



# Climate Finance - an Introduction (1/2): Climate Finance Instruments and Sources



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## **The Paris Agreement and the Need to Define Climate Finance**

### **Climate Finance - Sources and Instruments**

### **Climate Finance at Multilateral Development Banks**

### **Climate Finance at ADB**



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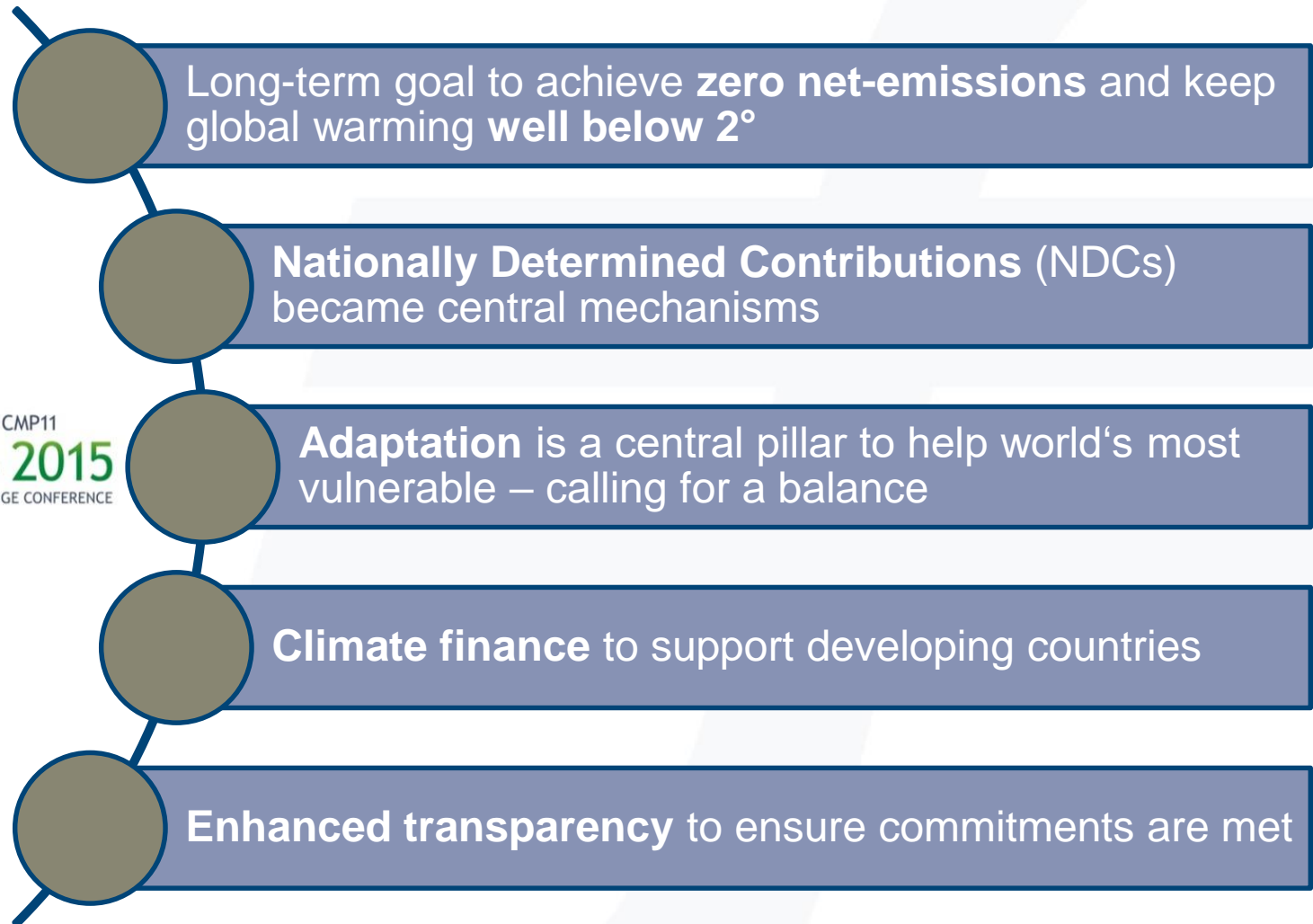
# The Paris Agreement, COP21 (2015): Five Key Elements



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COP21 • CMP11  
**PARIS 2015**  
UN CLIMATE CHANGE CONFERENCE





Paris Agreement, Article 13: requires “...*enhanced transparency framework for action and support*...”.

- The joint commitment of developed countries (USD 100 billion per year from 2020 for climate action in developing countries) requires **full transparency** in the way the resources are used for climate mitigation and adaptation activities and requires a **common definition** and **approach for measuring the flow of climate finance**.
- It is **increasingly important to track and report climate finance**, to
  - Build trust and accountability with regard to climate finance commitments and monitor trends and progress in climate-related investment,
  - Facilitate the assessment of results from climate investments, and
  - Facilitate the mobilization of resources from capital markets.



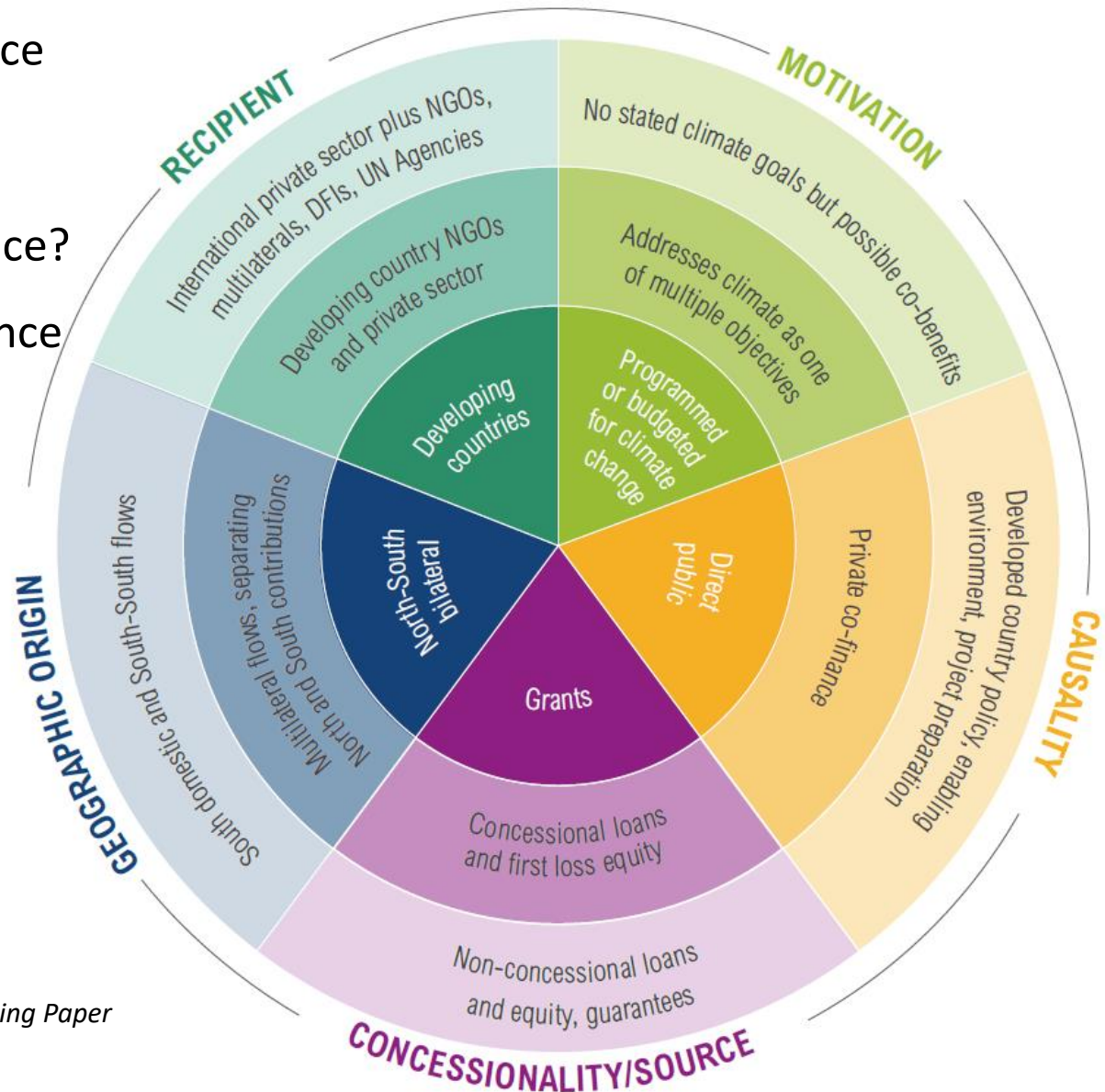
- There are attempts to estimate the amount of climate finance, but **available data base is challenging** – there is no systematic tracking standard; e.g. some count on commitment and some on disbursement base, institutional structure is complex
- Currently, there is **no standard definition of climate finance** – but discussions about a common definition and measurement approaches are ongoing.

# Climate Finance: What Counts?



A definition of climate finance needs to consider; e.g.:

- What type of funding constitutes climate finance?
- How should climate finance be delivered?
- New/additional to ODA?



Source: WRI, 2016, Working Paper



“Climate finance aims at reducing emissions and enhancing sinks of GHG and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts.”

\*OECD, 2014

“Climate finance refers to local, national or transnational financing, which may be drawn from public, private and alternative sources of financing.”

UNFCCC, 2014

(\*applying definitions and eligibility criteria for mitigation and adaptation of IPCC)

 OECD, 2015, *Climate Finance in 2013-14 and the USD 100 billion Goal*





The Paris Agreement and the Need to Define Climate Finance

**Climate Finance - Sources and Instruments**

Climate Finance at Multilateral Development Banks

Climate Finance at ADB

# Financial Sources and Flow



## GLOBAL LANDSCAPE OF CLIMATE FINANCE 2015

Landscape of Climate Finance 2015 illustrates climate finance flows along their life cycle for the latest year available, mostly 2014, in USD billions

**USD 391** <sup>BN</sup> TOTAL



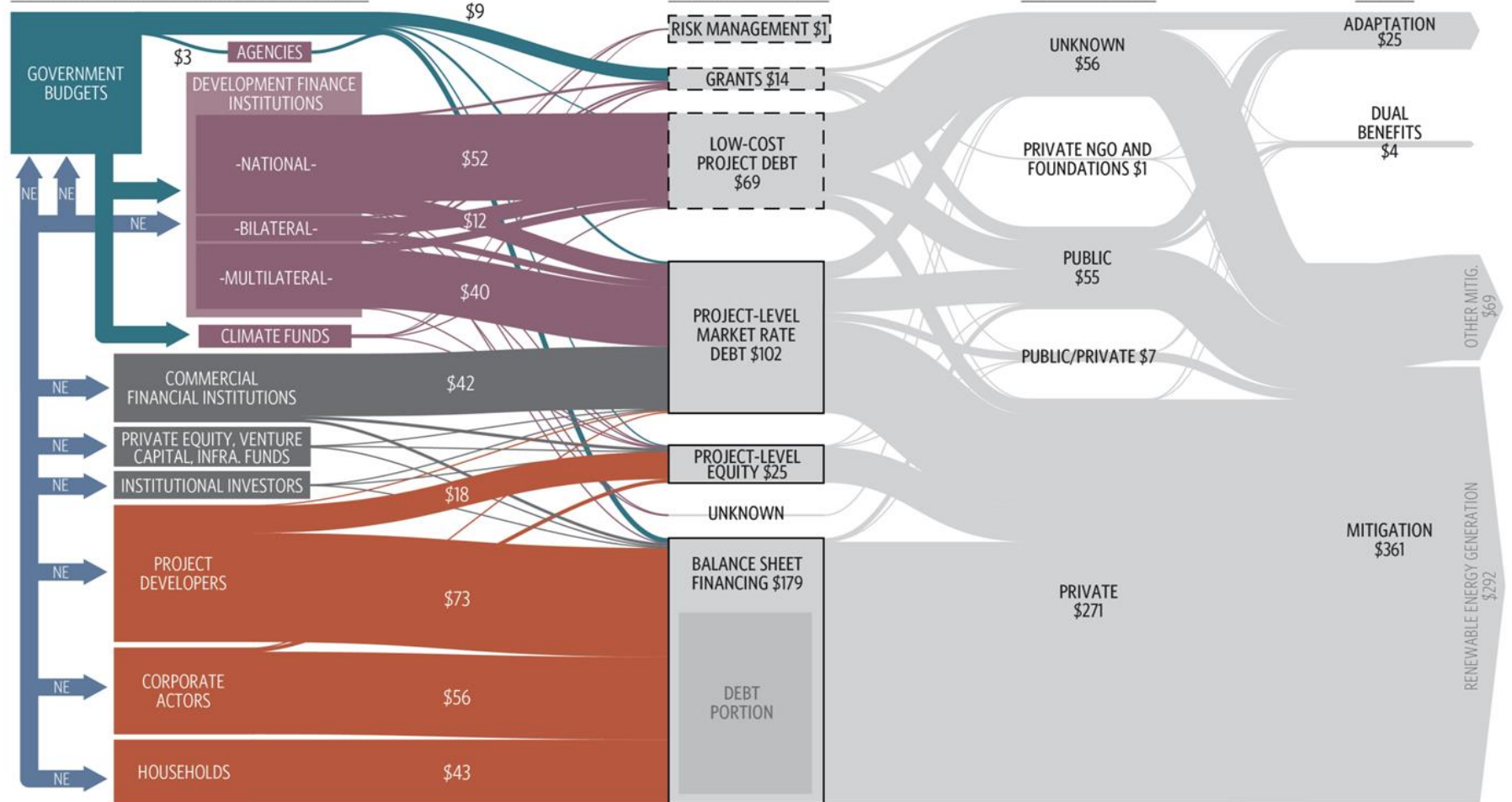
CLIMATE POLICY INITIATIVE

### SOURCES AND INTERMEDIARIES

### INSTRUMENTS

### RECIPIENTS

### USES



#### KEY

PUBLIC MONEY

PRIVATE MONEY

PUBLIC FINANCIAL INTERMEDIARIES

PRIVATE FINANCIAL INTERMEDIARIES

CAPITAL INVESTMENT

CAPITAL INVESTMENT AND INCREMENTAL COSTS

FINANCE FOR INVESTORS & LENDERS

NE: NOT ESTIMATED

# Sources of publ. Climate Finance



## A Highly Fragmented Climate Finance Architecture (with a focus on fund structures)

### LEGEND

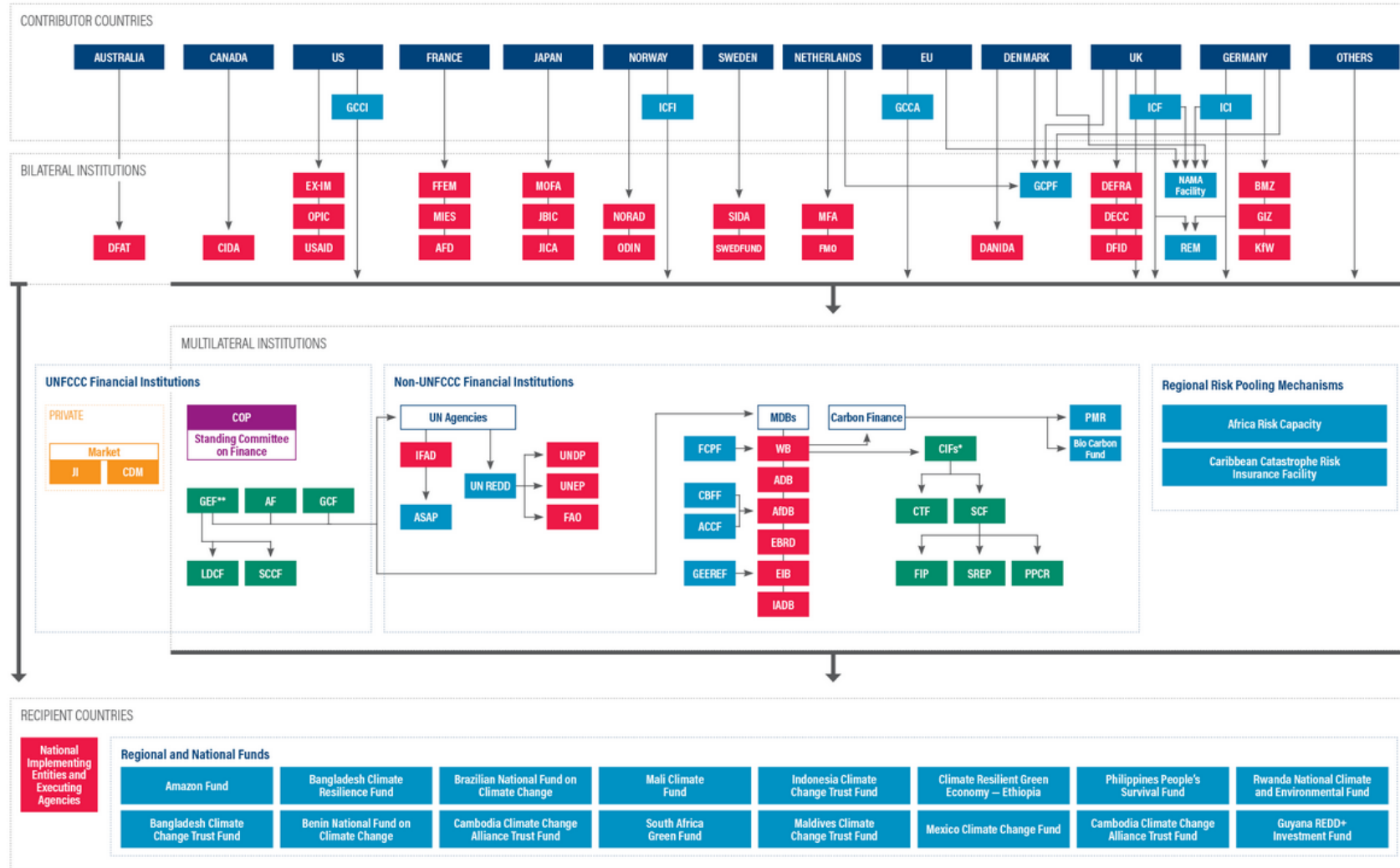
- Funds analyzed in this report
- Implementing agencies
- Funds not analyzed in the report

\* The CIFs are administered by the World Bank

\*\* GEF serves as secretariat for all the nonmarket UNFCCC funds except the GCF

Note: The schematic is indicative and does not capture all countries, climate funds and initiatives.

Source: Adapted by authors from ODI and HBF 2016.



Source: WRI, 2017, *Future of the Funds*

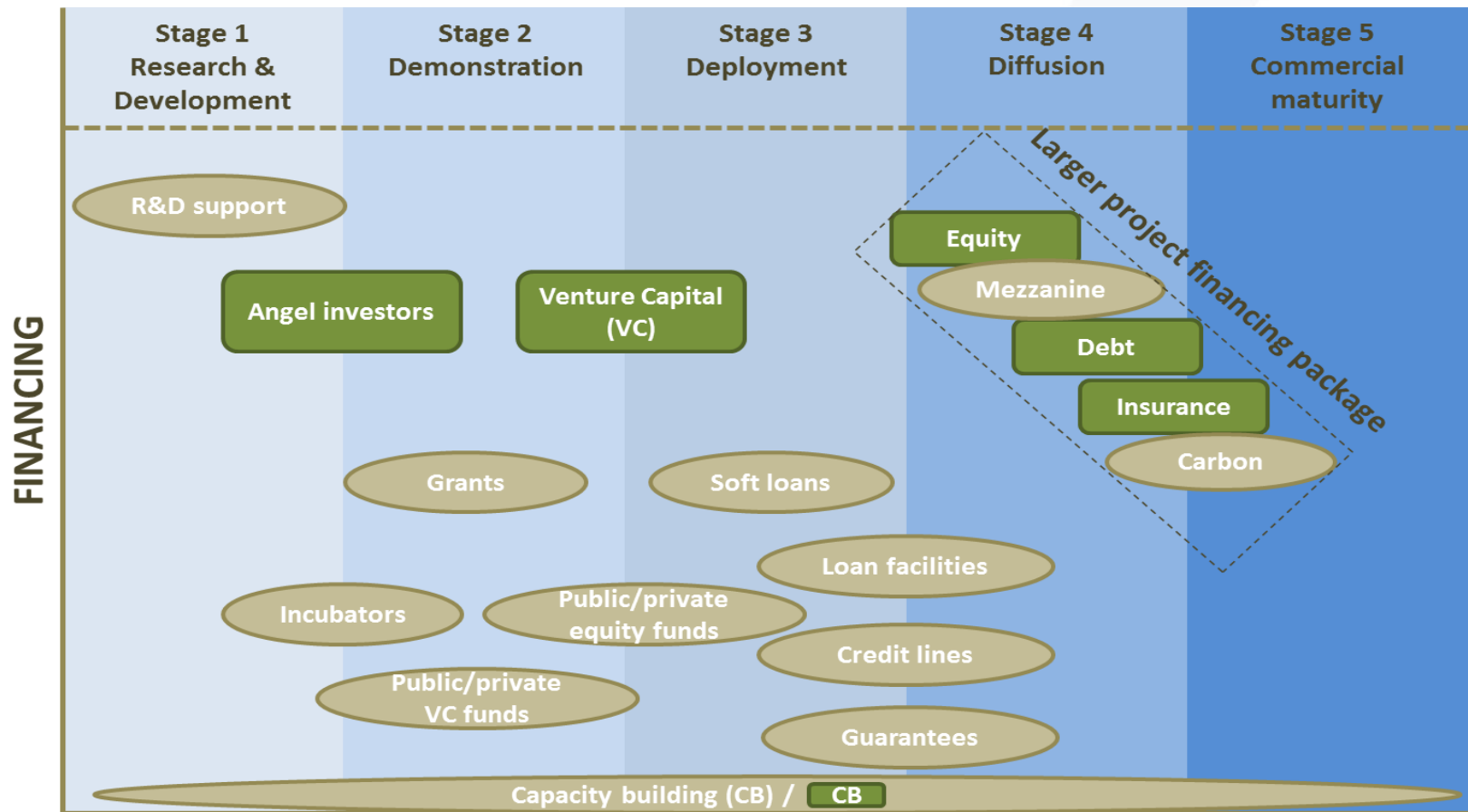
## Green Bonds:

- **Still a young market** - current share of overall bond market 0.2% only
- **Very dynamic market** with potentials to mobilize capital : issuance of green bonds USD49bn by June 2017 (compared to USD 81bn in 2016 with over 90 new issuers; incl. cities, municipalities, states and companies)
- **Green Bond Principles (GBP):** voluntary guidelines / standardization to ensure transparency regarding the use of funds, the selection of the projects to be supported, the management of revenues, and regular reporting
- **Perceived challenges:** no interest-benefits compared to „standard bonds“, preparation efforts, bottlenecks in respect of eligible projects , national regulations, Investors' risks
- **Development banks remain important players** in the market (incl. development of bankable projects)



OECD; 2017, *Mobilising Bond Markets for a Low-Carbon Transition*

## Instruments on different stages of development



Public financing mechanisms

Private (Commercial) finance mechanisms

- Debt financing is contractually fixed, for a specified period of time, and is often secured by collateral. Collateral is a security to the financier that the loan will be repaid, and may include guarantors, assets or savings.
- Examples of Debt Instruments:
  - Investment loans
  - Policy-based loans
  - Non-concessional loans
  - Concessional loans
  - Thematic bonds
  - Results-based financing and aid



CPI , 2015, *Background Report on Long-term Climate Finance*



- Equity financing involves an ownership interest in an enterprise that represents a claim on the assets of the entity in proportion to the number and class of shares owned
- Examples of Equity Instruments:
  - Investing in private equity funds (invests in stocks), and
  - Direct equity investments.

ADB provides equity investments across a broad range of sectors in Asia, including (a) infrastructure, (b) climate change related; (c) financial services; and (d) education and health





- Mezzanine instruments provide a **hybrid of debt and equity** and may include subordinated debt, preferred stock, project-specific arrangements, risk-oriented yield, or conversion options. Typically mezzanine finance is provided as debt capital which can be converted into equity if the loan is not repaid
- Examples of Mezzanine Instruments:
  - Subordinated debt (ranks below other loans and securities with regard to claims on a company's assets or earnings)
  - Preferred equity (has a higher claim on its assets and earnings than common stock)



- **Budget support:** financing a partner country's budget through a transfer of resources from an external financing agency to the partner government's national treasury
- **Policy-based instruments:** provided to the national budget in the form of loans or grants together with associated policy dialogue and economic and sector work in support of policy and institutional reforms
- **Grants:** e.g. for capacity building (technical assistance, training) and may include performance-based grants to cover e.g. the additional costs of making investments climate resilient
- **Risk mitigation instruments:** include insurance schemes and guarantees (a commercial and/or political risk assumed by an MDB or government)



The Paris Agreement and the Need to Define Climate Finance

Financial Sources and Instruments

**Climate Finance at Multilateral Development Banks**

Climate Finance at ADB



Since the Paris Agreement, the pivotal role of MDBs in mobilising climate finance has become particularly important:

MDBs	Targets announced
ADB	<b>Doubling climate finance to USD 6 billion</b> annually by 2020 (own resources only): mitigation finance USD 4 billion; adaptation finance USD 2 billion
AfDB	Triple climate financing to <b>reach 40% of investments</b> by 2020
EBRD	<b>40% of annual business investment</b> by 2020 in green finance
EIB	Global target of <b>greater than 25% of all lending</b> . Increased target of 35% lending in developing countries by 2020
IDBG	Goal to double climate finance <b>to 30% of operational approvals</b> by 2020 to an average USD 4 billion per annum, and to improve evaluation of climate risks and identify opportunities for resilience and adaptation measures
WBG	A one-third increase in climate financing, from 21% to <b>28% of annual commitments</b> by 2020. By current levels this would be an increase to USD 16 billion in 2020. The WBG intends to continue current levels of leveraging co-financing for climate-related projects, meaning up to another USD 13 billion a year in 2020. The direct financing and leveraged co-financing together represent potentially an estimated USD 29 billion in 2020



MDBs mobilise public and private investments for developing countries through a wide range of available tools and instruments; including:

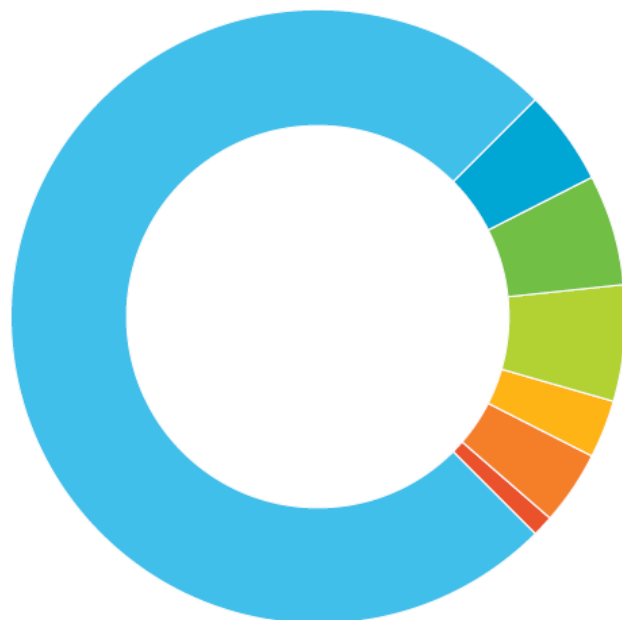
- Green bonds
- State budgets: making public finances available for climate change, including domestic investments and international climate finance commitments
- Capital markets: in addition to the instruments covered above, this includes climate risk disclosures, portfolio stress testing, climate modelling and qualitative risk assessments

# Joint MDB Report: Climate Finance by Instrument Type



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Since 2014, MDBs have reported climate finance by **financial instrument type**, including equity, grants, loans, guarantees, and other instrument types such as purchase agreements for carbon finance projects.



**75%** Investment loan - USD 18,870 million

**5%** Policy-based loan/budget support - USD 1,336 million

**6%** Grant - USD 1,430 million

**6%** Guarantee - USD 1,455 million

**3%** Equity - USD 767 million

**4%** Line of credit - USD 986 million

**1%** Other instruments - USD 252 million

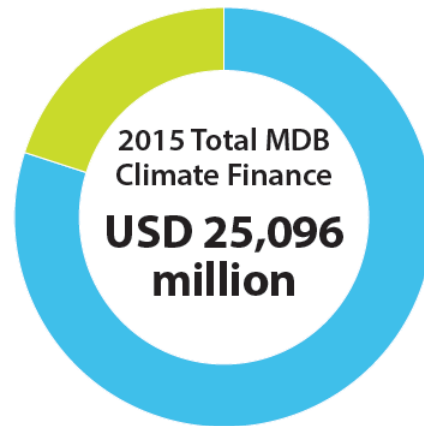


MDB Group, 2015, *2015 Joint Report on Multilateral Development Banks' Climate*



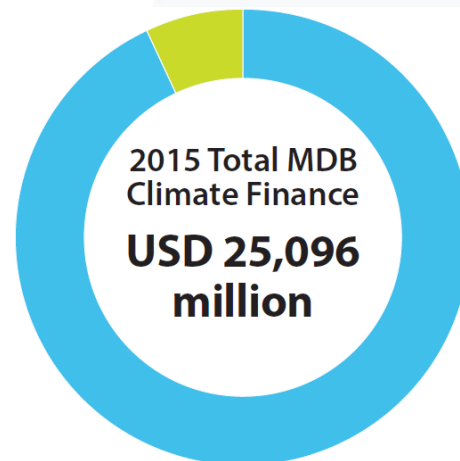


In 2015, MDBs committed USD 25,096 million climate finance



**20%** Adaptation  
USD 5,024 million

**80%** Mitigation  
USD 20,072 million



**7%** External Resources  
USD 1,649 million

**93%** MDB Own Resources  
USD 23,447million





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- Climate finance is the sum of financing provided for project elements that **contribute to mitigation and/or adaptation**.
- If the **entire project** qualifies as climate mitigation or adaptation, the entire ADB and ADB-managed financing is counted as climate finance.
- If only **specific portions of a project** qualify, the full project financing should not be counted as climate finance; instead, only the financing of eligible elements is counted.
- If project cost and financing information is not mapped to specific activities such as in the case of policy- or results-based lending, a **qualitative/experience-based assessment**, or alternatively, a **pro rating approach** can be applied to estimate the portion of financing attributable to climate mitigation or adaptation.



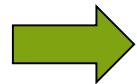
ADB, 2016, *Guidance Note on Counting Climate Finance at ADB*

# ADB's Climate Finance Approvals 2015 – 2016



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Topic	2015	2016
Mitigation	2.4	2.6
Adaptation	0.2	1.1
<b>Total</b>	<b>2.6</b>	<b>3.7</b>



***ADB's funding for climate projects is growing***



# ADB's Climate Change Pipeline 2017 – 2019 (USD million)



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ADB has committed to double its climate finance to USD 6 billion annually by 2020

Sector / Topic	2017	2018	2019
<b>Mitigation</b>	<b>4,420</b>	<b>4,247</b>	<b>4,769</b>
Energy	2,458	2,341	3,014
Transport	1,840	1,806	1,735
Other Sectors	122	100	20
<b>Adaptation</b>	<b>1,150</b>	<b>1,426</b>	<b>1,713</b>
Urban and Water	400	350	650
Agriculture	512	598	394
Other Sectors	239	478	669
<b>Total</b>	<b>5,570</b>	<b>5,673</b>	<b>6,482</b>



ADB (2017), *Work Programme Budget Framework 2017-2019*

# ADB's Approaches to Climate Finance Mobilisation



## Deploying concessional resources

### Internally-managed funds

- Thematic funds: energy, urban, water
- Climate Change Fund (CCF)
- Others with support from bilateral donors

### Externally-managed funds

- Climate Investment Funds (CIFs)
- Global Environment Facility (GEF)
- Green Climate Fund (GCF)

## Maximising market mechanisms

- **Carbon finance**
  - ✓ Asia Pacific Carbon Fund (closed in 2014)
  - ✓ Future Carbon Fund
- **Carbon Market Technical Support Facility**
  - ✓ CDM support
  - ✓ domestic emissions trading
- **Supporting other market mechanisms**
  - ✓ Japan Fund for the Joint Crediting Mechanism
  - ✓ Renewable energy credits; feed in tariffs
- **Green and climate bonds**

## Catalysing private capital

- **Direct project finance (lending, guarantees, syndications), and equity investments**
- **Public private partnerships: (PPPs) working with client DMCs across stages of PPPs**

# ADB: Externally-Managed Funds



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Fund / Facility	Commitment to ADB (as at April 2017) USD, million	Uncommitted Amount (as of March 2017) USD, million
Climate Investment Funds (CIF)	1,376	Fully programmed
Global Environment Facility (GEF)	224.86	Allocation by request and on the Fund Trustee approval
ADB Climate Change Fund (CCF)	59.6	4,4
Clean Energy Financing Partnership Facility (CEFPF)	300.36	148,57
Urban Climate Change Resilience Trust Fund (UCCRTF)	150.7	87,8
Integrated Disaster Risk Management Fund (IDRM Fund)	10	Fully programmed
Future Carbon Fund (FCF)	115	No longer contracting
Japan Fund for the Joint Crediting Mechanism	42.6	25,8

- ADB Climate Change Fund (clean energy, REDD and Land Use, Adaptation, Climate Finance Readiness)
- Clean Energy Financing Partnership Facility (Clean Energy Fund (multi-donor), Asia Clean Energy Fund (Japan), CCS Fund (Global CCS Institute and UK), Canadian Climate Fund for the Private Sector in Asia)
- Urban Climate Change Resilience Trust Fund
- Asia Pacific Disaster Response Fund (ADB, from Asia Tsunami Fund)
- Japan Fund for the Joint Crediting Mechanism
- Integrated Disaster Risk Management Fund (Canada)
- Carbon Finance (multi-donor): Future Carbon Fund (post-2012)



- Established 2008 to **facilitate greater investment** in DMCs
- Key **mechanism for pooling resources** within ADB to address climate change through technical assistant and grant components of investment projects
- Three focus areas:
  - Clean energy, sustainable transport and low-carbon urban development
  - Reduced emission from deforestation and degradation and improved land use management
  - Adaptation
- CCF is currently funded by ADB's new income and Ordinary Capital Resources (OCR)

- In 2015, ADB became the first MDB to be accredited as Multilateral Implementing Entity (MIE) by the **Green Climate Fund (GCF)**.
- **Urban Water Supply and Wastewater Management Investment Programme, Fiji:** a GCF-grant USD 31million, ADB-loan USD 67.7million; EIB-loan USD 38million; Government-grant USD 85.3million; Focus: Improve supply and access to safe water; including a new sewerage systems.
- **Pacific Islands Renewable Energy Investment Programme, Cook Islands:** a GCF-grant USD 17million, ADB-grant USD 5million, Government-grant USD4million; Shifting from diesel to renewable energy in seven Small Island Developing States (SIDS).

# ADB Maximising Market Mechanisms: Green Bonds



- ADB's green bond programme supports DMCs seeking to mitigate GHG emissions and adapt to the consequences of climate change, while delivering environmentally sustainable growth
- Eligible projects are identified by using the joint MDB approach for tracking and reporting climate change mitigation and adaptation finance.
- In August 2016, ADB **raised USD 1,3 billion** to help finance climate change mitigation and adaptation projects with the issue of **dual-tranche 3-year and 10-year green bonds**, following its inaugural green bond issue in 2015.
- Proceeds of the green bonds will support low-carbon and climate resilient projects funded through ADB's ordinary capital resources and used in its non-concessional operations.



*ADB, ADB Green Bond Framework*

# ADB: Maximising Market Mechanisms: Green Bonds



Bond	3 years	10 years
Issue size	\$800 million	\$500 million
Coupon rate	1% per annum payable semi-annually and a maturity date of 16 August 2019	1.75% per annum payable semi-annually and a maturity date of 14 August 2026
Price	99.779%	99.745%
Yield	22.75 basis points over the 0.75% US Treasury notes due July 2019.	21.9 basis points over the 1.625% US Treasury notes due May 2026.
Geographic	58% of the bonds were placed in the Americas, 37% in Europe, Middle East, and Africa, and 5% in Asia	49% of the bonds were placed in Asia, 32% in Europe, Middle East, and Africa, and 19% in the Americas
Investor type	44% fund managers 32% central banks and official institutions 16% banks 8% insurance, pension and other types of investors	46% insurance, pension and other types of investors 30% fund managers 13% banks 11% central banks and official institutions



- The **Clean Energy Financing Partnership Facility (CEFPPF)**: established in 2007 to assist DMCs improve energy security and transit to low-carbon use through cost effective investments. In 2016, CEFPPF leveraged USD 2,1 billion in clean energy investments through a balance of both concessional and grant financing for technical assistance aimed to enhance capability building and leverage financing in infrastructure and investments in clean and renewable energy.
- **Leading Asia's Private Infrastructure Fund (LEAP)**: capitalised by USD 1,5 billion equity from the Japan International Cooperation Agency (JICA). Over USD 200 million LEAP funds have been allocated to RE projects in India and Indonesia, comprising 60% of private sector financing for the year.



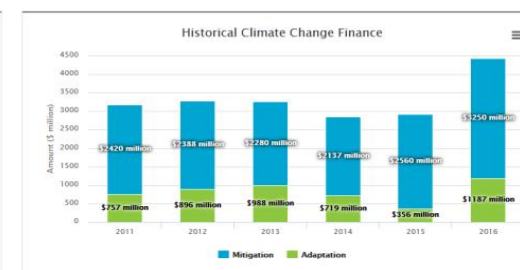
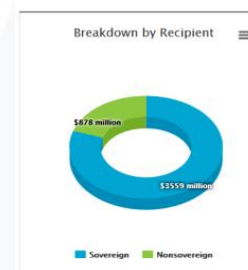
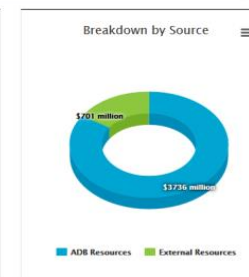
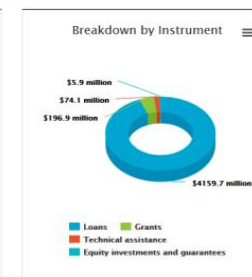
- In February 2017, the ADB and the Government of Tonga launched **Tonga's first Climate Change Trust Fund**. The aim is to finance small, community-based climate adaptation and mitigation projects and fund the climate component of non-community-based projects. The trust fund is part of the Tonga Climate Resilience Project financed by a USD19,25 million grant from the Pilot Program for Climate Resilience (PPCR) of the Strategic Climate Fund (SCF).
- In March 2017, V20 finance ministers from 15 Asia-Pacific developing countries held a regional consultation focusing on **enhanced economic and financial responses to climate change**, including instruments for disaster risk reduction, public financial management and carbon pricing. The consultation is supported by ADB among others.

- Launched in April 2017 as part of ADB's objective to lead the climate efforts in Asia and the Pacific, and to ensure that current and future climate efforts are effective, efficient and sustainable
- ADB is the first MDB to present a consolidated climate change portfolio with detailed information on financing
- The aim is to present detailed figures and insights on projects supporting climate change mitigation and adaptation efforts in the move towards the USD 6 billion annual climate financing commitment by 2020
- Available information: infographics based on country, financing instrument, region, source, sectors, and other parameters

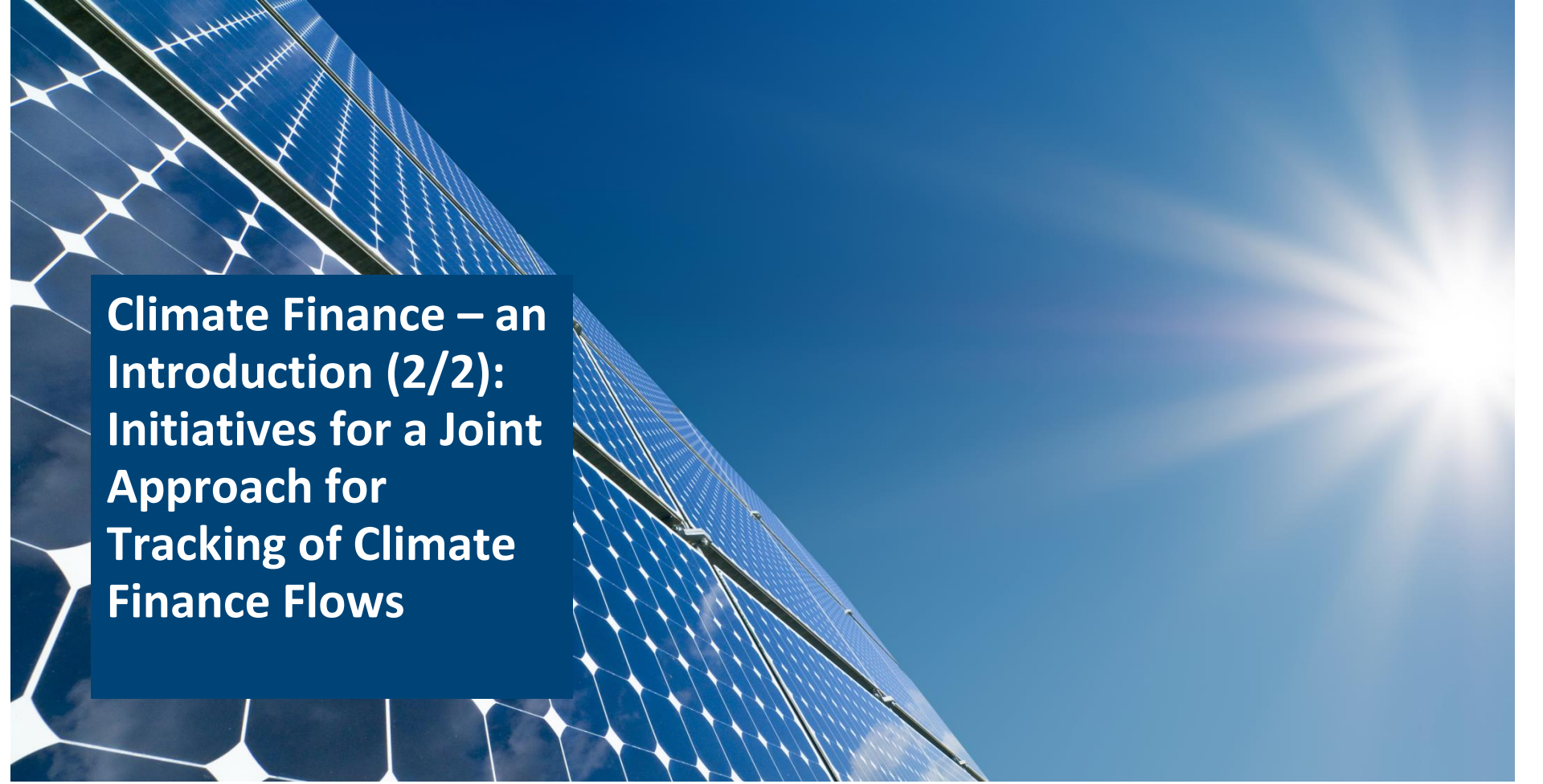


ADB, 2017,

2016 Climate Change Financing (Database)







**Climate Finance – an  
Introduction (2/2):  
Initiatives for a Joint  
Approach for  
Tracking of Climate  
Finance Flows**





**Current Climate Finance Tracking Systems: International Approaches**

**Current Climate Finance Tracking Systems: MDB Approaches**

**Joint MDB Climate Finance Tracking Approach**



## **Current Climate Finance Tracking Systems: International Approaches**

Current Climate Finance Tracking Systems: MDB Approaches

Joint MDB Climate Finance Tracking Approach

# Reporting needs of development assistance and climate finance



- **UNFCCC National Communications:** Every two years, bilateral climate financing report: Annex II countries report funding activities in developing countries to promote climate change mitigation and adaptation. Non-Annex I countries report on support received.
- **Challenges of tracking financial flows:** Lack of harmonization of definitions, current tracking efforts lack transparency and comparability, no common (global adopted) guidelines available yet.
- **Open questions;** e.g. how does the concept of **additionality** relate to the USD100bn long-term commitment? What constitutes **mobilised** climate finance, and how can it be **demonstrated**?
- **OECD** (in cooperation with other agencies; e.g. IEA) is responding to tracking challenges; addressing open questions e.g. collective versus individual reporting; intertwined private/public and international/domestic flows; the timing of financial flows – disbursements vs. commitments (point of measurement).

## Climate Change Expert Group (CCXG) Global Forum on Environment & Climate Change:

- A forum involving practitioners and negotiators of governments
- CCXG-Secretariat is jointly provided by the OECD and the IEA

## Abstract of the CCXG impact:

- **Transparency & MRV:** highlighted gaps in existing reporting frameworks, an enhanced transparency framework was agreed at COP21 to address gaps of the MRV
- **Task force on measuring mobilized private CF:** develop methodologies and collect data for measuring mobilized private CF (next meeting September 2017)
- **Ad Hoc Working Group on the Paris Agreement (APA):** To develop further guidance for the information to be provided by Parties in order to facilitate clarity, transparency and understanding of NDCs; and to develop recommendations for modalities, procedures and guidelines (MPGs) in line with Article 13.

# Reporting needs of development assistance and climate finance



The **design process criteria** for climate finance to be reported – i.e. measuring and reporting the flow of climate finance depends on **careful project planning**

- Adaptation: Set out a **context of climate vulnerability** specific to the project location based on current available data and identify climate change-related risks, exposure and sensitivities.
- Mitigation: Identify **impact on climate** and potential GHG emissions savings.
- Link project activities to the context of climate vulnerability and /or impact (statement of purpose or intent); reflecting only direct contributions to climate resilience and refer to definitions and eligibility criteria from; e.g. **OECD DAC Rio markers**).

Narrative summary/ objectives	Measurable Indicators	Means of Verification	Important Assumptions
<b>Goal/ Impact</b>			
<b>Purpose/ Outcome</b>			
<b>Outputs</b>			
<b>Activities</b>			

# Reporting needs of development assistance and climate finance



## Development Assistance Committee (DAC):

- Governments report the amount of public development cooperation expenditure to the DAC of the Organization for Economic Cooperation and Development (OECD); incl. **projects for international climate financing**, which are categorized for at least one of the **OECD-Rio markers for climate protection (KLM) or climate change (KLA)**

## Coders have hereby three options for coding adaptation/mitigation being:

- A **principle objective**, it must be established that it would not have been funded, but for that adaptation/mitigation objective (value = 2)
- A **significant objective** have been formulated or adjusted to help meet climate concerns (value = 1)
- Or **not targeted** to the policy objective (value = 0; i.e. no CF contribution)

The values for a measure can together reach a maximum of 2; i.e. measures whose combined values would be greater than 2, would be charged with 150% or 200% in climate finance (i.e. non-acceptable multiple credits).





Definition	Directly or indirectly contributes to the mitigation or limitation of greenhouse gas emissions (GHG) or to the promotion of the binding of carbon dioxide (CO <sub>2</sub> ) greenhouse gases in the soil or in plants.
Criteria for eligibility	<ul style="list-style-type: none"><li>▪ To mitigate climate change by reducing anthropogenic greenhouse gas emissions</li><li>▪ To protect and / or promote sinks and reservoirs that bind greenhouse gases from the atmosphere in the long term</li></ul>
Possible measures	<ul style="list-style-type: none"><li>▪ Planning and implementation of concrete measures for GHG reduction or binding,</li><li>▪ Development and dissemination of information and scientific foundations on climate change,</li><li>▪ Integration of the topic "mitigation of greenhouse gases" into the development goals and planning or national policies of the recipient countries through institution building, capacity development, strengthening the regulatory and political framework conditions</li><li>▪ Supporting developing countries in the design and implementation of their NDCs</li></ul>





<p>Definition</p>	<p>Intergovernmental Panel on Climate Change (IPCC) describes CC adaptation as a process of focusing on the current and expected climate and its impact.</p>
<p>Criteria for eligibility</p>	<ul style="list-style-type: none"> <li>▪ The reduction of the vulnerability of humans and nature to the already-occurring and predicted consequences of climate change, including natural weather fluctuations (climate variability); and/or</li> <li>▪ Maintaining and enhancing the resilience of humans and nature (climate resilience) by improving adaptation or absorption capacity against climate-induced stress, shocks and variability; and/or</li> <li>▪ Support that reduces stress, shocks, and variability (exposure) of human and nature</li> </ul>
<p>Possible measures</p>	<ul style="list-style-type: none"> <li>▪ Development and dissemination of CC Information and Scientifics</li> <li>▪ Integration of adaptation to climate change in policy making, planning and decision-making processes</li> <li>▪ Planning and implementation of concrete measures to adapt to climate change (for example in agriculture, flood protection)</li> <li>▪ Support to fulfill the relevant commitments under the United Nations Framework Convention on Climate Change (e.g. National Adaptation Planning, NAP).</li> </ul>

# GEF Adaptation Monitoring and Assessment Tool



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- GEF Adaptation Monitoring and Assessment Tool (AMAT), or tracking system **measures progress** toward achieving the outputs and outcomes under the LDCF/SCCF results framework of the LDCF / SCCF
- Submitted 3 times during a project's life: CEO endorsement, project mid-term and project completion
- **Indicators specified for different vulnerable sectors**
- Refined through continuous consultations (living document)
- Agencies required to choose at least one outcome indicator and one output indicator per each of the 3 climate adaptation objectives targeted in the project, Agencies can include own indicators
- Once core indicators selected at CEO endorsement, projects will fill in the baseline and expected target level for each indicator



GEF, 2014, *Updated Results-Based Management Framework for Adaptation to Climate Change under the Least Developed Countries Fund and the Special Climate Change Fund*

# GEF AMAT: Tracking Tool



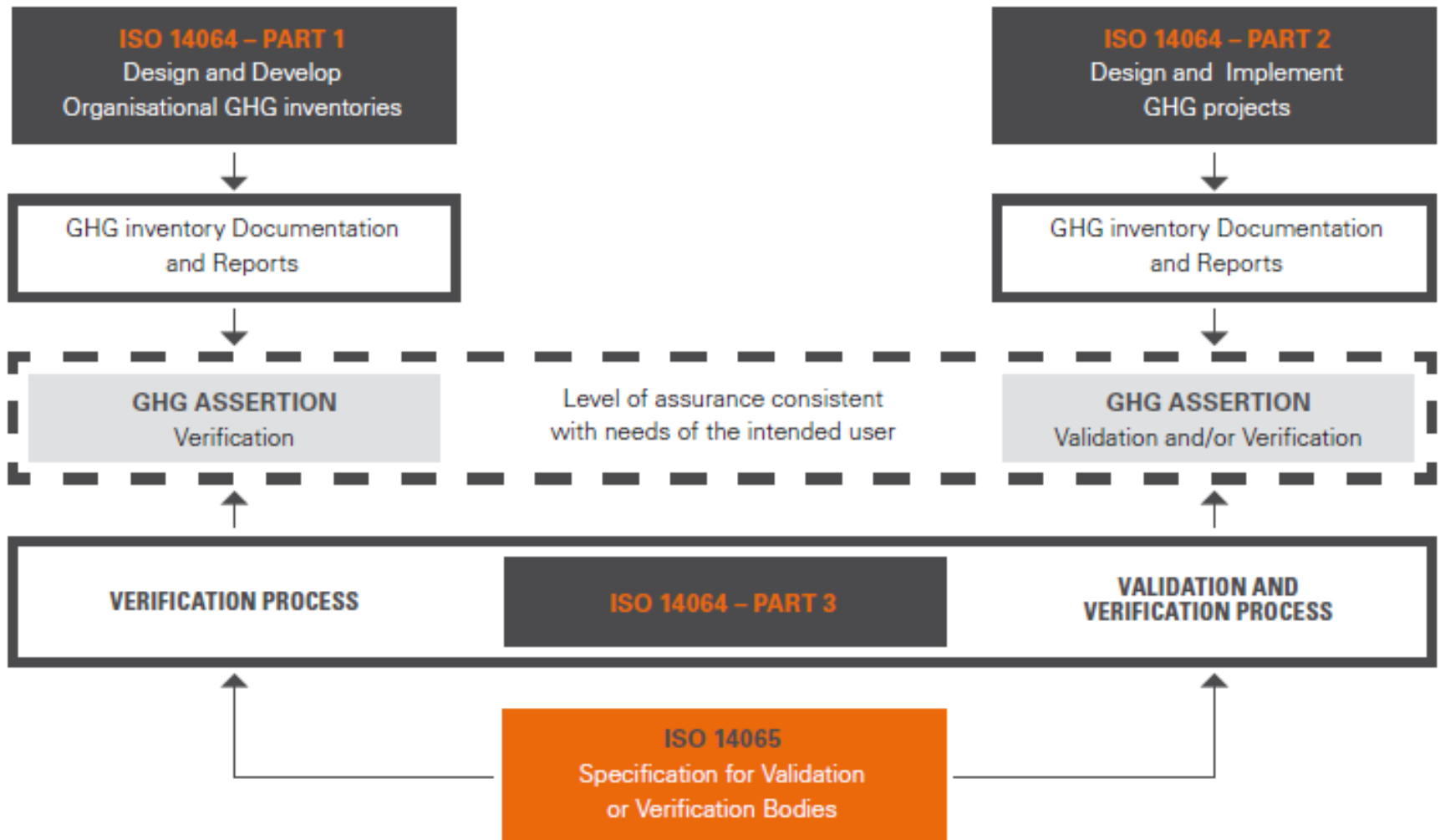
The tracking tool facilitates monitoring the project's contribution towards the goal, objectives and outcomes of the adaptation programme through 14 indicators

Project identification						
Project title:						
Country(ies):		GEF project ID:				
GEF Agency(ies):		Agency project ID:				
Executing Partner(s):		Council/ CEO Approval date:				
Project status at submission:		Tool submission date:				
Project baselines, targets and outcomes						
Indicator	Unit of measurement	Baseline at CEO Endorsement	Target at CEO Endorsement	Actual at mid-term	Actual at completion	Comments (e.g. specify unit of measurement)
Objective 1: Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change						
Indicator 1: Number of direct beneficiaries	number of people					
	% female					
	vulnerability assessment (Yes/No)					(if a vulnerability assessment has been carried out for the targeted population, please describe)
<i>Outcome 1.1: Vulnerability of physical assets and natural systems reduced</i>						
Indicator 2: Type and extent of assets strengthened and/or better managed to withstand the	ha of land					(specify asset type)
	km of coast					(specify asset type)
	km of roads					(specify asset type)

# Standards: ISO 14064



The ISO 14064 standard provides a complimentary set of tools for programs to quantify, monitor, report and verify GhG emissions (update in 2018 on MRV).





- ISO 14064-Part I: three key aspects for developing a GhG inventory for organisations:
  - Setting inventory boundaries: organisational and operational
  - Quantifying GHGs: identifying specific emission sources, collecting data and quantify emissions from individual emissions sources
  - Reporting GHGs: identify organisational boundaries, GhG emissions from individual operational categories and methodologies used for quantification
- ISO 14064-Part II: facilitates monitoring project baseline against project performance and ensures all reporting is validated and verified
  - Applies to CDM / JI projects (Kyoto Protocol; EU-ETS); and other GhG projects in the context of emission trading programmes
  - Identifying and selecting GhG sources, sinks and reservoirs relevant to project and baseline scenarios, monitoring, quantifying, documenting and reporting

# Standards: Climate Change Related ISO Developments



- Several ongoing working groups: for climate finance (**ISO 14097**), validation and verification (**ISO 14064-3**), accreditation (**ISO 14065**), product carbon foot-printing (**ISO 14067**), adaptation framework standard (**ISO 14090**) and vulnerability assessment (**ISO 14091**).
- **ISO 14080** is under development and will provide guidance on the framework for the development and the use of methodologies for climate action; incl. adaptation; climate action planning; climate finance; eligibility criteria; environmental integrity. It is at the Draft International Standard Stage and **publication is expected in 2018**.

# Standards: The GHG Protocol for Project Accounting (1/2)

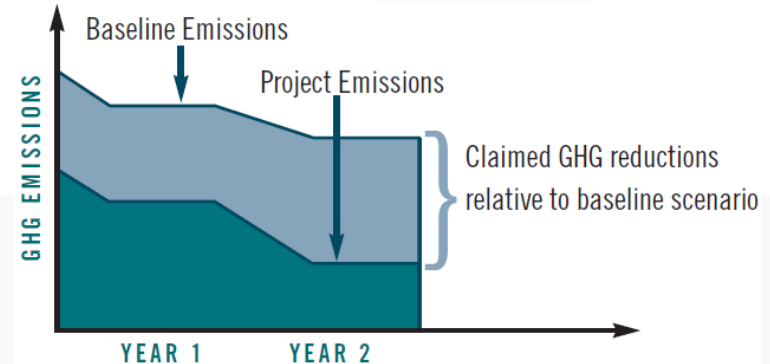
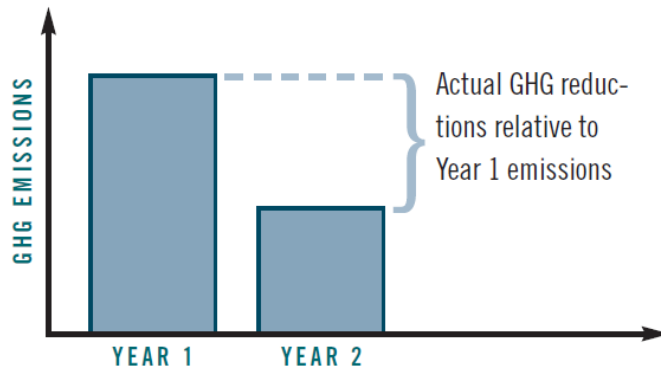


- The most widely-used international accounting tool to understand and quantify GHG emissions
- GhG Project consists of a specific activity or set of activities intended to reduce GHG emissions, increase the storage of carbon, or enhance GHG removals
- It may include modifications to existing production, process, consumption, service, delivery or management systems, as well as the introduction of new systems.
- GhG source / sink categories include
  - Combustion emissions from generating grid-connected electricity or from generating energy or off-grid electricity, or from flaring;
  - Industrial process emissions(carbon dioxide (CO<sub>2</sub>) from the production of clinker for cement); fugitive emissions (GHG leaks from pipelines); and
  - Waste emissions (GHG emissions from landfills)

# Standards: The GHG Protocol for Project Accounting (2/2)



- Applies a baseline scenario:



- Static baseline rates are better for projects that substitute existing plants or technologies
- Dynamic baseline rates are better for GhG projects that are part of a system that changes significantly over time (e.g. LULUCF projects)
- Additionality needs to be ensured, but there is no common agreement about how to prove that a project activity and its baseline scenario are different
- Provides several **sector guidelines** (e.g. for LULUCF, Agriculture and Grid-connected Electricity Projects)
- The GHG Protocol **Product Life Cycle** Accounting and Reporting Standard refers to the full life cycle emissions of a product; focusing on greatest GhG reduction opportunities





The ISO GHG emissions reporting standard (ISO 14064-1) is consistent with the GHG Protocol Corporate Standard and on “organizational/corporate level they hardly differ.

- Principles of completeness, consistency, accuracy and transparency are in both ISO and GHGP, and have essentially the same meaning in each.
- On GHG Emission and removal boundaries or Operational boundaries, both specify 6 Kyoto gases, but Protocol provides much more guidance on how and why to select which emissions.
- ISO is more explicit on selecting calculation approaches and includes judgement on which methods of estimation are more accurate; while Protocol provides more guidance on identifying indirect emissions.
- ISO applies a standard devoted to verification, but assumes verification is likely to be undertaken; while Protocol describes the need, use and basic concepts of verification.



Current Climate Finance Tracking Systems: International Approaches

**Current Climate Finance Tracking Systems: MDB Approaches**

Joint MDB Climate Finance Tracking Approach

- The carbon footprinting approach is based on the Greenhouse Gas Protocol. The software, developed by AFD, calculates the equivalent amounts of CO<sub>2</sub> from basic data regarding the characteristics of the project and a wide set of standardised emission factors.
- The approach identifies the CO<sub>2</sub> emissions that a project causes (for example, by building and operating infrastructure measures).
- As a rule, the difference between the emissions generated by the project and the emissions that would have been generated without the project (reference scenario or baseline) is determined.
- The difference between these two scenarios indicates whether the project has a positive or negative impact on emissions and thus on climate change in general.



WRI, WBCSD, 2005, *Greenhouse Gas Protocol*

- Created by IFC in 2012, CEET identifies GhG emission sources that will change between the baseline and project scenarios due to the project activity. Emission sources that remain constant between these scenarios are excluded
- Based on the AFD carbon tool
- Uses IPCC and GhG Protocol emission factors and calculations
- Scopes: Scope1 Direct; Scope 2 Indirect (purchased power, steam, etc); Scope 3 can be estimated but are not required
- Boundaries: real sector; “use of funds”
- GhG data is required for calculations available in project documentation, then complemented during project appraisal. Accounting should be kept separate from analysis



IFC, 2012, *Carbon Emissions Estimator Tool (CEER)*, Excel File Available

# Methodology for Assessment of Greenhouse Gas Emissions



- In 2010, EBRD developed an assessment to estimate the **change in GHG emissions** brought about by investments. This is the difference between the emissions following the implementation of the project investment and the emissions that would have occurred in its absence.
- For projects seeking to benefit from the Kyoto Protocol flexibility mechanisms project and baseline emission assessments are based on methodologies approved under the UNFCCC.
- For most other projects, the project emission is taken as the annual emission occurring once the project has been fully implemented; the baseline emission is a representative pre-project emission, usually zero where the project is a green-field development or the facility annual emissions pre-investment where the project comprises upgrading or refurbishment.



EBRD, 2010, *EBRD Methodology for Assessment of Greenhouse Gas Emissions*

# The Carbon Footprint of Projects Financed



- The methodology developed by EIB is based on the internationally recognised IPCC Guidelines and the WRI GHG Protocol
- The Bank calculates whether or not a project contributes to overall emissions reduction through applying a baseline against which to calculate project relative emissions. The approach uses the most likely alternative option for the financed projects.
- Scope 1 emissions are direct emissions which physically occur from sources operated by the project within the project boundary
- Scope 2 emissions accounts for GhG emissions from the generation of electricity that is consumed by the project (indirect emissions produced outside the project boundary)
- Scope 3 emissions are a consequence of the activities of the project but occur from sources not operated by the project itself.



EIB, 2014, *The Carbon Footprint of Projects Financed by the Bank*, Update

# Greenhouse Gas Assessment Emissions Methodology



- Developed by IDB in 2012, the Methodology assesses all direct investment projects with emissions, or emissions savings, exceeding 25 kilotons CO<sub>2</sub>e
- Focus on energy, industry, agriculture, water and sanitation, transport, urban development, and tourism
- Calculations for RE projects are typically greenfield (new plants). RE calculation modules estimate reduced emissions by comparing the generated energy with the national grid default factor as static baseline
- The methodology for EE is applicable for brownfield projects. Generally, the EE calculation modules estimate avoided emissions by comparing the pre-upgrade project configuration with the current, or post-upgrade, configuration. Two steps:
  - Calculate energy intensity: *Emission Intensity = (Total Emissions)/(Total Output)*
  - Calculate avoided emissions: *Avoided Emissions = (Intensity Before Upgrade – Intensity After Upgrade) x Output After Upgrade*



# Harmonised Approach to GhG Accounting



- 11 development banks, including ADB, signed the Declaration of the International Financial Institutions (IFI) on a harmonised approach to project-level GhG accounting during project appraisal.
- Systematically record GHG emissions:
  - Estimate the gross (or absolute) GhG emissions a project is expected to produce on an annual basis for a representative year
  - Capture the development and mitigation contribution of projects, through net (or “relative”) GHG emissions against a baseline: estimate the net GhG emissions contribution compared to a baseline ‘without project’ or ‘alternative’ scenario
- Use and disclosure of internationally recognised GHG calculation methods (e.g. GHG Protocol, ISO 14064)



The GEF, 2015, *International Financial Institution Framework for a Harmonised Approach to Greenhouse Gas Accounting*





- The Development Bank of Latin America, with the support of Kreditanstalt für Wiederaufbau (KfW) is designing and validating a programme to support decision making, to evaluate the risks related to the impact of climate change and climate variability on projects
- It will consider model scenarios for the evaluation of vulnerability in 30-50 years, supported by cartographic information based on a socio-economic trend analysis
- The base variables to consider include: precipitation, temperature, bio-physic data, socio-economic data, geomorphology, use of the land, water resources, river flows, and torrents
- This information will enable to determine the current vulnerability, as well as model scenarios of future vulnerability due to droughts, floods, landslides, and analysis of the combined vulnerability



Current Climate Finance Tracking Systems: International Approaches

Current Climate Finance Tracking Systems: MDB Approaches

**Joint MDB Climate Finance Tracking Approach**



## Theoretical background information

## Practical reflections

**Project preparation**  
(e.g. feasibility or risk assessments)

### **Session 1**

Climate change principles  
Climate change policies and commitments

**Project design**  
(e.g. identifying activities)

### **Session 1**

Climate change mitigation and adaptation measures

### **Session 2**

Climate finance sources and instruments

**Coding / statistics**

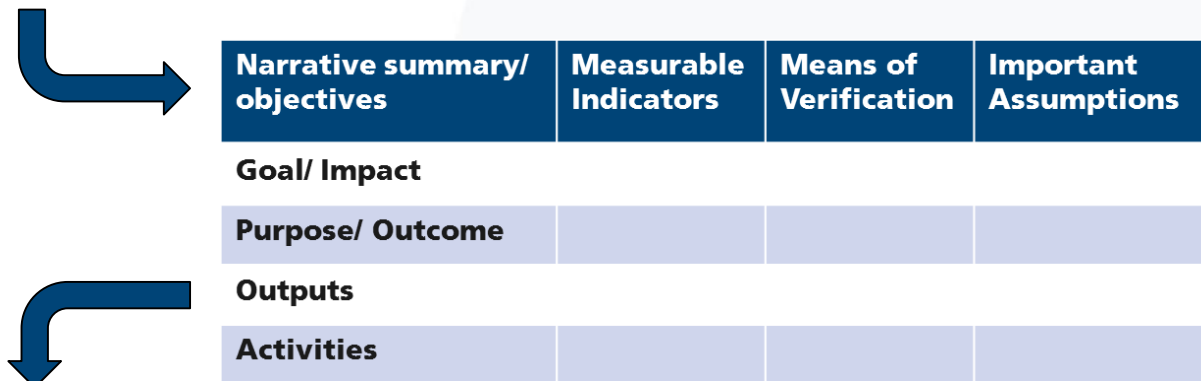
### **Session 3**

Climate finance tracking:  
- International initiatives  
- MDB approach  
- ADB approach

**Sessions 4-8**  
Climate finance (tracking) in different sectors

The **design process criteria** for climate finance to be reported – i.e. measuring and reporting the flow of climate finance depends on **careful project planning**

- Adaptation: Set out a **context of climate vulnerability** (climate change-related risks, exposure and sensitivities).
- Mitigation: Identify **impact on climate** and potential GHG emissions savings.
- Reflect international commitments (incl. NDCs and SDGs)



- Identify/track and report the climate finance component (100% or only partial)
- There is currently no internationally agreed definition of climate finance (CF) nor a framework for measuring CF, but the CF-flow needs to be transparent

- MDBs have come together **to harmonise their approaches and create a robust and transparent basis for CF reporting**
- The Joint MDB Approach responds to activities that MDBs carry out in developing and emerging economies relating to mitigation and adaptation finance
- The Joint Approach is work in progress and aims at assisting MDBs Climate Finance Reporting linked to MDB's financial commitments:
  - All types of resources are eligible for reporting (own and external resources)
  - All types of instruments are included: debt, equity, guarantees, grants, and other instruments, such as green bonds and carbon finance
  - Avoids double-counting (of e.g. mitigation and adaptation activities)
  - Classification is made ex-ante project implementation



ADB, 2016, *Joint Report on ADBs' Climate Finance*