

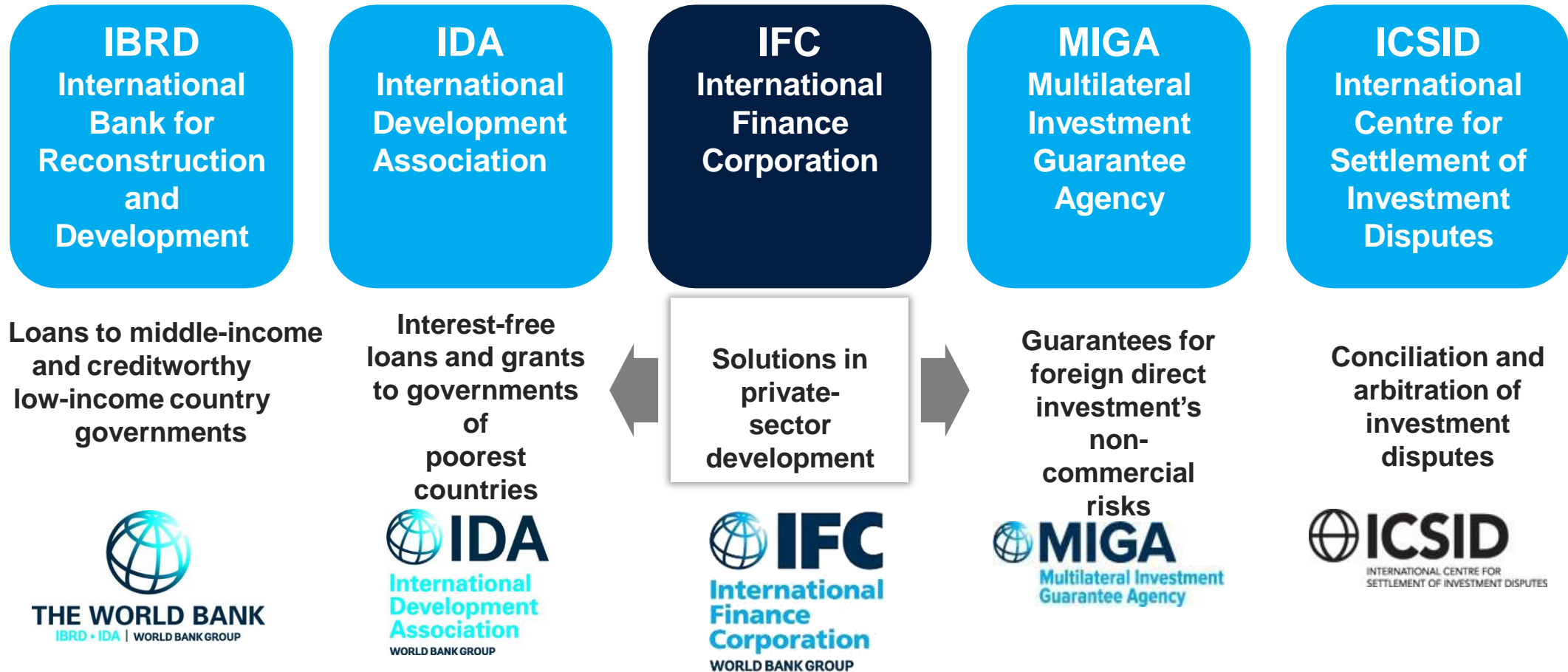


SUPPORTING DECARBONIZATION AND WASTE HEAT RECOVERY IN THE INDUSTRY

JUNE 2022

INTERNATIONAL FINANCE CORPORATION

A MEMBER OF THE WORLD BANK GROUP

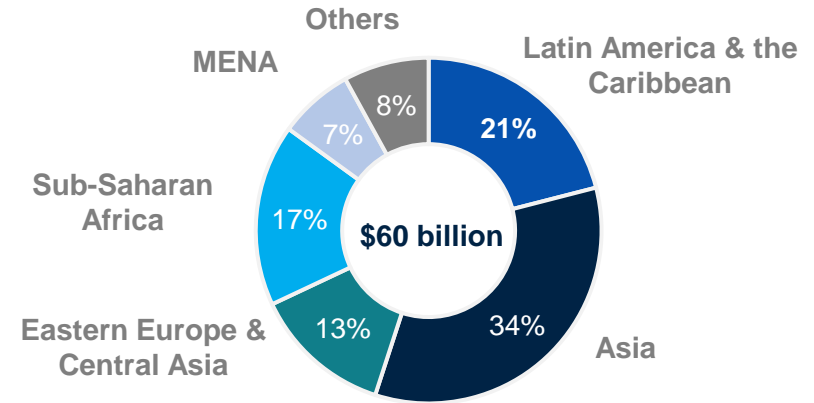


IFC IS THE PRIVATE SECTOR ARM OF THE WORLD BANK GROUP

The largest global development institution focused exclusively on the private sector in developing countries

Active Portfolio as of FY20	\$60 bn
FY20 Commitments	\$22.0 bn
- Syndicated	\$10.8 bn
- Own Account	\$11.2 bn
Number of projects	280
Investments in IDA/FCS Countries	\$2.8 bn
Investments in Climate	\$3.2 bn
Investment horizon	up to 10-12 years, both equity and debt

Active Portfolio as of FY20: \$60bn



Mobilizing the Private Sector and Creating Markets

- Engage in **difficult environments** and **mobilize private finance** enabling a **development impact** beyond its direct resources.
- Sustainability:** IFC is an investor focused on development impact and climate change. Promoter of environmental, social, and corporate governance standards.
- Create, deepen, and expand markets** where they are weak or do not currently exist
- Maximize the financing** available in areas with the most needs



More than \$321 billion invested since our founding in 1956



Leveraging the full range of World Bank Group capabilities



AAA credit rating; owned by 185 countries



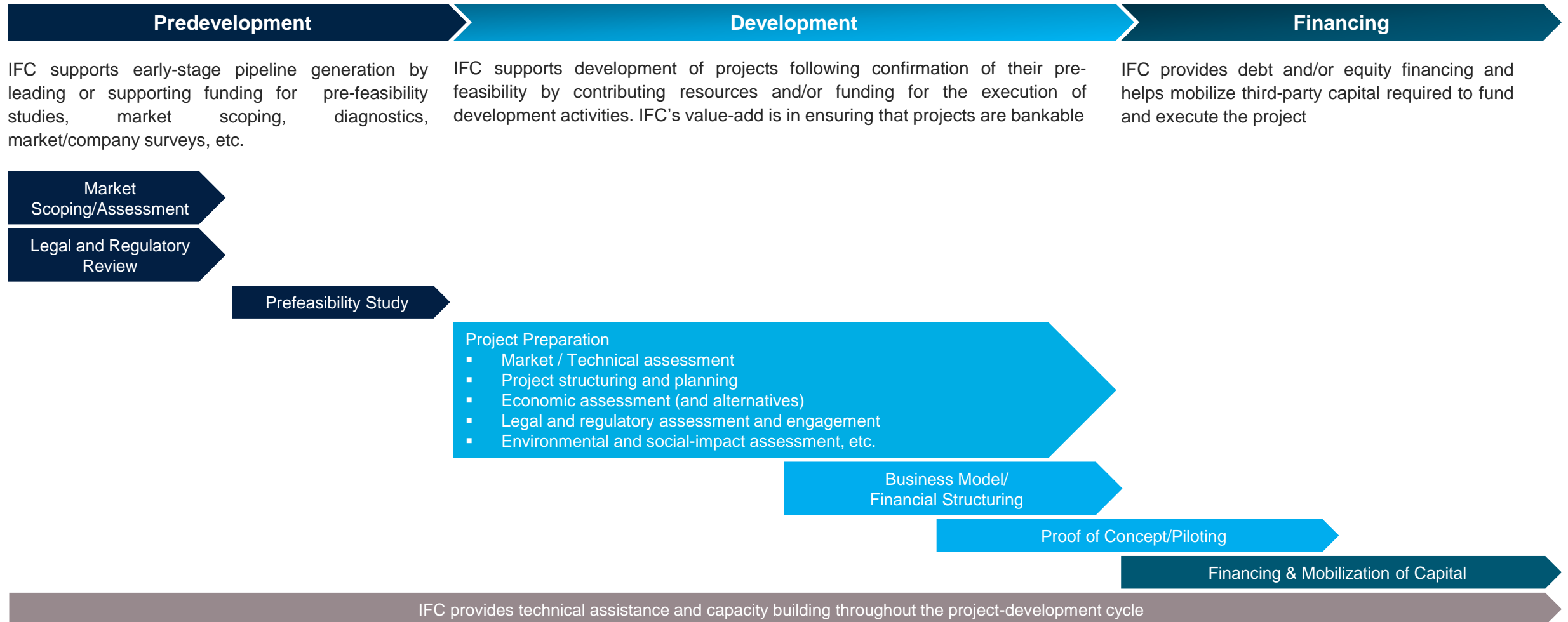
Provides investment, advice, resource mobilization



Present in nearly 100 countries

IFC UPSTREAM'S EARLY-STAGE PROJECT DEVELOPMENT

IFC can support project development activities for projects advancing circular economy and transitioning to decarbonization



CLIMATE CHANGE AND THE WORLD BANK GROUP

Climate Change - a fundamental threat to the objectives of WBG of alleviating poverty & boosting shared prosperity

- The WBG aims to **invest and mobilize \$200 billion in climate-related financing over 2021-2025**. Per the newly released Climate Change Action Plan, the WBG is committed to aligning its financing flows with the objectives of the Paris Agreement
- The private sector is the key engine of sustainable development and will be the key driver for low carbon transition
- Since FY05, IFC has provided \$24+ billion in long-term financing for climate-related projects and nearly \$19 billion in core mobilization.

Strategic Imperatives		
	2020	2030
Own-Account Commitments	\$11.1B	\$25.0B
Climate Change Action Plan (April 2021)	<ul style="list-style-type: none"> ▪ 85% of IFC new operations will be Paris aligned by July 1, 2023 ▪ At least 35% of WBG's financing to have climate co-benefits over the next 5 years. In manufacturing, IFC will support proven abatement measures and innovative new technologies. 	

IFC'S DECARBONIZATION OFFERING

IFC can help carbon-intensive manufacturing companies to develop long-term decarbonization roadmaps compliant with sustainable finance principles and achieve their GHG reduction ambitions

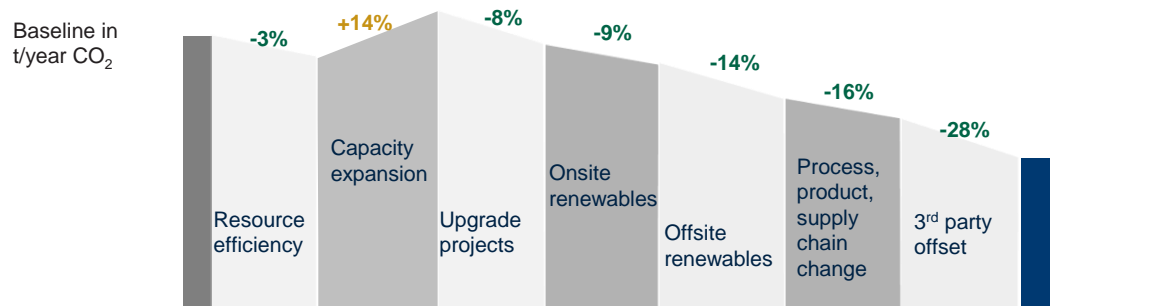
What support can IFC provide?

- Facilitate **Carbon footprint assessment** (Scopes 1, 2 and where feasible 3)
- Facilitate **GHG reduction target setting: SBTi (or equivalent)**
- Identify **options for decarbonization** (via energy and resource efficiency, renewable energy, carbon credits)
- Develop **decarbonization roadmap**
- Facilitate setting **internal carbon pricing**
- Design financing plan** ensuring eligibility to sustainable finance
- Provide **sustainable finance products: green loans, sustainability linked loans**
- Work with local Governments** to remove barriers and adopt supportive policies


IFC is ideally positioned to support your company in decarbonization via:

- A strong in-house industry expertise in resource efficiency and renewables
- A vast network of external partners and niche experts
- Independence from equipment manufacturers and technology providers
- A proven track record of advisory clients in all regions
- Ability to provide green, sustainability-linked and transition finance

Example: 5-year GHG emissions cumulative reduction pathway



Case study: Decarbonization roadmap in the Chemicals industry

Sector:	Chemicals – Plastics	Asia
Project size:	US\$100+ million or investment potential identified	
Background & Objective		
<ul style="list-style-type: none"> The client is a manufacturer of plastic resins and various chemical products in Asia The client sought IFC expertise in developing its energy related GHG emissions reduction pathways 		
Approach (under a Joint Development Agreement)		
<ul style="list-style-type: none"> On Existing plant <ul style="list-style-type: none"> Resource efficiency assessment, Carbon footprint assessment and GHG emissions reduction pathways, Decarbonization of 1.6-1.8 bln. greenfield investment: assess the carbon and water footprint in parallel, as well as identify offsetting opportunities for the greenfield plant. 		
Value-add		
<ul style="list-style-type: none"> IFC's engagement resulted in US\$100+ million or investment potential identified, including: <ul style="list-style-type: none"> Efficiency/ Modernization/ upgrade projects Resource efficiency measures On-site PV Off-site PV and wind Process, product and distribution changes With a CO₂ reduction potential of up to 189,000 t/year of CO₂ equivalent 		

SOME IFC WASTE HEAT PROJECT EXAMPLES: SANKO (CIMKO) AND SISECAM

Sisecam

As a part of efficiency investments program, Sisecam installed ORC (Organic Rankine Cycle) waste heat recovery systems with IFC financing:

- Bulgaria, Flat Glass, 3.3 MW capacity ORC (includes Flue Gas Treatment), CAPEX: \$17.5 Million, GHG avoided 21.5kton/year
- Mersin, Flat Glass, 4.1 MW capacity ORC, CAPEX: \$11.5 Million, GHG avoided 16kton/year



Sanko (Cimko)

IFC financing of \$40 million own account +\$25 million mobilization for efficiency projects including a WHR unit

Cimko installed a 7MW ORC (Organic Rankine Cycle) Plant, with CAPEX around 1500 US\$/kW.

IFC has been trying to raise overall awareness of ORC technology in Turkiye since 2015. Main decision criteria for selecting ORC is:

- Up to 10% more electricity generation
- cost per kW is lower
- air cooling system with no water consumption
- less personnel need

IFC REPORT - WASTE HEAT RECOVERY IN TURKISH CEMENT INDUSTRY (2018)

Review of Existing Installations and Remaining Potential

Findings Summary in a Nutshell

Existing WHR plants achieved large savings, yet still have a potential for capacity utilization increase

Annual savings of the electricity bill

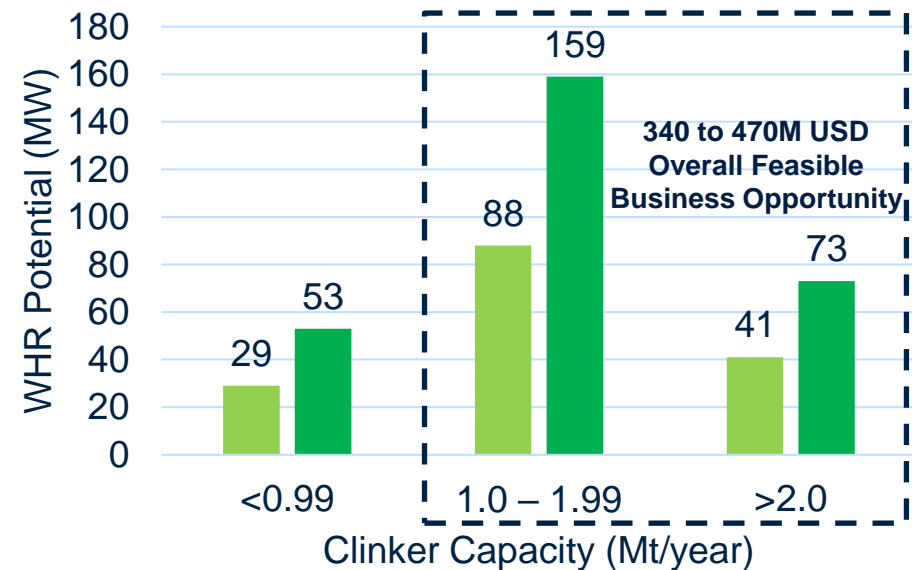
up to 31%

- Actual project **IRRs** range from **6 to 27 %** for surveyed plants having WHR
- For the surveyed plants that don't have WHR and are all low to medium capacity, ORC technology could accommodate lower inlet temperatures with **IRRs up to 25%**
- WHR Feasibility usually improves as the capacity increases, when the un-surveyed plants are considered

Estimated cost of WHR electricity

below \$45 per MWh

Remaining overall potential for WHR in Turkey



- WHR potential @ 25 kWh/t clinker (MW)
- WHR potential @ 45 kWh/t clinker (MW)



ANNEX

IFC PRODUCTS AND SERVICES

Integrated Solutions, Increased Impact

A WIDE RANGE OF PRODUCTS AND SERVICES

Upstream/IFC 3.0

IFC is committing time and resources to create, and implement investment projects through, deepen, and expand markets and imagine, design:

- **Global-Delivery Platforms**, including design and development of scalable products and/or solutions applicable to multiple projects in a sector
- **Sector-Wide Initiatives** such as country-specific interventions to unlock markets in a sector
- **Early-Stage Project Development**, covering project-specific engagements with potential sponsors and co-investors

- **250 people employed globally in Upstream**

Investment

Loans

- Project and corporate financing
- On-lending through intermediary institutions

Equity

- Direct equity investments
- Private equity funds

Trade and Commodity Finance

- Guarantee of trade-related payment obligations of approved financial institutions

Derivative and Structured Finance

- Derivative products to hedge interest rate, currency, or commodity-price exposures of IFC clients

Blended Finance

- Using donor funds to crowd in private financing

- **\$21.9 billion committed in FY20**
- **\$58.7 billion committed portfolio**

Advisory

Innovative solutions combining IFC's expertise and tools to:

- Strengthen clients' performance and impact
- Reduce operational risks
- Enhance sustainability and competitiveness
- Improve environmental, social, and corporate governance standards

- **\$274.4 million program in FY20**

Mobilization

Syndications

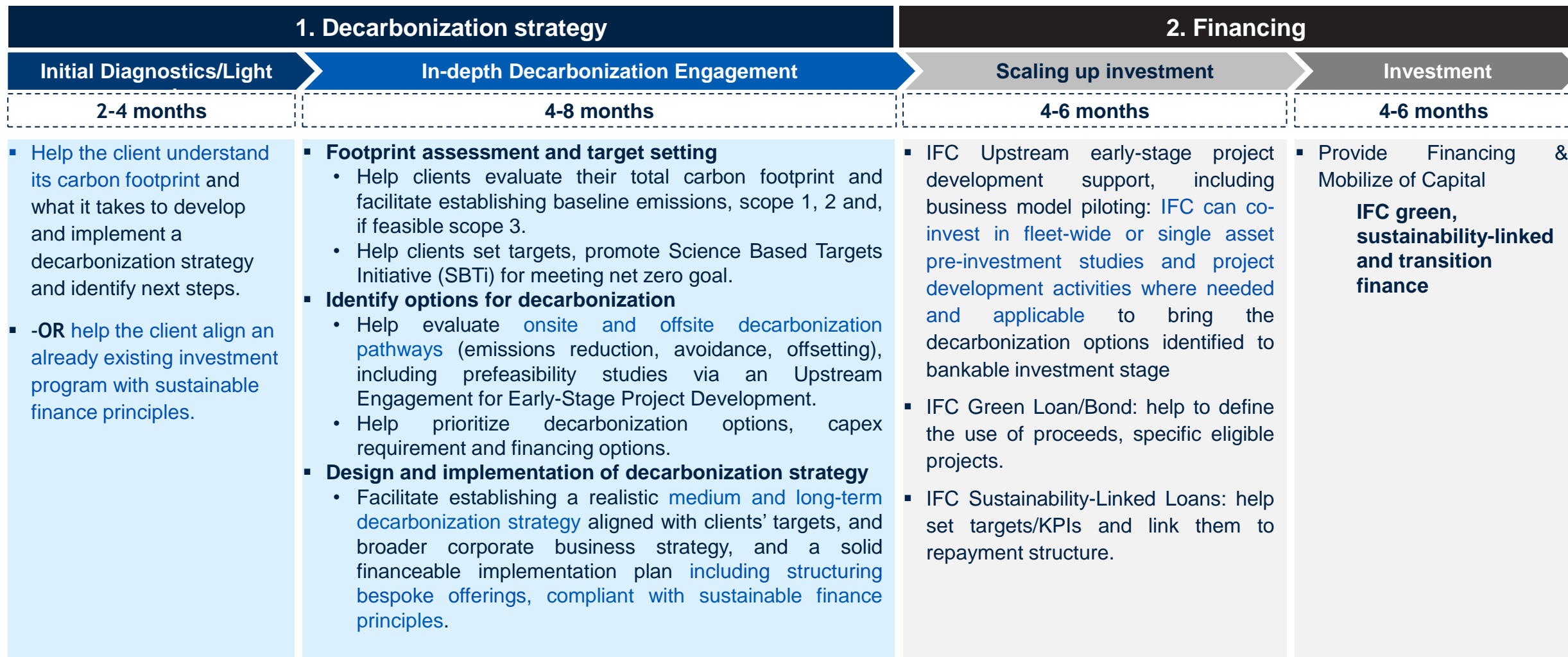
- Capital mobilization to serve developmental needs
- Over 80 co-financiers: banks, funds, DFIs

Equity mobilization

- **\$28 billion syndicated in last five years**

IFC'S DECARBONIZATION OFFERING

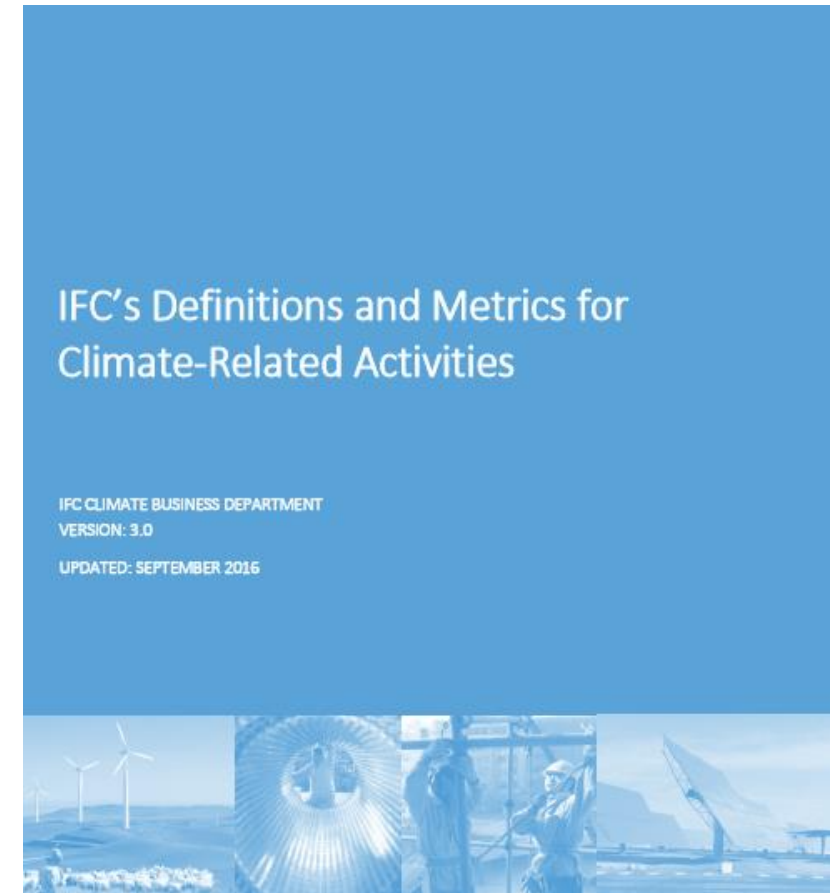
IFC offers technical assistance and investments services according to the client's level of maturity and readiness for investment



WHAT IS AN IFC GREEN LOAN?

IFC Green Loans are a new product feature where IFC's Loan exclusively finances "Eligible Green Projects" structured in line with the Green Loans Principles (GLP).

- **Eligible Green Projects:** projects that are included in the Green Loan Principles – meaning those that are Climate - related (Mitigation or Adaptation) as per IFC's Climate Definitions Plus biodiversity & pollution abatement
- **Green Loan Principles:** modelled on Green Bond Principles with four core components:
 1. Use of Proceeds destined exclusively for Eligible Green Projects
 2. Process for Project Evaluation and Selection
 3. Management of Proceeds to ensure they are allocated to Eligible Green Projects
 4. Reporting on use of proceeds and expected impact of Eligible Green Projects



SNAPSHOT - SUSTAINABILITY-LINKED LOANS (SLL)

IFC Green Loans are a new product feature where IFC's Loan exclusively finances "Eligible Green Projects" structured in line with the Green Loans Principles (GLP).

KEY FEATURES

- Follows the **Sustainability Loan Principles**
- General purpose loan **linked to defined sustainability targets** during tenor of IFC loan
- NOT based on use of proceeds
- IFC Performance Standards apply at a corporate level
- Borrower reports annually on progress using agreed KPIs or external ratings approved by IFC.
- Structure **may include incentives or penalties**

BEST FOR

- Companies with ambitious SDG targets looking for more flexibility in use of proceeds.
- Companies with ambitious SDG targets – eg. gender inclusion, pollution, health - and seeking recognition

EXAMPLE OF MAS PROJECT

Puratos

- EUR100m to finance: (i) procurement of cacao beans from farmers under Puratos' Cacao-Trace program; (ii) establishment of post-harvest centers and grinding lines, (iii) investments to expand Cacao-Trace program.
 - **Puratos aims to triple its volume of sustainable cocoa purchased under its Cacao-Trace program by 2025**
 - **Payment of bonus to cocoa farmers** for every kilo of chocolate sold under Cacao-Trace program.

SUSTAINABILITY-LINKED LOANS