracted through SouthSouthNorth (SSN). The Mobilising Investment program is funded by the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), on the basis of a decision adopted by the German Bundestag. Delivery partners for the program include the National Renewable Energy Laboratory (NREL), Overseas Development Institute (ODI) and PriceWaterhouseCoopers UK (PWC). The views expressed are not necessarily those of, or endorsed by, BMU or any of the entities delivering the Mobilising Investment program, who can accept no responsibility or liability for such views or information, or for any reliance placed on them. This publication has been prepared for general guidance on matters of interest only, and does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this publication, and, to the extent permitted by law, the entities managing the delivery of the Mobilising Investment program do not accept or assume any liability, responsibility or duty of care for any consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it.

# Table of Contents

Executive Summary.....	1
NDC Finance Mobilization Strategies.....	3
<i>The Opportunities</i> .....	3
<i>The Challenges</i> .....	4
<i>Recommendations for Scaling Investment Into NDCs</i> .....	5
Introduction .....	7
Program Overview .....	9
<i>Approaches to Developing a NDC Financing Strategy</i> .....	11
<i>Bottom-up or Top-down?</i> .....	12
Deep-Dive: A Closer Look at Developing a NDC Finance Strategy.....	15
Step 1: Sector Prioritisation .....	15
<i>Snapshots on the Ground: Prioritisation in Action</i> .....	15
Step 2: Landscape Assessments.....	16
<i>Snapshots from the Ground: Landscape Assessment in Action</i> .....	17
Step 3: Barriers and Challenges.....	18
<i>Snapshots from the Ground: Barriers and Challenges in Action</i> .....	20
Step 4: Intervention Strategy and Execution .....	26
<i>Snapshots from the Ground: Intervention Strategy and Execution in Action</i> .....	27
Summary of Key Learnings and Recommendations .....	30
<i>The Opportunities</i> .....	31
<i>The Barriers</i> .....	31
<i>Recommendations for Scaling Private Investment Into NDCs</i> .....	32
References.....	37

# List of Abbreviations

<b>AIRD</b>	national association of industrials
<b>C&amp;I</b>	commercial and industrial
<b>CEIA</b>	Clean Energy Investment Accelerator
<b>DPPA</b>	direct power purchase agreement
<b>EE</b>	energy efficiency
<b>EEA</b>	Ethiopian Energy Authority
<b>ESCOs</b>	energy service companies
<b>GEOP</b>	Green Energy Option Program
<b>GHG</b>	Greenhouse gas
<b>GIZ</b>	German Agency for International Cooperation
<b>IKI MI</b>	International Climate Initiative Mobilizing Investment
<b>IMM</b>	investment mobilization measures
<b>LEDS GP</b>	Low Emissions Development Strategies Global Partnership
<b>LPG</b>	liquefied petroleum gas
<b>MEM</b>	Ministry of Energy and Mines
<b>MINAM</b>	Department of Climate Change within the Ministry of Environment
<b>NAMAs</b>	Nationally Appropriate Mitigation Actions
<b>NDC</b>	Nationally Determined Contribution
<b>NDCs</b>	Nationally Determined Contributions
<b>NREL</b>	National Renewable Energy Laboratory
<b>PHILRECA</b>	Philippines Rural Electric Cooperative Association
<b>PSPs</b>	public service providers
<b>PWC</b>	PriceWaterhouseCoopers
<b>RE</b>	renewable energy
<b>REC</b>	renewable energy credit
<b>RFP</b>	request for proposal
<b>RPS</b>	Renewable Portfolio Standards
<b>SIPs</b>	Solar irrigation pumps
<b>SREDA</b>	Sustainable and Renewable Energy Development Authority
<b>SSN</b>	SouthSouthNorth
<b>SWS</b>	Solid waste sector
<b>VAT</b>	value-added tax



# Mobilizing Finance for Climate Action

## Strategies Informed by the International Climate Initiative's Mobilizing Private Investment Program

April 2020

### Executive Summary

#### Program Description

Strategies to mobilize and engage the private sector in the implementation of Nationally Determined Contributions (NDCs) under the Paris Agreement have taken center stage since 2016. This “Mobilizing Finance for Climate Action” report presents approaches for actionable NDC finance mobilization efforts. The strategies presented in this report will help development institutions, developing country governments and implementation partners identify and address key regulatory and policy barriers and capital market gaps that are impeding climate finance flows. This analysis draws from lessons learned and experiences across the International Climate Initiative Mobilizing Investment (IKI MI)

program and work under the Low Emissions Development Strategies Global Partnership (LEDS GP) Finance Working Group over the past several years supporting developing country partner governments on NDC finance.

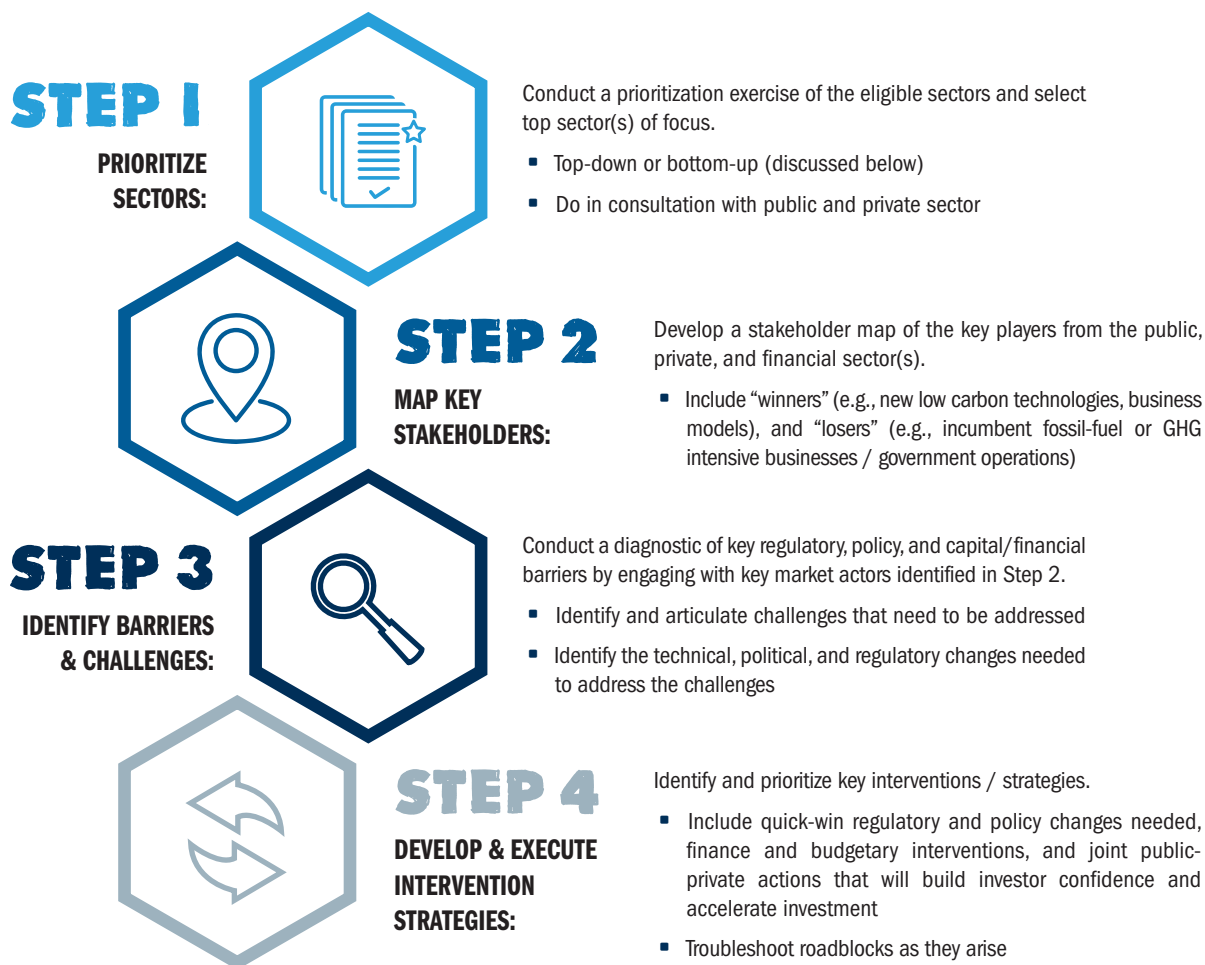
Successful NDC implementation strategies are based on comprehensive analysis and understanding of the key **financial, political, and cultural barriers** that are impeding finance mobilization and flows. While there is no “one-size-fits-all” for NDC finance mobilization approaches, the process outlined in this report has proven successful across a number of countries. Using the process presented in this report should enable implementers to:

**Successful NDC implementation strategies are based on comprehensive analysis and understanding of the key financial, political, and cultural barriers that are impeding finance mobilization and flows.**

- Clearly articulate opportunities and barriers to funding and financing a country's NDCs at the specific goal level;
- Identify priority areas where key policy and regulatory changes are needed to address market barriers;
- Map key institutional and governance actors and institutions across stakeholder groups in target sectors;
- Develop specific recommendations for interventions/tools that can be used to address capital market gaps; and
- Execute a targeted strategy that results in mobilized private finance flows into the desired sector.



The following steps can be taken sequentially and sometimes iteratively, depending on specific country circumstances and will serve as important guideposts along the climate finance mobilization journey.



Source: LEDS GP Finance Working Group / Electric Capital Management, 2020

This NDC finance mobilization strategic process, when executed systematically and in partnership with the right set of stakeholders, can help countries and implementing partners rapidly identify and address the key policy and regulatory challenges that are impeding private finance flows and lay the groundwork for successful NDC implementation.

## IKI MI Program

The IKI MI program identified replicable best practices for mobilizing significant investment (public and private) for NDC implementation in priority subsectors in selected countries. The overarching program objective was to support public actors in creating favorable conditions for financing of NDC implementation by reducing barriers to investment and providing incentives and increasing scale of demand where this was required. The program aimed to facilitate changes in three specific areas that will contribute to a more favorable investment environment for the private sector:

- Support decision-makers (including relevant ministries, public sector bodies, and other institutions in target countries) by developing specific investment mobilization measures for identified sectors.
- Work with private sector actors in each country to raise awareness around opportunities for investment and collaboration.
- Synthesize learning and coordinate knowledge sharing

IKI MI partner countries include: Bangladesh, Dominican Republic, Ethiopia, Kenya, Peru, Philippines, and Vietnam.

## NDC Finance Mobilization Strategies

The NDC financing landscape is evolving rapidly as governments begin to look more seriously at scaling investment into NDC implementation and opportunities and barriers become clearer. The IKI MI program identified a number of common opportunities and challenges across the seven implementing countries participating in the program.



## THE OPPORTUNITIES

- **Strengthened political resolve:** NDC implementation imperatives have opened new opportunities for systemic changes within both the public and private sectors across the globe. Coordinated approaches are required to fully capitalize on those opportunities.
- **Many pathways to success:** There are a range of approaches to mobilizing financing for NDCs that can be successful, including both “bottom-up” and “top-down” strategies. Often only one or two conditions in a given market need to be changed to enable scaling of a particular intervention, e.g., reduction or removal of a tax, building momentum through public education and awareness campaigns, or a targeted regulatory change that addresses a key barrier.
- **Enhanced private sector interest:** The private sector is eager to engage with NDC financing and implementation efforts in many sectors. In other sectors, such as adaptation, more work needs to be done to develop business models and investment cases that are compelling to the private sector. Successful engagement with the private sector must include business and investment opportunities that fit within individual investor risk/return profiles and requirements.
- **Policy and regulation matters:** Targeted policy and regulatory changes can have a significant impact. Taxes and tariffs (e.g., import taxes and value added taxes) were frequently cited as a barrier to clean technology uptake in key markets. Because many of these technologies are relatively new and the markets are evolving rapidly, the regulatory system has not always kept up with technology and business model innovation.



## THE CHALLENGES

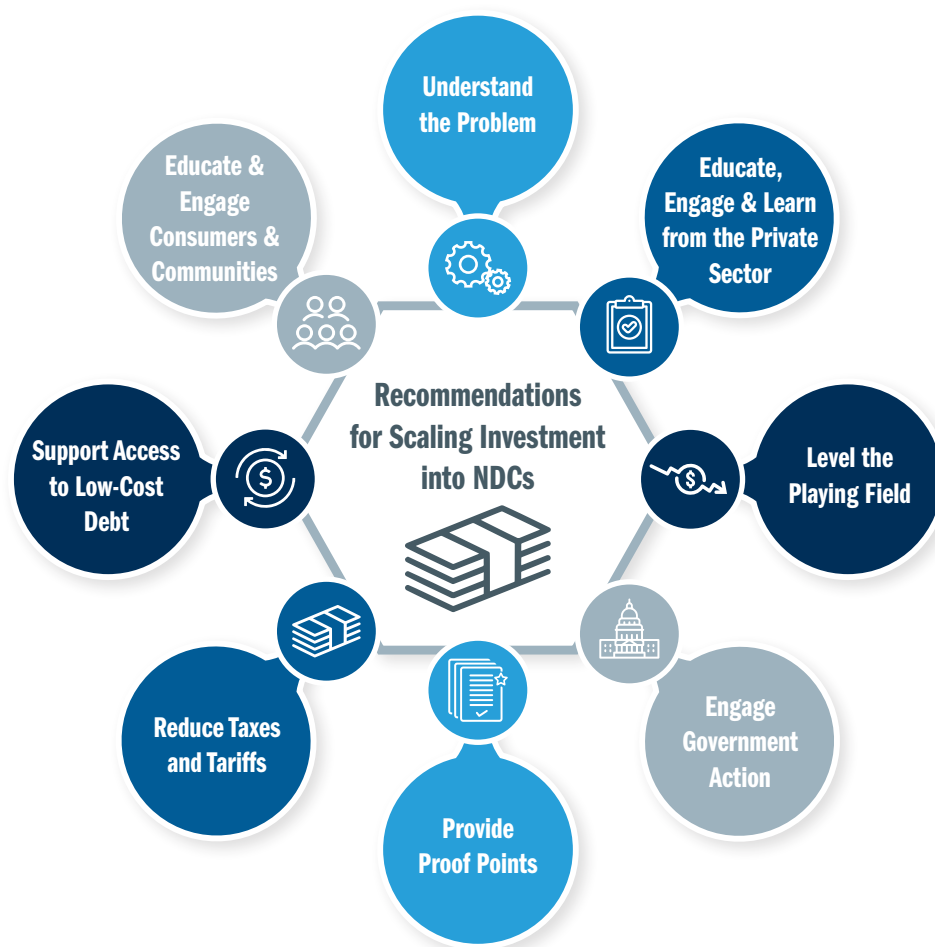
Several common challenges to mobilizing private finance into NDC priorities were identified across IKI MI implementation teams and countries. These include:

- **Prevailing capital market conditions:** Challenging prevailing capital market conditions (e.g., general ease-of-doing-business metrics, currency fluctuation, and restrictions on direct foreign investment) negatively affect the availability, accessibility, and cost of private capital in many developing country markets.
- **Taxes and tariffs:** Unfavorable tax and tariff treatment often make low carbon technologies uncompetitive on a cost basis with fossil fuel-based alternatives. A lack of transparency on tariff outlooks complicated assessments of the present and future value of potential investments.
- **Local financing institution education:** Local and international financial institutions often lack knowledge and understanding of low carbon technologies and tend to have lower risk appetites for untested business models; which makes access to capital for NDC implementation both more difficult and more expensive.
- **Private sector knowledge:** Private sector partners (e.g., commercial and industrial companies) often lack understanding and expertise regarding technology, business, and financing options for low carbon businesses and technologies, particularly those that are newer.
- **Lack of data and proof points:** Access to market and performance data, a lack of funding to finance pilot and demonstration projects, and a discrepancy between financial performance projections and actual project performance for new business models and technologies can all negatively impact the value proposition of new technologies and businesses.
- **Vested interests:** Private sector players with a vested interest in maintaining the status quo often have significant ability to influence policy and regulatory changes in a given market. As low carbon technologies and business models threaten fossil-fuel based businesses political systems may be put under increasing pressure. Public-private partnerships should be structured to advance investment in a given NDC implementation sector as broadly as possible.

These opportunities and challenges helped inform the development of the step-by-step process outlined below, which is designed to overcome identified barriers in a given country and capitalize on opportunities. Following these steps will support successful implementation of NDC financing goals.



# Recommendations for Scaling Investment Into NDCs



Source: LEDS GP Finance Working Group / Electric Capital Management, 2020



**Understand the problem:** Develop targeted sector, technology, and/or business model-specific policies and interventions based on analysis and stakeholder engagement that will serve as building blocks toward meeting a selected NDC commitment. Clearly identify policies, interventions, and stakeholders that could hamper progress toward meeting the NDC.



**Educate, engage, and learn from the private sector:** Engagement, education, and training of key private sector actors can quickly scale and amplify messages and strategies. The private sector has a wealth of information regarding key policy, regulatory, and capital market barriers for a given sector, business, or technology. When aligned with NDC implementation priorities, the private sector can be a powerful advocate for change; when misaligned, they can seriously impede or stop progress.



**Level the playing field:** Clearly evaluating “the competition” is fundamental to successful finance mobilization strategies for NDCs. In order to see scaled investment in a climate-aligned technology or solution, it needs to be commercially attractive when compared to carbon-intensive alternatives. Interventions should drive the cost of a low carbon good or service below the cost of the incumbent fossil fuel-based technology or alternative.



**Engage government action:** Government leadership and engagement in NDC implementation is central to scaling private investment and mobilizing finance. This includes provision of clear and fair regulatory and policy frameworks as well as targeted and thoughtful policy and finance interventions that enable low carbon businesses and technologies to advance in a given market.



**Provide proof points:** New business models and technologies face a wide range of barriers to implementation and scale. Governments and donors can play a key role in addressing those through well-executed pilot projects and demonstration projects designed with a private sector lens. Rigorous analysis, monitoring, and evaluation of lessons learned on the viability of the business model can help inform more targeted public policy and financing interventions for that specific sector. The private sector should be at the table through the design and demonstration process, and policies and incentives should be designed to ensure private sector uptake and action at the conclusion of the pilot.



**Reduce taxes and tariffs:** Unfavorable tax and tariff treatment can make low carbon alternatives uncompetitive on a cost basis with fossil fuel-based alternatives in many countries. Addressing this barrier can be a relatively low-cost way to incentivize low carbon technology adoption. Conversely, removal of existing subsidies and favorable tax treatment for fossil fuel-based incumbent technologies can be an effective way to address NDC finance mobilization, returning much needed funds to public coffers and leveling the playing field for new, low-carbon alternatives.



**Support access to low-cost debt:** The high cost of capital--particularly local debt capital--was identified as a significant barrier in most countries in the IKI MI program. While the economics for many low carbon technologies are improving, high financing costs still serve as a significant barrier to deploying at scale.



**Educate and engage consumers and communities:** The success or failure of many new technologies will depend on consumer preferences and uptake. Innovative public education and engagement campaigns can play an important role in supporting the transition to cleaner alternatives, and can bolster early stage business models and unfamiliar technologies and practices.

Taken together, these strategies can rapidly overcome specific market barriers and enable implementation of a successful NDC financing plan. This report highlights examples of how these various approaches were implemented across IKI MI country partners and how these lessons can be replicated and applied across countries and sectors.



## Introduction

A high proportion of developing countries can only achieve the Nationally Determined Contribution (NDC) commitments that have been made under the Paris Agreement<sup>1</sup> if they have access to climate finance support. The IKI Mobilising Investment (MI) program has explored the question of what it takes to unlock private sector climate finance as a sustainable investment stream towards NDC implementation.

Through practical pilot intervention the IKI MI program has drawn several important lessons on how private climate finance flows can be best incentivized. The program explored approaches to encourage and facilitate private sector investment into NCDs in seven developing countries, including: Bangladesh, Dominican Republic, Ethiopia, Kenya, Peru, Philippines, and Vietnam over several years.

Mobilizing sources of finance into the technologies and businesses that will achieve NDC goals is multi-faceted and this document presents a synthesis of approaches taken in the IKI MI target countries and draws key learnings from these approaches.

Implementing partners followed a process that sought to identify and address key regulatory and policy barriers and capital market gaps in the context of unique country circumstances. The process draws from lessons learned and experiences across the IKI MI program and draws on work under the LEDS GP Finance Working Group. These lessons are highly relevant for development agencies in the climate sector as well as national decision makers and implementing partners.

---

<sup>1</sup> Nationally determined contributions (NDCs) are at the heart of the Paris Agreement. NDCs embody efforts by each signatory country to reduce national emissions and adapt to the impacts of climate change.

## The IKI MI Program

The IKI MI program identified replicable best practices for mobilizing significant investment (public and private) for NDC implementation in priority subsectors in the target countries. The program objective supported public actors in creating favorable conditions for financing of NDC implementation by reducing barriers to investment and providing incentives and increasing scale of demand where this was required.

The program strengthened national and subnational capacities and learning on financing NDCs by addressing key challenges and sharing knowledge – through bilateral learning exchanges and facilitated discussion.

The program aimed to facilitate change in three specific areas that will contribute to a more favorable investment environment for the private sector:

- 1 Support decision-makers (including relevant ministries, public sector bodies, and other institutions in target countries) by developing specific investment mobilization measures for identified sectors.
- 2 Work with private sector actors in each country to raise awareness around opportunities for investment and collaboration.
- 3 Synthesize learning and coordinate knowledge sharing.

## IKI MI Learning Themes

This report is an output of the LEDS GP Finance Working Group under the IKI MI program - Learning Theme 1 and 2. The learning workstream under the IKI MI program is designed to directly support government decision-makers to develop investment mobilisation measures for key sectors. This includes gathering, understanding and sharing good practices. In collaboration with the LEDS GP, the IKI MI learning program enables learning and replication within and among countries and through peer networks – from national to regional to international and vice versa.

The learning themes have been implemented to capture, synthesize and share learning across and beyond the program.

- **Learning Theme 1:** Financing Distributed Low Carbon, Climate Resilient Energy Systems of the Future in Africa and Asia
- **Learning Theme 2:** Clean Energy Demand Stimulation and Finance Across Asia and Latin America










## IKI MI Program Methodology

- Desk-based and secondary research
- Primary data collection and analysis through in-country visits and structured interviews
- Expert consultations

# Program Overview








Table 1 below summarizes the IKI MI country program work and key interventions. Additional documents and links to program outputs are available in Table 4.

**Table 1: IKI MI Country Program Background Information**

Country	Sector	Implementation Partner	Overview of Objective	Key Interventions
<b>Bangladesh</b>   	Energy / Transport	PriceWaterhouse Coopers (PWC)	Develop bankable business models and investment cases for <b>solar mini-grids, solar irrigation pumps (SIPs)</b> , and solar boats, as well as the development of a geospatial mapping tool for prioritizing sites for the rollout of SIPs	<ul style="list-style-type: none"> <li>Government agency, Sustainable and Renewable Energy Development Authority (SREDA), involved with decision-making from outset</li> <li>Consultation with government's NDC advisory committee that resulted in sector selection of the IKI MI program</li> <li>Program aligned with national priority to scale solar irrigation pumps and solar mini-grids</li> <li>Competent and connected local policy advisor / program implementer</li> </ul>
<b>Dominican Republic</b>  	Energy	National Renewable Energy Laboratory (NREL)	<b>Energy efficiency in the commercial and industrial sector</b> through capacity building efforts, net metering scoping work with interested partners, and establishing partnerships with the National Association of Industrials (AIRD)	<ul style="list-style-type: none"> <li>Program aligned with the government's NDCs and goals</li> <li>Strong on-the-ground partnership with GIZ Dominican Republic</li> </ul>
<b>Ethiopia</b>  	Energy	SouthSouthNorth	Applied research on clean energy for productive use in agriculture clusters built significant momentum for the <b>mini-grid sector</b> , resulting in regulatory support from government and funding commitments from donor agencies and the private sector	<ul style="list-style-type: none"> <li>Partnership with private sector consultancy that has strong ties with the agency driving the country's customization process of farmers</li> <li>Building capacity among government stakeholders</li> <li>Exploring productive use opportunities in the agriculture sector</li> </ul>
<b>Kenya</b>  	Energy	SouthSouthNorth	Promoting <b>bioethanol for cooking</b> by displacing kerosene and charcoal using technology and business model innovation. Program interventions included applied research, which played a significant role in assisting finance raising for private sector production.	<ul style="list-style-type: none"> <li>Partnership with private sector company that can deploy clean cooking fuels at scale</li> <li>Advocated for a zero-rated value-added tax (VAT) on imported bioethanol, which was announced as part of 2019 budget speech</li> </ul>

Source: LEADS GP Finance Working Group / Electric Capital Management, 2020

**Table 1: IKI MI Country Program Background Information** CONTINUED

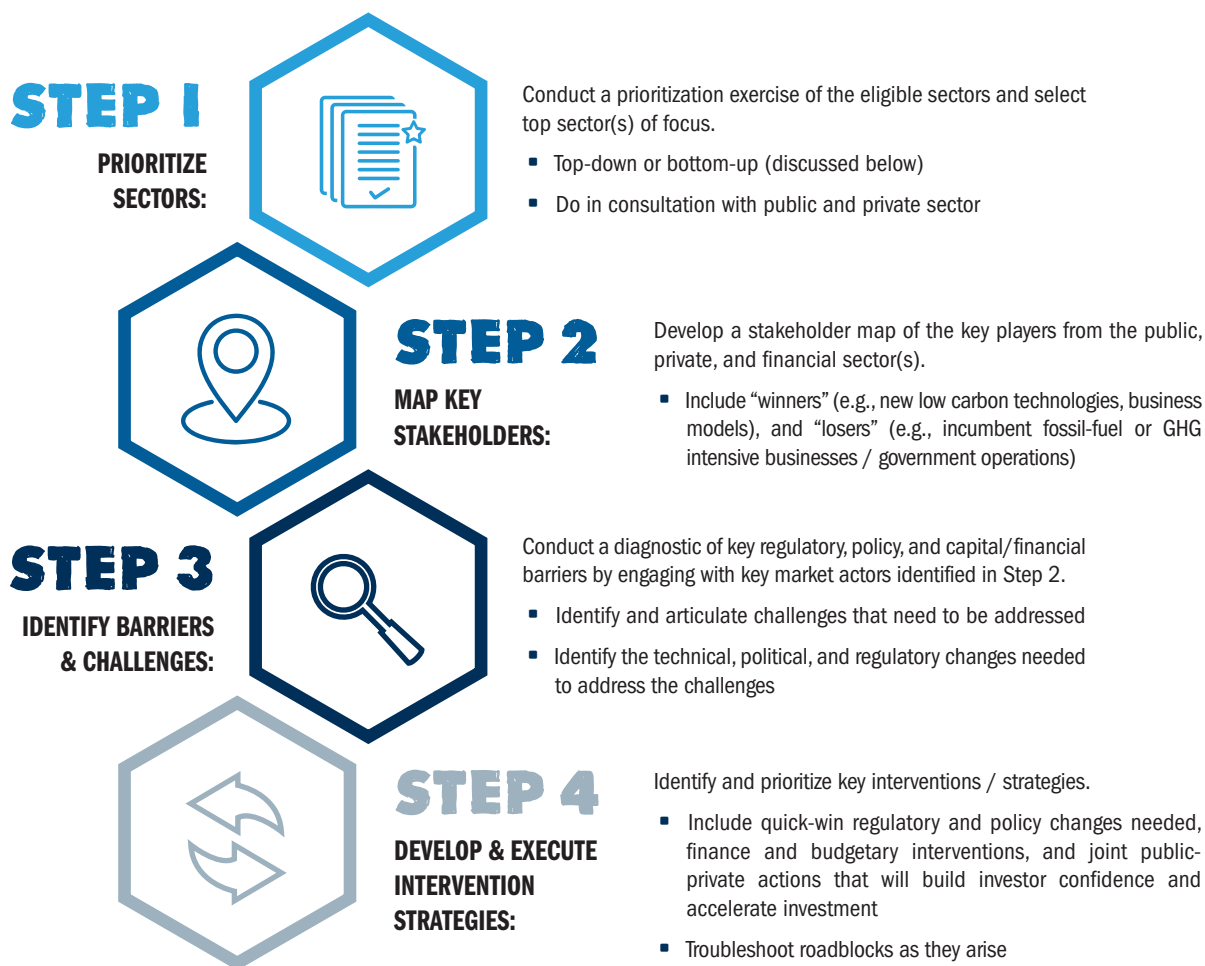
Country	Sector	Implementation Partner	Overview of Objective	Key Interventions
<p><b>Peru</b></p> 	<p>Waste / Energy</p>  	PriceWaterhouse Coopers (PWC)	Develop business models for <b>Waste Management and Waste-to-Energy</b> , specifically investment cases for landfill gas capture, leachate management, and waste-to-energy.	<ul style="list-style-type: none"> <li>Build investment cases and policy analyses</li> <li>Successfully engaged private sector leads to a strong understanding of the barriers to entry/investment</li> </ul>
<p><b>Philippines</b></p> 	<p>Energy</p> 	National Renewable Energy Laboratory (NREL) via the Clean Energy Investment Accelerator (CEIA)	CEIA - Philippines is building the capacity of private distribution utilities to implement renewable energy targets while also supporting key municipalities to <b>mobilize private sector clean energy investments in high-growth regions of the country.</b>	<ul style="list-style-type: none"> <li>Supporting utilities: Helping private distribution utilities and electric cooperatives navigate new Renewable Portfolio Standards (RPS) mandates and building capacity to enable utilities to meet and exceed their targets</li> <li>Working in partnership with city governments to convene local businesses, and raise awareness on cost-saving renewable energy procurement options</li> </ul>
<p><b>Vietnam</b></p> 	<p>Energy</p> 	National Renewable Energy Laboratory (NREL) via the Clean Energy Investment Accelerator	CEIA - Vietnam convenes business and government stakeholders to overcome market barriers, prove aggregated RE procurement models, and <b>scale renewable energy deployment.</b>	<ul style="list-style-type: none"> <li>Leading quarterly Renewable Energy Buyers Working Group Dialogues with the private sector</li> <li>Amplifying renewable energy (RE) policy and regulatory insights and private sector inputs</li> <li>Offering aggregated RE pilot project support for large buyers across multiple sites</li> <li>Sharing CEIA templates, tools, and guidebooks for corporate RE buyers</li> </ul>

Source: LEADS GP Finance Working Group / Electric Capital Management. 2020

## Approaches to Developing a NDC Financing Strategy

Successful NDC mobilization strategies are based on comprehensive analysis and understanding of the key financial, technical, political, and cultural barriers that are impeding progress. While there is no one-size-fits-all for NDC finance mobilization approaches, the process presented in this report and outlined below has proven successful across a number of IKI MI countries. These steps can be taken sequentially or iteratively depending on specific country circumstances, and should be viewed as a cycle, particularly between steps three and four. Successful finance mobilization requires sustained and strategic engagement as barriers and challenges are identified and addressed. Rapidly evolving political, policy, and technological conditions require ongoing analysis and action in order to achieve NDC goals and drive low carbon technology and business model adoption at scale. This also points to a need for enhanced flexibility and cooperation across NDC implementation partners, including governments and the private sector.

**Successful finance mobilization requires sustained and strategic engagement as barriers and challenges are identified and addressed. Rapidly evolving political, policy, and technological conditions require ongoing analysis and action in order to achieve NDC goals and drive low carbon technology and business model adoption at scale.**



Source: LEDS GP Finance Working Group / Electric Capital Management, 2020

## Bottom-up or Top-down?

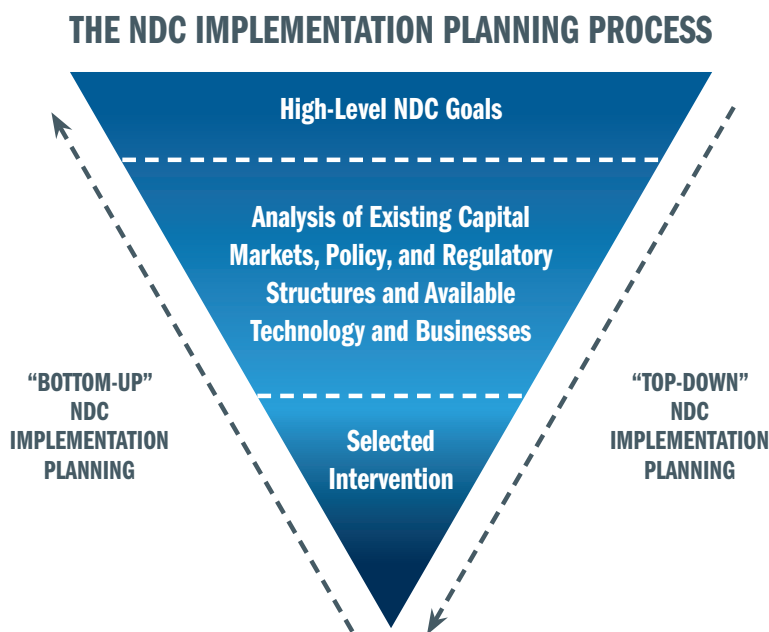
**Coordinated top-down national planning can directly influence the nature and location of private investment. This process should be mandated at the highest levels of government and with multi-ministerial and stakeholder engagement.**

The NDC finance mobilization process can be undertaken through a “top-down” or a “bottom-up” approach, or a combination of the two. A top-down approach typically entails starting with a high-level NDC goal and working backwards to identify the areas of greatest opportunity, or “lowest hanging fruit” for implementation and finance (e.g., the ‘Masterplan’ developed in Kenya). This can be done by conducting a systematic analysis of the high-level emission reduction commitments overlaid with an analysis of existing capital markets, policy, and regulatory structures and available technology and businesses. These analyses should also take into consideration other key priorities related to economic and social development in a given sector. Coordinated top-

down national planning can directly influence the nature and location of private investment. This process should be mandated at the highest levels of government with multi-ministerial and stakeholder engagement.

Bottom-up approaches to NDC financing start with a specific sector, entry point, and/or technology that could contribute to the achievement of a country’s NDC objectives if properly incentivized and engaged. In a bottom-up approach, analysis might begin with a specific sector (e.g., the municipal solid waste sector in Peru) or with a specific customer class or technology (e.g., the commercial and industrial sector in Vietnam and its uptake of solar energy, or energy efficiency measures in the commercial and industrial sectors in the Dominican Republic). Inquiries may begin with a specific intervention or use case and map up to the conditions—including regulatory, political, and financial—that might be impeding uptake in each market at the local and national levels.

**Figure 1: Top-down vs Bottom-up NDC Planning Process**



Source: LEDS GP Finance Working Group / Electric Capital Management, 2020



Under the IKI MI program, both “top-down” and “bottom-up” approaches were applied. In some countries, such as Peru, both approaches were required, including consultations with the Department of Climate Change within the Ministry of Environment (MINAM)<sup>2</sup> and a bottom-up analysis of specific projects in the municipal waste sector. This allowed for a more coordinated effort in the country, given the specific project dynamics and country implementation plan. In other countries, such as the Dominican Republic (commercial and industrial energy efficiency), Vietnam (commercial and industrial solar energy uptake), and Ethiopia (clean energy in the agriculture sector), a more bottom-up approach was pursued. In Kenya, the IKI MI program started with a top-level analysis of the bioethanol sector and developed a country-level master plan for implementation of that specific sector.

Private sector actors working in a given area in a particular country can very quickly identify the key policy, regulatory, and financial barriers that are impeding their ability to scale or deploy a product, technology, or business. For example, in Kenya, import duties made clean cooking fuels substantially more expensive than their fossil fuel-based counterparts in the market, thereby slowing uptake by consumers. The IKI MI team worked with the private sector to identify the opportunity for bio-ethanol as a fuel substitute, should the barrier be reduced, and developed a strategy to engage the government and regulators to advance tariff reform. In parallel, a study reviewed potential for domestic production. In the Dominican Republic, a lack of capacity to appropriately assess project risks, as well as lack of affordable financing resources were identified as key barriers to deploying energy efficiency measures. The IKI MI team engaged with the National Association of Industrials (AIRD) to educate their members as well as with financial institutions to address the knowledge and financing gaps.

**Private sector actors working in a given area in a particular country can very quickly identify the key policy, regulatory, and financial barriers that are impeding their ability to scale or deploy a product, technology, or business.**











## Key Learning

There is no one “right” way to go about mobilizing finance for NDC implementation, and what works in one sector/country may not work in another. Finance mobilization strategies need to include macro-economic interventions, such as improving scores across the elements included in the World Bank’s Ease of Doing Business rankings.<sup>3</sup> They also need to be tailored to the specific challenge being addressed and should include targeted interventions to address specific barriers once they’ve been identified, such as increasing uptake of a new clean cooking fuel stove through reduction of import duty requirements.

<sup>2</sup> Consultations with MINAM took place prior to the start of the IKI MI program; the IKI MI program drew on and applied the outcomes of these consultations to the country program strategy and implementation plan.

<sup>3</sup> <https://www.doingbusiness.org/en/methodology> and [https://data.worldbank.org/indicator/IC.BUS.EASE.XQ?most\\_recent\\_value\\_desc=false&view=map](https://data.worldbank.org/indicator/IC.BUS.EASE.XQ?most_recent_value_desc=false&view=map)

**Table 2: Top-down vs Bottom-up Approaches in IKI MI Countries**

 <b>Top-down</b> 	 <b>Bottom-up</b> 
<div data-bbox="237 268 443 394">  </div> <div data-bbox="500 323 743 359"> <p><b>BANGLADESH</b></p> </div> <p data-bbox="237 407 792 804">During the inception phase of the Bangladesh program, a scoping study was undertaken to identify the NDC-aligned sub-sector that was most ready for private sector investment. The study examined the opportunities to support public actors and the private sector by de-risking investments and increasing the scale of demand.<sup>4</sup> Out of a total of nine subsectors originating from Bangladesh's NDC, five sub-sectors were identified with the biggest potential for private sector investment, including improved crop production (agriculture), Energy Efficiency (EE) (industry), Renewable Energy (RE) (power), modal shift (transport), and electric vehicles (transport). For each of these short-listed subsectors, a preliminary assessment of the type, scale, and key barriers to private sector investment was developed.<sup>5</sup> Provided the barriers could be mitigated/removed, off-grid solar was identified as a sector with strong potential.</p>	<div data-bbox="829 268 1023 394">  </div> <div data-bbox="1117 323 1287 359"> <p><b>VIETNAM</b></p> </div> <p data-bbox="829 407 1385 743">In Vietnam, the Clean Energy Investment Accelerator (CEIA) was established in 2016 to answer two basic questions: “How can demand for clean energy be strengthened among industrial and corporate partners in important emerging markets to support NDC implementation?” and “How can that demand be leveraged to support needed policy and regulatory reforms in those specific markets?” This bottom-up approach resulted in an engaged set of consultations with key stakeholders in the corporate and industrial sectors that identified a clear set of market conditions as well as policy/regulatory and financing challenges that needed to be addressed at the national level in order to unlock the investment and deployment opportunities that existed.</p>
<div data-bbox="237 846 415 968">  </div> <div data-bbox="553 905 678 940"> <p><b>KENYA</b></p> </div> <p data-bbox="237 989 792 1209">In Kenya, the IKI MI team identified bio-ethanol as a promising clean cooking fuel alternative to kerosene. After conducting a preliminary market assessment and series of consultations with both the government and the private sector, the project commissioned a country-level bioethanol master planning analysis to quantify the investment opportunity, signal to investors that the sector is “open for business,” and build public sector support by quantifying co-benefits to the development of the sector.</p>	<div data-bbox="829 846 1065 968">  </div> <div data-bbox="1141 905 1312 940"> <p><b>ETHIOPIA</b></p> </div> <p data-bbox="829 989 1385 1325">In Ethiopia, renewable energy powered mini-grids were identified as a good opportunity to meet the country's ambitious electrification and economic development objectives. The IKI MI team worked with key government ministries to address key barriers to clean energy mini-grid uptake, which included unclear regulatory frameworks which hampered licensing to operate mini-grids legally in different parts of the country. The IKI MI team commissioned an analysis to demonstrate the viability of private sector mini-grids in the agriculture sector and developed financial models that would enable provision of power to households at the low national tariff while enabling agricultural collectives to pay cost-reflective tariffs funded by productivity gains for reliable clean energy supply</p>
<div data-bbox="237 1360 415 1482">  </div> <div data-bbox="565 1419 662 1455"> <p><b>PERU</b></p> </div> <p data-bbox="237 1503 792 1776">During the first phase of the project, the MI team used the Nationally Appropriate Mitigation Actions (NAMAs) as a starting point and worked closely with the Department of Climate Change within the Ministry of Environment (MINAM) to identify the priority sector for the project. MINAM decided that given the lack of private sector involvement in the waste sector in Peru and the relative ease of coordinating projects among MINAM's departments (the climate change and waste management departments) it was agreed that the waste sector (the disposal of waste) would be the focus of the MI project in Peru.</p>	<div data-bbox="829 1360 1008 1482">  </div> <div data-bbox="1154 1419 1252 1455"> <p><b>PERU</b></p> </div> <p data-bbox="829 1503 1385 1776">In Peru, the IKI MI team conducted analysis to produce indicators and information on the required levels of investment, operation costs, implementation risks, and estimated greenhouse gas (GHG) reductions of the various landfill gas emissions reductions and leachate management technologies. This information was to be disseminated among public and private actors in the waste management sector in order to incentivize involvement (and ultimately mobilize investment) to provide an efficient and sustainable solution to the challenges of final disposal of municipal waste.”<sup>6</sup></p>

4 [https://southsouthnorth.org/portfolio\\_page/mobilising-investment-for-ndc-implementation/](https://southsouthnorth.org/portfolio_page/mobilising-investment-for-ndc-implementation/)

5 <https://cdkn.org/wp-content/uploads/2019/09/MI-Bangladesh-Scoping-Study.pdf>

6 <https://cdkn.org/wp-content/uploads/2019/09/Concept-Note-SJB.pdf>

# Deep-dive: A Closer Look at Developing a NDC Finance Strategy

This section examines the key steps associated with developing a NDC financing strategy. Applied case studies from the IKI MI program are highlighted in the various steps to provide additional insights and learnings.



## Step 1: Sector Prioritisation

**Step 1 - Articulate and prioritize sectors for alignment and impact:** Conduct an analysis to identify which sectors are prioritized within the NDC then map this against the largest emitters that could have the greatest impact on reducing emissions and GHGs. Also consider key economic and social development objectives for the country, including potential for job creation, adaptation, and resilience, environmental protection and restoration, human health and social development impacts, and so forth. Undertake a prioritization exercise that accounts for country-specific factors and considerations through a detailed landscape assessment (explained in step 2). As noted above, this process can be undertaken either through a top-down or bottom-up approach. Being as clear as possible from the outset with regard to the specific sector or issue being addressed is an important aspect of developing an effective and targeted strategy.

### Country Snapshots: Prioritisation in Action



#### BANGLADESH

In addition to being a leader and an advocate of climate stewardship, Bangladesh is committed to reducing its greenhouse gas emissions under its NDC commitments to a 5% reduction from BAU levels by 2030 (unconditional) and up to a 15% reduction contingent on external resources. During the initial phase of the program, the IKI MI Bangladesh team undertook a scoping study<sup>7</sup> to identify the most fundable subsector in relation to Bangladesh's NDC. The study examined the potential to support public actors and the private sector to create favorable conditions for private investment in implementing NDCs by de-risking investments and increasing the scale of demand. This top-down analysis resulted in the short-listing of five sub-sectors for further analysis and engagement: 1) improved crop production (agriculture), 2) energy efficiency (industry), 3) renewable energy (power), 4) modal shift (transport), and 5) electric vehicles (transport).



Source: IKI MI Country Teams

<sup>7</sup> <https://cdkn.org/wp-content/uploads/2019/09/MI-Bangladesh-Scoping-Study.pdf>



## VIETNAM

Vietnam’s Nationally Determined Contribution (NDC) commitment to the United Nations Framework Convention on Climate Change (UNFCCC) states: “With domestic resources, GHG emissions will be reduced by 8% by 2030 compared to the Business as Usual scenario (BAU). The above-mentioned contribution could be increased up to 25% with international support.”<sup>8</sup> This economy-wide target could be achieved via multiple sectors and strategies. For the energy sector, the NDC only says: “Apply energy savings and efficiency, and renewable energy applications in the residential sector, trade and services.”<sup>9</sup> Different energy generation and conservation approaches use a wide range of technologies and business models; thus detailed sector-specific plans must be developed.

Corporate demand in the U.S. for clean energy has played a significant role in both advancing market scaling and in advancing regulatory and policy reform in key states to enable increased uptake of renewable energy. In the United States, the Renewable Energy Buyers Alliance (REBA) was established to provide a place for large corporations, many of which have a significant international presence through their business operations and supply chains, to learn from one another and coordinate on renewable energy procurement strategies. The CEIA team was interested in replicating the success of REBA and the role that corporate procurement strategies could play in accelerating uptake of renewable energy in Vietnam, and set out to identify the key market and policy and regulatory obstacles to unlocking demand from corporations for clean energy.



## Step 2: Landscape Assessments

**Developing a stakeholder map to understand the key stakeholders, decision-makers, and financiers is central to identifying the key players best positioned to advance needed changes, including action at national, subnational, and sector-specific levels.**

**Step 2 - Map key stakeholders:** Develop a stakeholder map of the key players in the targeted sectors from the public, private and financial sector. This should include both “winners” (e.g. new low carbon technologies, business models and products) and “losers” incumbent fossil-fuel or GHG intensive businesses/government operations that may be impacted. Developing a stakeholder map to understand the key stakeholders, decision-makers, and financiers is central to identifying the key players best positioned to advance needed changes, including action at national, subnational, and sector-specific levels. These diagnosis and mapping efforts are fundamental to ensuring that both technical and political considerations are considered when developing

and executing a strategy. The first and most fundamental element of the market diagnosis process involves engaging with key stakeholders and market actors, including:

<sup>8</sup> <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Viet%20Nam%20First/VIETNAM'S%20INDC.pdf>  
<sup>9</sup> Ibid



### The private sector:

Including financing institutions such as banks, entrepreneurs, and project developers, as well as potential purchasers of the good or service.



### Key government agencies and regulatory bodies:

Including Ministries of Finance as well as sector-focused line ministries such as energy, water, and agriculture.



### Other stakeholders:

Including other donor-funded initiatives and programs engaged in similar efforts in the country and sector in question.

Source: LEADS GP Finance Working Group / Electric Capital Management

## Country Snapshots: Landscape Assessment in Action



### KENYA

In Kenya, the existing alternatives to clean cooking fuel are charcoal and kerosene, or for higher income consumers, liquefied petroleum gas (LPG). The environmental, social, and health costs associated with dirty cooking fuel consumption are not factored into the price of the existing alternative. Therefore, the incremental costs associated with biofuel cooking fuel were identified as a market barrier. Further, there were deep cultural and social norms that were impeding uptake of previous clean cooking fuel products in the market that were identified as a barrier to scaling the new technology.



### VIETNAM

To conduct a landscape assessment, the CEIA team held extensive consultations with the key stakeholders to identify the key barriers to scaling investment in clean energy in Vietnam. The private sector in most markets can often provide, in just a few minutes, an excellent overview of the key regulatory, policy, and market barriers to deploying a particular technology or business model, and this was true in Vietnam. The CEIA team held consultations with:

- Multinational corporations that have committed to international clean energy procurement goals (such as RE100)
- Local solar and wind energy project developers
- Local financial institutions and financiers
- Other donors and programs active in this space
- The Government of Vietnam (including the Ministry of Industry and Trade, Ministry of Planning and Investment, and the government-owned utility EVN, among others)



Source: IKI MI Country Teams

## KEY LEARNING

Engaging with private sector stakeholders, including individual companies, industry associations, and other business trade alliances is essential to understanding market barriers and opportunities.

Many private sector players do not have deep technical expertise in climate change and low carbon technologies and policy. As a result, they are often open to partnering with donors and technical assistance organizations that can provide the necessary services (i.e. access to training). They are also often “influential” in that they can assist governments with delivering developmental objectives and developing strategies around enabling policy, regulations and incentives - all critical drivers to developing an effective NCD financing strategy.

In the Dominican Republic, the IKI MI team worked with the Association of Industries of the Dominican Republic (AIRD) to conduct training with commercial and industrial (C&I) companies on energy efficiency (EE) investment opportunities, methodologies, and tools for replication. This engagement highlighted key technical, data, and business case barriers present in the Dominican Republic C&I market.

In Vietnam, the IKI MI / CEIA team worked closely with the Vietnam Business Forum and the Renewable Energy Buyers Alliance to engage key stakeholders in the clean energy finance and development sector.



### Step 3: Identify Barriers and Challenges

Engage with key market actors (identified in Step 2) and conduct a real-time diagnostic of the key regulatory, policy, and capital/financial barriers in the market. Use this process to identify and articulate key challenge(s). Clearly identify the technical, political, and regulatory changes needed to address those challenges. It is also important to identify and articulate the challenges to implementation and execution of selected interventions.

**Mobilizing finance for NDC implementation occurs within an interconnected set of technical, political, and financial circumstances that need to be monitored, responded to, and shaped on an ongoing basis.**

Practical interventions are required to translate a high-level NDC goal into action. As part of this process, key barriers and challenges should be clearly identified. In many instances, articulation of the challenges being addressed is an iterative process that continues throughout implementation, as challenges may be interlinked. As additional information is gathered and circumstances and politics change, the understanding of challenges can evolve. Mobilizing finance for NDC implementation occurs within an interconnected set of technical, political, and financial circumstances that need to be monitored, responded to, and shaped on an ongoing basis.

There are several levels of analysis required in order to identify barriers and their relationship to one another. This is an important foundation for a targeted engagement strategy for finance mobilization.

1. **Prevailing capital market conditions** that affect private capital flows in each market should be considered and addressed if at all possible. The World Bank's Ease of Doing Business Index<sup>10</sup> provides a useful framework for addressing higher-level considerations for businesses operating in a particular country. However, the authors acknowledge that structural economic issues are usually beyond the scope of this engagement and often go to the heart of a lack of investor confidence in a particular country or region.<sup>11</sup> This analysis should include additional elements such as:

- a. Direct foreign investment rules and regulations (e.g., how easy is it for foreign investors to invest in a given country and then repatriate their capital from a country when appropriate)
- b. Foreign exchange rates and currency hedging services and tools
- c. Tax treaty status, value added taxes (VAT), and other tariff and import duties
- d. Prevailing high-level capital markets conditions, such as:
  - ⦿ the cost and availability of local-currency debt including prevailing interest rates and lending requirements,
  - ⦿ private debt and equity market strength,
  - ⦿ number of active investors in a given market,
  - ⦿ ability and willingness of lenders and investors to mobilize investment and debt capital into new sectors and technologies, and
  - ⦿ guarantee or hedging facilities/services available.

2. **Sector-specific conditions** that impact capital flows in each sector, such as:

- a. Prevailing permitting, regulatory, and policy structures for a given sector
- b. Presence of existing private sector businesses active in the sector in question
- c. Cost and availability of required technologies and services
- d. Prevailing cost of incumbent business/technology to consumers/customers
- e. Existing cultural or social norms or customs that could impede uptake of a new technology or business model

3. **Technology or business model specific analysis**

- a. Cost and availability of required technologies and services
- b. Supply chain assessment and mapping
- c. Availability of parts, labor, and other service providers, capacity to provide ongoing operations and maintenance

<sup>10</sup> <https://www.doingbusiness.org/en/rankings>

<sup>11</sup> The infrastructure gap in Africa

## When conducting an analysis of a sector, ask these key questions:



1. Is the proposed solution more or less expensive than existing alternatives? If so, why?
2. Are there prevailing cultural or social norms that could impede uptake of a new product or business model?
3. At a general level, who would this change benefit?
4. Who stands to lose from this change?
5. Which are the existing incumbent businesses and technologies that might benefit or be harmed?
6. Are there political winners and losers from this change? If so, who are they and how might they be affected?
7. Is this change alone sufficient to address the barriers identified or does it need to be implemented in conjunction with other changes?
8. Is there an ecosystem of private sector players in the sector who have the potential to drive scale?

Table 3 below indicates where the IKI MI implementing teams identified key challenges in each country - several of these barriers were identified at the beginning of the program but due to effective initiatives carried out by the IKI country teams, are now less significant roadblocks.

**Table 3: Common Barriers to NDC Finance Mobilization Across IKI MI Countries**

	Bangladesh	Dominican Republic	Ethiopia	Kenya	Peru	Philippines	Vietnam
Prevailing Capital Market Conditions		X	X	X	X	X	X
Taxes and Tariffs	X			X	X		
Financing Institution Education	X	X	X		X	X	X
Private Sector Education	X	X	X		X	X	X
Proof Points	X	X	X	X	X	X	X

Source: LEDES GP Finance Working Group / Electric Capital Management, 2020

## Snapshots from the Ground: Barriers and Challenges in Action



### KENYA

Through a triple-bottom line study<sup>12</sup> commissioned by the IKI team and conducted by Dalberg Global Development Advisors, the IKI team identified that the import and VAT tariffs were serving as significant market barriers to importing cleaner cooking fuels, including bioethanol. This additional cost imposed on imported bioethanol meant that the clean cooking fuel was not as competitive in the marketplace as the alternative dirty fuels (e.g., charcoal, wood, kerosene) or its equivalent liquid fuel, thus hindering the uptake of bioethanol. Other barriers for bioethanol uptake identified through the study included the need for bioethanol consumers to invest in a new cooking stove and the fact that until that point, most of the clean cooking fuels on the market required large bulk purchase of fuel.

<sup>12</sup> <https://southsouthnorth.org/wp-content/uploads/2018/11/Scaling-up-clean-cooking-in-urban-Kenya-with-LPG-and-Bio-ethanol.pdf>



## KEY LEARNING

### Targeted Communication Strategies

Using innovative marketing and communications approaches can be a powerful means of engaging key stakeholders, particularly consumers. Music videos, targeted ad campaigns, and educational materials presented in interesting and engaging ways can quickly and cost-effectively spread the message about a new business opportunity or technology.

### Cultural Considerations

Cultural practices, consumer habits, and generational preferences can play a determinant role in whether or not implementation of a new clean technology or practice is successful. This challenge is well illustrated in the clean cooking fuels arena. Despite decades of effort by both the public and private sector to scale uptake of clean cooking alternatives across Africa, progress lags and market penetration is slow, particularly among “bottom of the pyramid consumers” or consumers who have are “part of the largest but poorest groups of the world’s population, who live on less than \$2.50 a day”<sup>13</sup> as well as lower-middle class consumers. In Kenya, long-standing and deeply embedded preferences and traditions regarding cooking fuels and techniques have impeded uptake of clean cooking alternatives. To address this, the IKI MI team in Kenya developed a music video with a message about cooking with dirty fuels featuring a satirical new political party and a popular local rap artist in Swahili. This music video has been viewed more than 250,000 times<sup>14</sup> and has been a successful means of indirectly marketing a new product by using an important public health message to raise awareness of the dangers of dirty cooking fuels. The video can be viewed on YouTube.<sup>15</sup>



Through stakeholder engagement and a prioritization exercise of identified barriers within the solid waste sector (SWS), the IKI MI Peru team worked with MINAM to develop a short list of key investment mobilization measures (IMMs) required for the mobilization of private and public investment in the SWS, specifically its final disposal. For each of these IMMs, a high-level roadmap was developed in order to serve as a guide for MINAM for their implementation.

- Establish measures to increase collection of municipal taxes for public cleaning (including final disposal) through receipts of public service providers (PSP)
- Develop a methodological framework for the calculation of municipal taxes for public cleaning at a national level
- Incentivize the application of the “Obras por Impuesto” (Oxo) scheme for the implementation of final disposal infrastructure

<sup>13</sup> [https://web.archive.org/web/20170505144805/http://lexicon.ft.com/Term?term=bottom-of-the-pyramid-\(BOP\)](https://web.archive.org/web/20170505144805/http://lexicon.ft.com/Term?term=bottom-of-the-pyramid-(BOP))

<sup>14</sup> As of October 31st, 2019

<sup>15</sup> <https://www.youtube.com/watch?v=05adyqTUSd8>



## BANGLADESH

Initial analysis<sup>16</sup> in Bangladesh by the country team highlighted a number of macroeconomic challenges that are impeding private capital flows and direct foreign investment in the country. The team found that: “Attracting private finance..to support the implementation of national climate change priorities should be considered within the wider investment challenges Bangladesh faces in securing finance for development projects. Countries seen as high-risk on a global comparison...will continue to experience difficulties in attracting private sector investment and securing competitive debt finance. According to the 2017 report comparing business regulation for domestic firms in 190 countries, Bangladesh is ranked 176th in ease of doing business economies, 185th in terms of registering property, 187th in terms of getting electricity, and 189th for enforcing contracts.”<sup>17</sup>

The team further refined the barriers and challenges for clean energy by holding a stakeholder meeting around the current renewable energy financing arrangements with members of the public and private sector (page 8, Table 5)<sup>18</sup>; barriers for RE deployment and scale-up identified include:

- Lack of proven business models on the specific RE technologies and solutions in Bangladesh;
- Limited land availability for solar projects;
- Existing renewable energy (RE) financing facilities need more diversification in terms of lending;
- High cost of capital and collateral requirements for RE projects;
- Lack of tax and financing incentives;
- Gaps in technical capacities and understanding; and
- Uncertainty about long-term grid extension.



Source: IKI MI Country Teams

<sup>16</sup> <https://cdkn.org/wp-content/uploads/2019/09/IKI-Bdesh-NDC-sector-summaries.pdf>

<sup>17</sup> <https://cdkn.org/wp-content/uploads/2019/09/MI-Bangladesh-Scoping-Study.pdf>

<sup>18</sup> <https://cdkn.org/wp-content/uploads/2019/09/IKI-Bdesh-NDC-sector-summaries.pdf>



The Dominican Republic's climate-focused NDC is a 25% reduction in emissions from 2013 national baseline emissions by 2030 (conditional on external finance). The country seeks to meet this NDC by increasing energy efficiency, increasing the participation of non-conventional renewable energies, and by aligning with the Ministry of Energy and Mines (MEM) goal stated in a draft bill on energy efficiency: 13.2% energy consumption reduction by 2030.

With the above in mind, the IKI MI - Dominican Republic team led a study that revealed several significant barriers to scaling energy efficiency interventions in the C&I sector despite the potential for significant cost savings, including:

- Limited capacity by companies to self-identify energy efficiency improvements;
- Dependency on imported fossil fuels and high energy costs;
- Limited energy services sector, with few active energy services companies (ESCOs) successfully developing robust project pipelines;
- Energy efficiency investments are seen to compete with other corporate investments that may be viewed as more central to a business' success;
- Lack of cost-effective financial instruments to finance the upfront capital costs of energy efficiency improvements; and
- Lack of national planning, incentives, mandates, performance standards, building codes, etc.



Group representatives from the Ministry of Mines and Energy, Superintendents of Electricity, National Energy Commission, Electricity Distributor of the South, Dominican Corporation of Electricity Companies attending a workshop at the National Renewable Energy Laboratory in Golden, Colorado in April 2019.

Source: IKI MI Country Teams



## ETHIOPIA

In Ethiopia, the IKI MI team identified off-grid energy, in particular mini-grids as a nascent sector with significant potential. In spite of ambitious plans to extend the grid, at present more than 50% of the population lacks access to energy. There are significant barriers to the growth of the sector. Ethiopia has some of the lowest power prices in the world due to large hydropower resources and a heavily government-subsidized national electricity program. This leads to cultural challenges such as a prevailing expectation among the population that electricity tariffs will remain low. Additionally, there are significant market challenges, including an underdeveloped private sector, logistics challenges for delivering and maintaining services across vast distances, and untested business models that need to be adjusted for the Ethiopian context.

Currently, there are only a handful of private sector-implemented mini-grids in the country. The only company with a commercial mini-grid business model waited over a year before receiving their license agreements with Ethiopian Energy Authority (EEA). Delays were due to differences over tariff expectations and varying opinions about how donor grant funding should be treated in the project capital structure.<sup>19</sup> In spite of these challenges, there is a realization from the government that private sector finance and expertise is required to deliver services to large parts of the rural population. In spite of the challenging operating environment, and a full-house of market barriers, Ethiopia's fast growing economy, large market, and obvious climate risks create a compelling opportunity for the sector.



## VIETNAM

From these consultations, the key barriers facing the market were identified and clearly articulated. Allotrope Partners, in a report prepared for the NREL on the CEIA program strategy, found:

Despite Vietnam's RE goals and some preferential tariffs, RE remains largely uneconomical as tariffs are below cost-recovery levels and uncertainty remains around future government RE incentives. Additional obstacles to private sector investment in RE development include:

- Lack of strong institutional/regulatory frameworks to support RE and to help facilitate the development of a healthy RE industry in Vietnam;
- Lack of a strong supporting mechanism and funds for upfront investment and project preparation in RE in Vietnam;
- Depressed power prices, which currently prevent RE from being more cost-competitive;
- Failure to appropriately account for the environmental impacts of fossil-fuel energy, including the government's plans to continue to deploy significant levels of coal-fired power; and
- Lack of technical capacity around RE development in the country.



Source: IKI MI Country Teams

<sup>19</sup> <https://southsouthnorth.org/growing-mini-grid-investment-in-ethiopia/>



Significant barriers remain for firms buying onsite generation (i.e., net metering capacity cap). Third-party-financed, onsite projects face significant regulatory and project risks:

- Rapidly changing policy environment;
- Tax incentive uncertainty;
- Different contract arrangements for different buyer classes; and
- Cumbersome, complex regulations.

A clear understanding of the key barriers and challenges to increasing investment in NDCs is necessary to formulate effective intervention strategies. In all of the IKI MI countries, a multi-faceted approach was developed and implemented to address identified barriers and to scale investment in NDC goals.



## Step 4: Intervention Strategy and Execution

**Step 4 - Develop an intervention strategy and execute:** Identify and prioritize key interventions/strategies to advance in support of identified NDC goals, building on the engagement and analysis conducted in the preceding steps. These interventions can take a range of forms, including:

### CAPACITY BUILDING



Capacity building through education and outreach activities to key sectors/businesses, trade associations, government ministries and officials, regulators, local financial institutions, etc.



### POLICY CHANGE

Specific policy and regulatory reform measures to address identified gaps and barriers.

### PILOTING



Piloting and business case testing for specific technologies, business models, and sectors.



### FINANCING

Development of specific vehicles or financing tools to address identified capital markets barriers (e.g., loan guarantee facilities).

## Execution and Troubleshooting

Work with key stakeholders and partners to execute the strategy. Ensuring buy-in to the strategy among key stakeholders and execution partners is essential. Successful efforts typically involve multiple streams of work across policy, finance, and regulatory avenues. Address key challenges/roadblocks as they arise. Identify additional areas of technical and financial support needed to address the key barriers and advance the identified strategy. This can include a combination of political and regulatory engagement, private sector engagement, and financial institution engagement.

## KEY LEARNING

Areas of focus for governments and donors that would benefit scaled NDC finance mobilization based on IKI MI country experiences include:

- Provision of budgetary support to implement pilot projects and demonstrate the business cases for low carbon technologies and solutions;
- Working with the public and private sectors to facilitate access to low-cost capital—ideally in local currency—for project and corporate finance;
- Identifying and reducing taxes and tariffs for key low carbon technologies;
- Streamlining permitting and regulatory processes; and
- Conducting education, outreach, and awareness campaigns around key policy and technology opportunities.

## Snapshots from the Ground: Intervention Strategy and Execution in Action



### PHILIPPINES

In line with the country's aggressive conditional NDC commitment to cut emissions by 70% below BAU by 2030 and to increase its RPS to 35% of total consumption by 2030, the IKI MI Philippines team, through the CEIA-Philippines program, identified the key stakeholders and sector challenges (listed below), and proceeded to develop and implement an execution plan:

#### Barriers for on-site generation:

- Net metering capacity caps;
- Rapidly changing policy environments;
- Tax incentive uncertainty;
- Different contract arrangements for different buyer classes; and
- Cumbersome, complex regulations.



Source: IKI MI Country Teams

#### Barriers for off-site generation:

- Uncertainty around details when power wheeling for demands over 100kW will become “live;” and
- Standard wheeling fees/retail supply-rates.

### **Strategy and Execution:**

The IKI MI Philippines team is forging collaboration between private and public sector stakeholders, advancing municipal-level action, and accelerating renewable power generation and distribution:

#### 1. Supporting Utilities:

- a. Helping the private and public sector distribution utilities and electric cooperatives navigate the new RPS mandates through capacity building exercises
  - Partnered with the Philippines Rural Electric Cooperative Association (PHILRECA) to engage with all 121 electric cooperatives in the country, including 1,600 utility executives. Technical tools were shared, such as the CEIA-developed RPS Calculator to help utilities map their targets over the coming years and make energy planning decisions to exceed their RPS mandates

#### 2. Engaging Cities:

- a. Working with city governments to convene local businesses, raise awareness of cost-saving renewable energy procurement options, and accelerate the scaling of renewable energy solutions among commercial and industrial energy users
  - Co-lead a series of public-private dialogues with the City of Santa Rosa and its largest businesses to share viable renewable energy procurement pathways and develop a core group of large energy users to move forward with innovative renewable energy procurement approaches

### **Additional Engagements:**

In support of the above work, the IKI MI / CEIA Philippines team also implemented in the following activities:

- Developed a first-in-kind Clean Energy Procurement Guidebook for the Philippines<sup>20</sup>, which consolidates market insights into a one-stop reference tool to help corporate energy buyers in the Philippines navigate evolving renewable energy purchasing options.
- Conducted the first public consultation (and in subsequent consultations) on the Green Energy Option Program (GEOP) through a webinar with the Philippines Department of Energy and key market stakeholders to encourage effective implementation of the new procurement option that will enable large energy users with demand over 100kW to purchase RE from off-site sources.
- Supported focus groups, public consultations, and direct engagement with government and market participants to communicate the challenges the private sector faces in implementing net metering. These efforts informed new revised rules that are expected to unlock new on-site generation and investment at scale.

---

<sup>20</sup> <https://static1.squarespace.com/static/5b7e51339772aebd21642486/t/5d4b0734bbb4c40001a0b3bf/1565198136423/CEIA+Philippines+RE+Procurement+Guidebook.pdf>





## VIETNAM

An analysis conducted by the IKI MI / CEIA Vietnam team concluded a significant potential for private sector investment in Vietnam's rooftop solar sector. A core set of limiting factors were identified for resolution, including:

- Net metering should be fully implemented with timely and reliable compensation from the state-owned utility;
- Rooftop solar projects should not be limited to 1 MW, which prevents investors from maximizing potential; and
- Increased transparency and a clear power pricing roadmap from the state utility would improve rooftop solar investment and planning.

### Strategy and Execution:

In Vietnam, the execution strategy includes “purchaser” engagement, i.e., companies and corporations that are interested in acquiring rooftop solar or entering into long-term power purchase agreements (PPAs) for solar or wind energy and government engagement around key policy and regulatory changes that are needed to enable corporate procurement of clean energy. For example, the program is:

- Guiding corporate buyers through the clean energy procurement process and facilitating onsite pilot projects to expedite new aggregated procurement models for single buyers across multiple sites, multiple buyers, and industrial parks.
- Continuing to bring corporate voices into the policy process to demonstrate demand for clean energy, convey key barriers, and promote “balanced policies that improve investment.” Support implementation of the direct power purchase agreement (D-PPA) pilot.
- Continue convening key stakeholders through the Clean Energy Investment Accelerator working group that brings together over 50 C&I companies and 140 of their representatives, developers, investors, and government officials to educate on procurement options, business models, lessons learned, and new regulations and policies.
- Create targeted educational and communications tools, including a “Vietnam Corporate Buyers Guidebook” and a market assessment brief.



## DOMINICAN REPUBLIC

The team also developed Terms of Reference for partnership among the NREL and AIRD for working with member companies to build capacity for EE investment implementation; data was collected from several AIRD member companies to assess business cases.

In the final phases of the program, the IKI team seeks to:

- Select several pilot projects to demonstrate the viability to financing institutions;
- Continue to educate financing institutions on selecting and developing financing tools for energy efficiency through webinars, workshops, and project aggregation efforts that include a collective request for proposal (RFP) process; and
- Co-host a conference with the Ministry of Energy that targets policy and regulatory leaders in an effort to develop and pass enabling legislation for EE.



Source: IKI MI Country Teams

## KEY LEARNING

Politics and political engagement matters. While this may sound obvious, successful finance mobilization strategies include analysis of political considerations and take proactive steps to address them. In one IKI MI program, the country team was able to partner with the private sector to engage legislators on reforming a key tariff that was impeding market uptake of a new technology. The market analysis, including the economic development and health benefits of wider distribution of the new technology, was instrumental in helping policy makers understand the public policy objective linked to reforming a specific tax. This public private partnership approach resulted in faster change than either would have been able to achieve independently.

## Summary of Key Learnings and Recommendations

The IKI MI program work illustrates the depth, breadth, and complexity of developing NDC financing strategies across different countries and sectors. **Learnings from the program also highlighted increasing interest and willingness of governments to understand the private sector and work proactively together to address key barriers in order to unlock scaled financing.** Many common opportunities and barriers were identified across program countries, despite their significant diversity. These are discussed below, along with key recommendations that emerge from this work.

While not a guarantee for success, these NDC financing strategies, when executed systematically and in partnership with the right set of stakeholders, can help countries and implementing partners rapidly identify and address the key policy and regulatory challenges that are impeding private finance flows and lay the groundwork for targeted capital markets interventions and mobilization.

The common challenges encountered across the IKI MI implementing teams indicate that there are barriers that are best addressed by governments, and that while all country circumstances are unique, common approaches to addressing those challenges can work (e.g., tax and tariff reform for specific low carbon technologies).



## THE OPPORTUNITIES

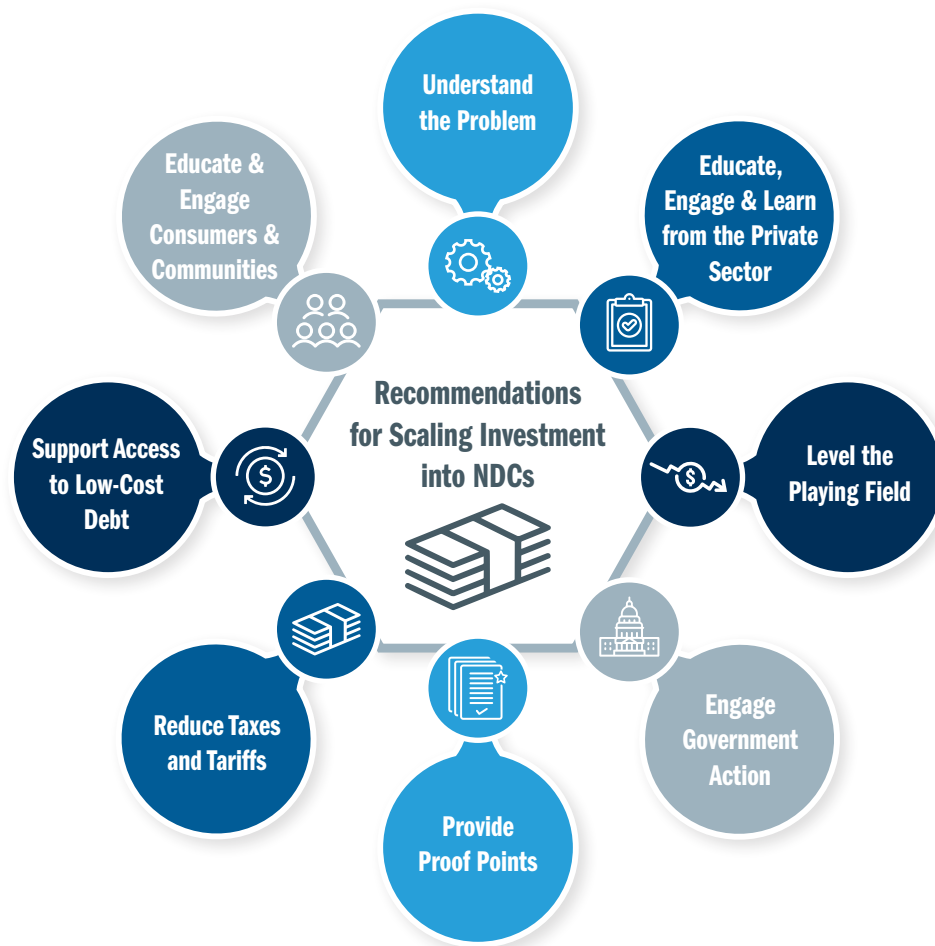
- **Strengthened political resolve:** Implementation of NDCs has brought enhanced focus and expanded opportunities for systemic changes within both the public and private sectors.
- **Many pathways to success:** There are a range of approaches to mobilizing financing for NDCs that can be successful, including both “bottom-up” and “top-down” strategies. Often only one or two conditions in a given market need to be changed to enable scaling of a particular intervention, e.g., reduction or removal of a tax, building momentum through public education and awareness campaigns, or a targeted regulatory change that addresses a key barrier.
- **Enhanced private sector interest:** The private sector is eager to engage and to contribute to NDC financing and implementation efforts in many sectors (e.g., large-scale renewable energy infrastructure). In other sectors, such as adaptation in developing countries, more work needs to be done to develop business models and investment cases that are investable. Engagement with the private sector must be structured in a way that accommodates the constraints the private sector operates under, i.e., specific business and investment opportunities must fit within individual risk/return profile and requirements.
- **Policy and regulation matters:** Targeted policy and regulatory changes can have a significant impact. Taxes and tariffs (e.g., import taxes and value added taxes) were frequently cited as a barrier to clean technology uptake in a given market. Because many of these technologies are relatively new and the markets are evolving rapidly, the regulatory system has not always kept up with technology innovation.



## THE BARRIERS

Several common barriers to mobilizing private finance into NDC priorities were identified across IKI MI implementation teams and countries. These include:

- **Prevailing capital market conditions:** Challenging prevailing capital market conditions negatively affect the availability and cost of private capital (e.g., general ease of doing business metrics, currency fluctuation, and restrictions on direct foreign investment).
- **Taxes and tariffs:** Unfavorable tax and tariff treatment make low carbon alternatives uncompetitive on a cost basis with fossil fuel-based alternatives.
- **Financing institution education:** Lack of understanding and expertise among local and international financial institutions on low carbon technologies and risk appetite for untested business models.
- **Private and public sector capacity building:** Lack of understanding and expertise among potential private sector partners (e.g., commercial and industrial companies) regarding technology, business, and financing options for low carbon businesses and technologies—particularly those companies and technologies are newer. Public sector capacity building helps to streamline licensing processes and builds understanding among government technocrats about private sector business and funding models.
- **Proof points:** Lack of access to market and performance data to inform business cases for new technologies or businesses. Lack of funding to finance pilot and demonstration projects to increase visibility and comfort with new low carbon technology alternatives.
- **Vested interests:** Private sector players with a vested interest in maintaining the status quo may have leverage into government and use this to maintain the current state (e.g., to continue importing bioethanol into Kenya rather than allowing local production).












## Recommendations for Scaling Private Investment Into NDCs

- **Understand the problem:** Develop targeted sector, technology, and/or business model-specific policies and interventions based on analysis and stakeholder engagement that will serve as building blocks toward meeting a select NDC commitment. Identify policies, interventions, and stakeholders that will hamper progress toward meeting the NDC.
- **Educate, engage, and learn from the private sector:** Engagement, education, and training of key private sector actors can quickly scale and amplify messages and strategies. The private sector has a wealth of information regarding key policy, regulatory and capital market barriers for a given sector, business, or technology. When aligned with NDC implementation priorities, the private sector can be a powerful advocate for change; when misaligned, they can seriously impede or stop progress.
- **Level the playing field:** In order to see scaled investment in a climate-aligned technology or solution, it needs to be commercially attractive in comparison to the carbon-intensive alternatives. Interventions should drive the cost of a low carbon good or service below the cost of the incumbent fossil fuel based technology or alternative.
- **Engage government action:** Government leadership and engagement in NDC implementation is central to scaling private investment and mobilizing finance. This includes provision of clear and fair regulatory and policy frameworks and thoughtful policy and finance interventions that enable low carbon businesses and technologies to advance in a given market.








- **Provide proof points:** New business models and technologies face a wide range of barriers to implementation and scale. Governments and donors can play a key role in addressing those through well-executed pilot projects and demonstration projects designed with a private sector lens. Rigorous analysis, monitoring, and evaluation of lessons learned on the viability of the business model can help inform more targeted public policy and financing interventions for that specific sector.
- **Reduce taxes and tariffs:** Unfavorable tax and tariff treatment can make low carbon alternatives uncompetitive on a cost basis with fossil fuel-based alternatives in many countries.
- **Support access to low-cost debt:** The high cost of capital, particularly local debt capital, was identified as a significant barrier. While the economics for many low carbon technologies are improving, high financing costs still serve as a significant barrier to deploying at scale.
- **Educate and engage consumers and communities:** The success or failure of many new technologies will depend on consumer preferences and uptake. Innovative campaigns can play an important role in supporting the transition to cleaner alternatives and can bolster early stage business models and unfamiliar technologies and practices.

## Annex 1: IKI MI Program Background, Resources and Documentation

Country	Sector	Overview	Resources and Publications
<b>Bangladesh</b> 	Energy / Transport  	<b>Off-grid solar / Mini-grid, Solar Pumps and Solar Boats</b> Develop bankable business models and investment cases for solar mini-grids, solar irrigation pumps (SIPs), and solar boats, as well as the development of a geospatial mapping tool for prioritizing sites for the rollout of SIPs	<ul style="list-style-type: none"> <li>● <a href="#">Overview</a></li> <li>● <a href="#">Scoping study</a></li> <li>● <a href="#">Sector summaries</a></li> <li>● Business model briefs               <ul style="list-style-type: none"> <li>- <a href="#">Solar mini-grids</a></li> <li>- <a href="#">Solar irrigation pumps</a></li> <li>- <a href="#">Solar boat technologies</a></li> </ul> </li> <li>● Investment cases               <ul style="list-style-type: none"> <li>- <a href="#">Solar mini-grids</a></li> <li>- <a href="#">Solar irrigation pumps</a></li> </ul> </li> <li>● <a href="#">Roadmap for decision-makers</a></li> <li>● Solar irrigation pump site prioritization study</li> <li>● Solar irrigation pump site prioritization tool</li> <li>● Bangladesh solar irrigation potential policy brief</li> </ul>
<b>Dominican Republic</b> 	Energy 	<b>Energy Efficiency and Renewable Energy</b> Focus on energy efficiency in the commercial and industrial sector through capacity building efforts, net metering scoping work with interested partners, and establishing partnerships with the National Association of Industrials (AIRD)	Overview forthcoming <i>(please refer to the SSN website for updates)</i>
<b>Ethiopia</b> 	Energy 	<b>Off-grid / Mini-grids</b> Support the development of the mini-grid sector by building capacity among government stakeholders and exploring productive use opportunities in agriculture sector	<ul style="list-style-type: none"> <li>● <a href="#">Overview</a></li> <li>● Scoping study</li> <li>● Baseline study outlining stakeholders, policy, regulations, financial barriers, and levers</li> <li>● Research into productive uses</li> <li>● Financial model and training for use by public sector stakeholders</li> <li>● Validation of 50 sites for Ministry of Water, Irrigation and Energy's (MoWIE) EPC program</li> <li>● Investment cases on 10 productive use sites</li> <li>● Pre-feasibility studies on 10 productive use sites</li> <li>● Homer software licenses and training purchased for MoWIE</li> </ul>
<b>Kenya</b> 	Energy 	<b>Cooking Fuel Replacement</b> Promote bioethanol for cooking by displacing kerosene and charcoal using technology and business model innovation	<ul style="list-style-type: none"> <li>● <a href="#">Overview</a></li> <li>● <a href="#">Triple bottom-line study</a></li> <li>● Awareness campaign - <a href="#">CHUJA Anthem</a> (social media campaign)</li> <li>● <a href="#">News: Proposed interventions could make bio-ethanol cooking fuel widely available in Kenya</a></li> <li>● Bioethanol masterplan for Kenya</li> </ul>








Source: LEDS GP Finance Working Group / Electric Capital Management, 2020

**Annex 1: IKI MI Program Background, Resources and Documentation** CONTINUED

Country	Sector	Overview	Resources and Publications
<p><b>Peru</b></p> 	<p>Waste / Energy</p>  	<p><b>Waste Management and Waste-to-Energy</b> Develop business models and investment cases for landfill gas capture, leachate management, and waste-to-energy</p>	<ul style="list-style-type: none"> <li>● <a href="#">Overview</a></li> <li>● <a href="#">The Valorization of Solid Waste at the Municipal Level</a> (Blog)</li> <li>● <a href="#">Institutional Mapping</a> (Spanish)</li> <li>● Concept Notes <ul style="list-style-type: none"> <li>- <a href="#">Trujillo</a></li> <li>- <a href="#">San Juan Bautista</a></li> </ul> </li> <li>● <a href="#">Technical results and presentations</a> (Spanish)</li> <li>● <a href="#">Peru Workshop</a> (Spanish)</li> <li>● <a href="#">Resource Guide: Learnings from Peru</a></li> <li>● Investment Cases <ul style="list-style-type: none"> <li>- Trujillo</li> <li>- San Juan Bautista</li> </ul> </li> <li>● Implementation Roadmap</li> </ul>
<p><b>Philippines</b></p> 	<p>Energy</p> 	<p><b>Renewable Energy</b> CEIA - Philippines is building capacity of private distribution utilities to implement renewable energy targets while also supporting key municipalities to mobilize private sector clean energy investments in high-growth regions of the country</p>	<ul style="list-style-type: none"> <li>● <a href="#">Clean Energy Investment Accelerator</a></li> <li>● <a href="#">CEIA - Philippines program</a></li> <li>● <a href="#">Philippines Renewable Portfolio Standard Planning Calculator</a></li> <li>● <a href="#">Webinar: Philippines at the RE Crossroads</a></li> <li>● <a href="#">Hot Topic Brief: Emerging Policies for Mobilizing Private Sector Investment into Clean Energy in the Philippines</a></li> <li>● <a href="#">Tool: Request for Proposal (RFP) and Proposal Evaluation Templates for Portfolios of Commercial &amp; Industrial Solar Projects</a></li> </ul>
<p><b>Vietnam</b></p> 	<p>Energy</p> 	<p><b>Renewable Energy</b> CEIA - Vietnam convenes business and government stakeholders to overcome market barriers, prove aggregated RE procurement models, and scale renewable deployment</p>	<ul style="list-style-type: none"> <li>● <a href="#">Clean Energy Investment Accelerator</a></li> <li>● <a href="#">CEIA - Vietnam program</a></li> <li>● <a href="#">Tool: Request for Proposal (RFP) and Proposal Evaluation Templates for Portfolios of Commercial &amp; Industrial Solar Projects</a></li> <li>● <a href="#">Webinar: The Clean Energy Investment Accelerator's Update on Corporate Renewable Energy in Vietnam</a></li> <li>● <a href="#">Article: What's stopping corporates from switching to clean energy in Vietnam?</a></li> <li>● <a href="#">Tool: Key Questions When Considering On-Site Solar PV: An Introductory Guide for Commercial &amp; Industrial Facilities in Vietnam</a></li> </ul>

Source: LEDS GP Finance Working Group / Electric Capital Management, 2020

## Annex 2: IKI MI Countries - NDC Commitments

Country	NDC Commitment	
 <b>Bangladesh</b>	<b>5% reduction</b> in GHG emissions from BAU levels by 2030 (unconditional)	<b>15% reduction</b> in GHG emissions from BAU levels by 2030 (conditional)
 <b>Dominican Republic</b>	<b>25% reduction</b> in GHG emissions from BAU levels by 2030 (conditional)	
 <b>Ethiopia</b>	<b>64% reduction</b> in GHG emissions from BAU levels by 2030 (conditional)	
 <b>Kenya</b>	<b>30% reduction</b> in GHG emissions from BAU levels by 2030 (conditional)	
 <b>Peru</b>	<b>20% reduction</b> in GHG emissions from BAU levels by 2030 (unconditional)	<b>Above-mentioned up to 30%</b> with international support (conditional)
 <b>Philippines</b>	<b>70% reduction</b> in GHG emissions from BAU levels by 2030 (conditional)	<i>Philippines Climate Change Commission is in the process of revising its NDC</i>
 <b>Vietnam</b>	<b>8% reduction</b> in GHG emissions from BAU levels by 2030 (unconditional)	<b>Above-mentioned up to 25%</b> with international support (conditional)

Source: [UNFCCC NDC Registry](https://unfccc.int/ndcregistry/)



Stakeholder forum held in Kenya.

Source: IKI MI Country Teams



# References

- 3 *Ease of doing business index*. (2019). World Bank Open Data | Data. [https://data.worldbank.org/indicator/IC.BUS.EASE.XQ?most\\_recent\\_value\\_desc=false&view=map](https://data.worldbank.org/indicator/IC.BUS.EASE.XQ?most_recent_value_desc=false&view=map)
  - 4 *Mobilising investment for NDC implementation*. (n.d.). SouthSouthNorth | Towards climate resilience. [https://southsouthnorth.org/portfolio\\_page/mobilising-investment-for-ndc-implementation/](https://southsouthnorth.org/portfolio_page/mobilising-investment-for-ndc-implementation/)
  - 5,7,17 *Final Report - Scoping study - Bangladesh* (1 September 2017). <https://cdkn.org/wp-content/uploads/2019/09/MI-Bangladesh-Scoping-Study.pdf>
  - 6 *Concept Note San Juan Bautista Perú*. (October 2018). <https://cdkn.org/wp-content/uploads/2019/09/Concept-Note-SJB.pdf>
  - 8 *Intended Nationally Determined Contribution of Viet Nam* (n.d.). UNFCCC <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Viet%20Nam%20First/VIETNAM'S%20INDC.pdf>
  - 10 *Rankings*. (May 2019). World Bank. <https://www.doingbusiness.org/en/rankings>
  - 12 *Scaling up clean cooking in Kenya with LPG & Bio-ethanol* (June 2018). <https://southsouthnorth.org/wp-content/uploads/2018/11/Scaling-up-clean-cooking-in-urban-Kenya-with-LPG-and-Bio-ethanol.pdf>
  - 13 *Bottom of the pyramid (Bop) definition from financial times lexicon*. (n.d.). Wayback Machine. [https://web.archive.org/web/20170505144805/lexicon.ft.com/Term?term=bottom-of-the-pyramid-\(BOP\)](https://web.archive.org/web/20170505144805/lexicon.ft.com/Term?term=bottom-of-the-pyramid-(BOP))
  - 15 *CHUJA ANTHEM* (May 2019). <https://www.youtube.com/watch?v=05adyqTUSd8>
  - 16, 18 *Sector Summaries* (23 April 2019). <https://cdkn.org/wp-content/uploads/2019/09/IKI-Bdesh-NDC-sector-summaries.pdf>
  - 19 *Growing mini-grid investment in Ethiopia*. (5 August 2019). SouthSouthNorth | Towards climate resilience. <https://southsouthnorth.org/growing-mini-grid-investment-in-ethiopia/>
  - 20 *Clean Energy Procurement Guidebook for the Philippines* (July 2019). Clean Energy Investment Accelerator <https://static1.squarespace.com/static/5b7e51339772aebd21642486/t/5d4b0734bbb4c40001a0b3bf/1565198136423/>
- Home*. (n.d.). <https://www4.unfccc.int/sites/ndcstaging/Pages/Home.aspx>

Supported by:



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety

based on a decision of the German Bundestag

**SOUTH  
SOUTH  
NORTH**  
TOWARDS CLIMATE RESILIENCE



Climate & Development  
Knowledge Network

