European Bank
for Reconstruction and Development

G20 2019 JAPAN

MDB CLIMATE ACTION:
THE EBRD PERSPECTIVE

INPUT DOCUMENT
FOR THE G20 CLIMATE SUSTAINABILITY
WORKING GROUP

PAPER PREPARED BY THE EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT (EBRD)
FOR THE G20 CLIMATE SUSTAINABILITY WORKING GROUP UNDER THE JAPAN G20 PRESIDENCY

JAPAN FEBRUARY 2019

European Bank
for Reconstruction and Development

G20 2019 JAPAN

MDB CLIMATE ACTION:
THE EBRD PERSPECTIVE

PREPARED FOR THE
G20 CLIMATE SUSTAINABILITY WORKING GROUP

CONTENTS

FIGURES

BOXES AND TABLE

ACRONYMS

BATS	Best Available Technologies
C40	C40 Cities Climate Leadership Group
CIFs	Climate Investment Funds
CSI	Cement Sustainability Initiative
CTF	Clean Technology Fund
CSWG	Climate Sustainability Working Group
EEAA	Egyptian Environmental Affairs Agency
ESAP	Environmental and Social Action Plan
E5P	Eastern Europe Energy Efficiency and Environment Partnership fund
ETCs	Early Transition Countries
EU-IFI	High-Level Initiative on Energy Efficiency
FFD	Financing for Development
FINTECC	Finance and Technology Transfer Centre
GCAP	Green City Action Plan
GDP	Gross Domestic Product
GCF	Green Climate Fund
GCOM	Global Covenant of Mayors for Climate and Energy
GEF	Global Environmental Facility
GET	Green Economy Transition
GW	Gigawatt
IEA	International Energy Agency
IDFC	International Development Finance Club
IPCC	Intergovernmental Panel on Climate Change
j-MDB	Joint MDB Group
MDB	Multilateral Development Banks
MEI	Municipal and Environmental Infrastructure
MRV	Monitoring, Reporting and Verification
MOFA	Ministry of Foreign Affairs
NDEP	Northern Dimension Environmental Programme
NDCs	Nationally Determined Contributions
NGOs	Non-Governmental Organisation
PPs	Policy Pathway
PPPs	Public-Private Partnerships
REEP	Regional Energy Efficiency Programme
SCF	Strategic and Capital Framework
SCCF	Special Climate Change Fund
SGDS	Sustainable Development Goals
SEFFs	Sustainable Energy Finance Facility
SEI	Sustainable Energy Initiative
SME	Small and Medium Enterprise
SRI	Sustainable Resource Initiative
SSF	Shareholder Special Fund
TC	Technical Cooperation
TCFD	Task force on Climate Related Financial Disclosure
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WBCSD	World Business Council for Sustainable Development
2DS	IEA two degree Scenario

European Bank
for Reconstruction and Development

G20 2019 JAPAN

MDB CLIMATE ACTION:
THE EBRD PERSPECTIVE

PREPARED FOR THE
G20 CLIMATE SUSTAINABILITY WORKING GROUP

EXECUTIVE SUMMARY

This report has been prepared at the invitation of Japan's Ministry of Foreign Affairs for the Climate Sustainability Working Group (CSWG) in the context of the G20 chaired by Japan in 2019. Reflecting the important role which Multilateral Development Banks are playing in scaling-up climate action, this report provides an insight on the broad range of financing, policy and capacity building activity driving the scaling-up of EBRD climate activity in line with its ambitious climate finance targets set in the run-up to COP21.

Strategic context

The development of EBRD climate action takes place within an international context which includes:

- The international development and sustainability agenda with the adoption of the Sustainable Development Goals (SDGs) and the Paris Agreement adopted at COP21.
- The G20 Summit meeting in Hamburg reaffirmed the urgency for climate action and issued the G20 Hamburg Climate and Energy Action Plan for Growth which provided a strong impulse for continued EBRD work on the transformation of energy systems, including through energy efficiency and renewable energy.
- The EBRD has been working closely with the EU which continues to play a leading role on climate action.
- The EBRD is an active participant in the One Planet Summit process including the development of a specific initiative to accelerate climate finance for cities.
- The 1.5 degree IPCC special report issued in October 2018 shows that climate change is happening at an accelerating pace with increasingly severe effects and states that investments in low-carbon technology and energy efficiency need to increase by a factor of five.
- At COP24, the EBRD jointly with the other MDBs, announced a specific work programme to align their financial flows with the Paris Agreement including a set of core principles and a specific timeframe.

In spite of significant capital stock transformation in EBRD countries of operations during the past 25 years, carbon intensity remains overall high. The current and future impact of climate change – particularly in terms of water scarcity but also due to increasingly unpredictable and extreme weather patterns – have further exacerbated the environmental challenges faced by the countries of operations of the EBRD.

The region has taken important steps to reduce environmental degradation with noticeable results in terms of improved urban air quality, the phase-out of ozone-depleting substances, a larger use of renewable sources of energy, improved water management and increased coverage of protected areas. Most governments of the region are signatories or parties to the major global and regional environmental and climate change conventions and protocols. Overall, tangible progress has been made in integrating the sustainable development dimension into policymaking in key sectors such as agriculture, transport and housing, reducing CO2 emissions, increasing energy efficiency and strengthening the sustainable management of forests.

While there has been an overall decoupling of economic growth from emissions in the region of operations, progress after 1995 has been uneven across countries. As a result, energy and CO2 intensity in the EBRD region remains on average over three times higher than in the European Union (EU). From a water perspective, the EBRD region has some of the most water stressed countries in the world, specifically in the Southern and Eastern Mediterranean and Central Asia.

From its foundation in 1991, the EBRD integrated the environmental dimension into its core constitutive document with the promotion of environmentally sound and sustainable development therefore going hand in hand with other aspects of the transition process. Energy efficiency was considered early on to be a key driver of improved resource efficiency and cost effectiveness.

Following the call from the G7 Summit in Gleneagles in 2005 for MDBs to step up their clean energy financing activity, the EBRD launched the Sustainable Energy Initiative (SEI) in 2006 with the aim of scaling up sustainable energy investments in its regions of operations. In 2015, in the run-up to COP21, the EBRD launched its Green Economy Transition (GET) approach which set a target of 40% of total EBRD investment in green climate finance by 2020. The target is to be reached through projects that advance the transition to a low-carbon, resilient economy and help prevent economies from being locked into a carbon-intensive, pathway.

EBRD climate finance results and impact

Cumulative EBRD climate finance since the launch of the SEI reached €26 billion (USD 30 billion) by end 2017 in 1,462 projects for a total project value of €148 billion (USD 170 billion). About three quarters of this investment was in energy efficiency and one quarter in renewable energy. The share of climate finance relative to total EBRD annual investment increased from 15% in 2016 to 40% in 2017 reflecting the progressive mainstreaming of climate action across countries and sectors of operations of the EBRD.

Total carbon emissions reduction from these projects is estimated at 90 million tonnes per year. Total EBRD adaptation finance is estimated during this period at €1.4 billion (USD 1.6 billion). Reflecting its mandate and operating model, significant attention is given to activity supporting climate finance with and in the private sector. Accordingly the share of the private sector in EBRD climate finance is 65% for the period 2006-2017.

From 2006 to 2015, the EBRD investment numbers reflect only climate finance. With the start of the Green Economy Transition approach in 2016, a small portion of investment related to environmental projects are not related to climate mitigation or adaptation. In 2017, 94% of EBRD green finance was climate related in line with the joint MDB climate finance methodology.

Considering the magnitude of operations and financing involved, the EBRD has developed a specific Monitoring, Reporting and Verification (MRV) system to: (i) identify the environmental component of each project in accordance with a set of precise internal standards; (ii) quantify the financing which can be directly

related to the environmental project component; (iii) set up the baseline scenario to assess the impact of the project after implementation; and (iv) estimate the actual impact of its operations.

EBRD climate action

The EBRD operating model has the following features which are reflected in its overall activity, including its climate finance activity:

- adherence to the operating principles of transition impact, sound banking and additionality;
- a private sector development business model seeking to build markets and operators across economic sectors with around three quarters of annual investments in the private sector;
- combination of country and sector strategies focused to address major transition gaps with client-driven business approach working directly with larger clients and with over 130 commercial banks to reach out to SMEs and the residential sector;
- operational approach integrating effectively policy, investment projects and capacity building to establish synergies between public and private sectors for systemic impact; and
- fostering mobilisation of private sector finance.

Reflecting its mandate and its operating model, the EBRD is positioned at the confluence of current strategic thinking on climate action including:

- a fundamental focus on transition and systemic transformational change;
- an operational approach oriented to the mobilisation of private sector action and finance; and
- a business model including a range of blended finance instruments to address significant market failures, barriers to climate action and enhance private sector finance mobilisation**.**

In mitigation, major activity areas are energy efficiency and renewable energy including:

- industrial energy and resource efficiency;
- supply side energy efficiency including energy transmission networks;
- renewable energy development in the power and industrial sector;
- municipal infrastructure energy efficiency in energy, heating, transport and water networks; and
- transport energy efficiency, for example in the railways sector.

The EBRD regions of operations present significant challenges and opportunities for scaling-up energy efficiency financing contributing to decreasing high energy intensity levels in a number of countries. This is consistent with the IEA's focus on energy efficiency as the 'first fuel' and the determining role of energy efficiency in climate change mitigation particularly given the short timeframe highlighted by the recent IPCC 1.5 degree special report.

Over the last 10 years, the EBRD has invested in 130 renewable energy projects for a total capacity of close to 7 GW. In 2017 alone, EBRD financed nearly 1.4 GW, all in the private sector. 2017 was also the first year in which the EBRD did not finance any thermal generation and in which investment in solar energy was the largest. This is reflective of the transition of the energy sector in its countries operations and of the support the EBRD is providing to this transition.

Climate resilience (or climate change adaptation) is an important and growing component of EBRD climate action. The IPPC's 1.5 degree special report has highlighted the absolute imperative of urgent action by governments, businesses and communities to prepare for and cope with the reality of a changing and more variable climate. Climate resilience is a high priority for the EBRD given that the EBRD region contains some of the most climate-vulnerable countries in the world and some of the most water-stressed countries in the

world. Over the past decade EBRD has developed a comprehensive approach towards climate resilience with the goal of supporting market transformation that leads to more climate-resilient economies and societies.

Since 2011, the EBRD has financed more than 220 climate resilience investments with a total investment of over €5.5 billion including more than €1.5 billion of dedicated adaptation finance. Most of these investments has been delivered through climate-resilience infrastructure, reflecting the urgent need to build climate resilience into long-lived energy, transport, urban and water infrastructure systems. In addition the EBRD is also working to expand its climate resilience financing operations in corporate sectors, such as agribusiness, manufacturing and extractive industries, in which assets, operations and value chains are exposed to a range of physical climate risks, as well as expanding the delivery of climate resilience financing through financial intermediaries.

The EBRD GET climate resilience approach is increasingly systemic across banking operations. Since 2011, all concept-stage projects have been systematically screened for exposure to physical climate risks to identify climate-sensitive projects at an early stage so that climate resilience measures can be integrated into project design and delivery.

EBRD climate action benefits from its broad range of financing instruments which include: private non-sovereign loans; public non-sovereign loans; sovereign loans; direct equity investments; investment in equity funds; and guarantees. Reflecting the private sector orientation of the EBRD, the main financing instrument for climate projects is private non-sovereign lending. The EBRD has also developed over the past quarter century a strong expertise in public non-sovereign lending which is particularly relevant to the financing of cities climate projects.

Considering the significant market failures and barriers confronting climate action, and the need to mobilise private sector finance, the EBRD has developed a range of blended finance instruments combining concessional funds with its non-sovereign financing provided at market rates. The “smart” utilisation of concessional fund, is regulated by the application of guidelines ensuring that the development of market-based price signals is not undermined. When properly designed, concessional funding supports innovative environmental investment growth in key sectors and countries and enables the Bank to provide new products to its clients and develop new markets.

The EBRD issued its first Green Bond in 2010 and cumulatively 75 Green Bonds totalling €3.3 billion equivalent to end 2018.

Internal organisation

The development and implementation of EBRD climate action is based on an organisational structure which has allowed to scale-up its climate related activities in a significant manner over the past 10 years. Key elements of this structure include:

- the definition of a specific product range designed to respond to client demand across sectors and countries;
- tight integration of banking, technical, policy and capacity building work;
- specialised climate expertise in a central team charting strategic development and driving innovation;
- mainstreaming of climate activity across sector and country teams;
- cross-departmental collaboration including banking, policy, environmental and social, and legal departments to leverage full range of EBRD internal expertise and skills; and
- development of climate finance and policy capacity in Resident Offices in selected countries of operations.

Climate funding

External climate funds support a broad range of policy dialogue, technical analysis, project preparation and implementation and capacity building activities which have been essential to the achievement of systemic change and to providing a broad range benefits from carbon emissions reduction to water savings and reduced air pollution. The availability of grants and concessional funding has also been important to address challenging market failures and mitigate risk.

The EBRD is working closely with key global climate funds, including the Green Climate Fund (GCF), the Climate Investment Funds and the Global Environment Facility (GEF). The EBRD has benefited from allocation of over USD 1.4 billion to date from these global climate funds.

The EBRD has developed a range of strong climate-related partnerships with EU institutions. With over €270 million of contributions from 2010 to 2017, the EU is a major funding source supporting EBRD climate action in its countries of operations. EU facilities and instruments include, *inter alia*, EU Delegation funding, the Neighbourhood Investment Facility, the Western Balkans Investment Framework, the Investment Facility for Central Asia, the Instrument for Pre-Accession Assistance and the multi-donor Eastern Europe Energy Efficiency and Environment Partnership (E5P) fund.

The EBRD has received strong bilateral support for its climate financing from a number of bilateral sources including, for example, Austria, Canada, Germany, Italy, Japan, Korea, Luxembourg, Norway and the United Kingdom. Bilateral funding has been significant, amounting to over €180 million between 2010 and 2017, and has proven to be important to the success of the EBRD's climate business model.

Given the limited public and concessional finance available, countries are increasingly exploring the use of market/price-based mechanisms to finance the low carbon transition and to mobilise private capital. In recent years, emissions trading schemes and carbon taxation, the two main carbon pricing instruments, have become established in a number of countries. However, this global trend is both fragmented and uncoordinated. MDBs can play a relevant role by supporting a cooperative approach for the development of an emerging Article 6 marketplace, building on a strong track record of supporting the development of market-based mechanisms.

Partnerships and MDB collaboration

Considering the scale of the climate challenge and the range of resources and skills required, partnership is a core operating concept of EBRD climate action. The partnership approach of the EBRD can be structured in terms of the following dimensions:

- sectoral partnerships;
- policy partnerships at international, regional or national level;
- technical partnerships to address specific technical issues;
- funding partnerships either on bilateral or multilateral basis; and
- MDB and DFI partnerships including close and regular cooperation on climate matters across MDBs and cooperation with IDFC (International Development Finance Club).

Some partnerships can cover several dimensions. For example the partnership with the EU spans most of the dimensions above reflecting the significance of the EU climate policy agenda, its high level of technical expertise and the scope of its funding mechanisms. For over ten years, the MDBs have operated jointly a climate management group including regular senior level meetings and a set of technical working groups on specific topics. The purpose of this group is to work together to make MDBs effective catalysts for low-carbon and climate-resilient development. This cooperative approach operates on the basis of mutually

agreed principles for engagement and governance principles with a rotating chairmanship every six months.

Forward look

The EBRD has passed the mid-point of the implementation period of its current Strategic and Capital Framework (SCF) which runs from 2016 to 2020. The EBRD already demonstrated its capacity to achieve its ambitious 40% green finance target by 2020 with the GET finance ratio reaching 43% in 2017, of which 94% for climate finance. This provides a strong strategic and operational base for the EBRD to start the formulation of its next climate action objectives in the context of the Medium Term Directions scheduled to be formulated by the time of the next Annual Meeting of the EBRD in May 2019.

The EBRD has taken important decisions supporting its climate agenda. The recently approved Energy Sector Strategy states that the EBRD will no longer finance thermal coal mining or coal-fired electricity generation capacity. It will also not finance any upstream oil exploration and will not finance upstream oil development projects except in rare and exceptional circumstances where the projects reduce greenhouse gas emissions or flaring. Furthermore, the EBRD has expanded the application of its internal carbon pricing approach and will use the range of prices recommended by the High Level Commission on Carbon Prices.

Low-carbon roadmaps have a critical role to play in deploying private sector investments which are crucial to facilitate the shift to low-carbon economies and support countries in the implementation of their respective national climate change agenda. For example, in the corporate sector, the recent report by the Energy Transitions also emphasises the need to reduce and eventually eliminate emissions from “harder to-abate” sectors in heavy industry (in particular cement, steel and chemicals) and heavy-duty transport.

Given their relevance, the EBRD is considering to use low carbon pathways as an integrating framework for its climate action. On the basis of technical analysis, this framework would integrate for each major climate action area the EBRD work in policy, product development, technological innovation deployment, investment, climate funding mobilisation, blended finance instruments and partnerships.

At the 2017 One Planet Summit, the MDBs together with IDFC announced their vision to align financial flows with the Paris Agreement. At COP24 in Katowice, the MDBs presented a specific common approach to achieve alignment with the Paris Agreement. The methodological work for this approach is expected to be done by COP25 with implementation starting in 2020. This will result in the formulation of a common methodology for assessing and classifying the estimated climate risks associated to expected outcomes of MDBs activity.

In formulating its next strategic phase for climate action, the EBRD is considering the following elements:

- an enhanced climate policy agenda to scale up action and systemic impact driving market development and climate finance opportunities;
- continued contribution to global systemic initiatives such as TCFD implementation and the EU Technical Expert Group on Sustainable Finance;
- advancing the implementation of an effective low carbon strategy by:
    - maintaining a strong focus on energy efficiency across sectors;
    - decarbonising energy production through the expansion of renewable energy capacity;
    - based on an increasingly decarbonised power sector, pursue the electrification of the transport, industry and heat sectors.
- furthering the mainstreaming of climate resilience into EBRD’s investment operations through the development and application of guidance and standards for climate resilience;
- pursue the mainstreaming of climate action across its sustainable infrastructure financing;

- sustain product development and innovation to accelerate the scaling-up of activity and to achieve significant results in harder-to-abate sectors; and
- maintain strong climate funding mobilisation from multilateral and bilateral sources to scaling-up climate action as long as significant market failures persist.

In developing the next phase of its climate action, the EBRD takes into account the directions set in the G20 Hamburg Climate and Energy Action Plan for Growth. These include actions related to NDC preparation and implementation, to long-term low greenhouse gas emission development strategies, to the energy sector transition covering both energy efficiency and renewable energy, and enhancing climate resilience and adaptation. As mentioned above, the EBRD together with the MDBs are developing an approach to align their financial flows with the goals of the Paris Agreement. Furthermore, reflecting its mandate and operating model, the EBRD will continue to place a particular emphasis on developing climate action with the private sector. The EBRD looks forward to its continued contribution to the important work of the G20.

MDB CLIMATE ACTION:
THE EBRD PERSPECTIVE

PREPARED FOR THE
G20 CLIMATE SUSTAINABILITY WORKING GROUP

This report has been prepared at the invitation of Japan's Ministry of Foreign Affairs for the Climate Sustainability Working Group (CSWG) in the context of the G20 chaired by Japan in 2019. Reflecting the important role which Multilateral Development Banks are playing in scaling-up climate action, this report describes the climate-related activity of the European Bank for Reconstruction and Development (EBRD) covering the following topics:

- strategic context for climate action;
- EBRD climate finance track record and impact;
- EBRD climate activity including investment and policy work;
- internal organisation;
- climate funding;
- partnership and MDB collaboration; and
- forward look.

The content of the report provide an insight on the broad range of financing, policy and capacity building activity supporting the scaling-up of EBRD climate activity in line with the ambitious climate finance targets set in the run-up to COP21.

1. STRATEGIC CONTEXT

1.1 International context

The development of EBRD climate action takes place within an international context which includes:

- The international development and sustainability agenda with the adoption of the Sustainable Development Goals (SDGs) and the Paris Agreement.
- Governments as well as private sector and financing institutions across the world are discussing how to support the implementation of the SDGs and COP21 resolutions. The UN has identified the goals of sustainable and efficient use of resources in consumption and production, sustainable energy and

combating climate change as the three most transformational challenges on which the world at large needs to place a strong emphasis for action.

- The G20 Summit meeting in Hamburg reaffirmed the urgency for climate action with the final communiqué stating that 'we remain collectively committed to mitigate greenhouse gas emissions'. It also issued the G20 Hamburg Climate and Energy Action Plan for Growth which has provided a strong impulse for continued EBRD work on the transformation of energy systems, including through energy efficiency and renewable energy development. The EBRD has been working closely with the EU which continues to play a leading role on climate action. This includes the signing of a Memorandum of Understanding between the EU and the EBRD to reinforce cooperation in the fields of low carbon energy systems and energy efficiency both in terms of policy and investment.
- The EBRD responded in a significant manner to the request by the Ministers of Finance of France and Peru to define ambitious climate finance objectives in the run-up to COP21. This led to the formulation of the Green Economy Transition approach approved by the Board of Directors of the EBRD in 2015 with a high 2020 climate finance target ratio of 40%.
- The EBRD is an active participant in the One Planet Summit process including the development of a specific initiative to accelerate climate finance for cities (see section 3).
- The 1.5 degree IPCC special report issued in October 2018 shows that climate change is happening at an accelerating pace with increasingly severe effects and states that:
    - the world is not on track to limit temperature rises within the agreed limits;
    - there is very little time left with around 12 years to halve current emissions moving to net zero by 2050;
    - investments in low-carbon technology and energy efficiency need to increase by a factor of five to achieve this objective; and
    - the difference between 1.5 and 2 degrees has significant environmental impacts.
- At COP24, the EBRD jointly with the other MDBs, announced a specific work programme to align their financial flows with the Paris Agreement including a set of core principles, the components of this work, and a specific timeframe. This work will have a strong influence on the future development of MDB climate action.

The EBRD has provided over the years a range of inputs to G20 Working Groups with a particular focus on climate finance, energy efficiency and infrastructure. For example the EBRD contributed to the development of the G20 Energy Efficiency Finance Toolkit and to a G20 review of climate finance covering MDB activity. The EBRD has also been an active participant in the G20 Infrastructure Working Group since 2013 and in the Global Infrastructure Hub created under the Australian G20 Presidency in 2014.

1.2 EBRD regional context

EBRD countries of operations began their transition with a massive handicap, carrying the communist era's legacy of widespread environmental neglect and wasteful use of energy. In spite of significant capital stock transformation during the past 25 years and associated improvements, carbon intensity and other environmental standards are still generally poor. In the Southern and Eastern Mediterranean region, the situation is not very different, with the additional challenge of significant and worsening water scarcity. The inability of markets to internalise and monetise the cost of environmental damage have exacerbated this situation, and led to investments that have worsened the environmental impact of economic growth. Finally, the current and future impact of climate change – particularly in terms of water scarcity but also due to increasingly unpredictable and extreme weather patterns – have further exacerbated the environmental challenges faced by the countries of operations of the EBRD.

Accordingly, there is a need for fast and material changes in an economic space where markets are currently weak or non-existent. Externalities are large, global and intergenerational. Environmental impacts, particularly when referred to climate change, are cumulative and non-linear. Like other aspects of transition,

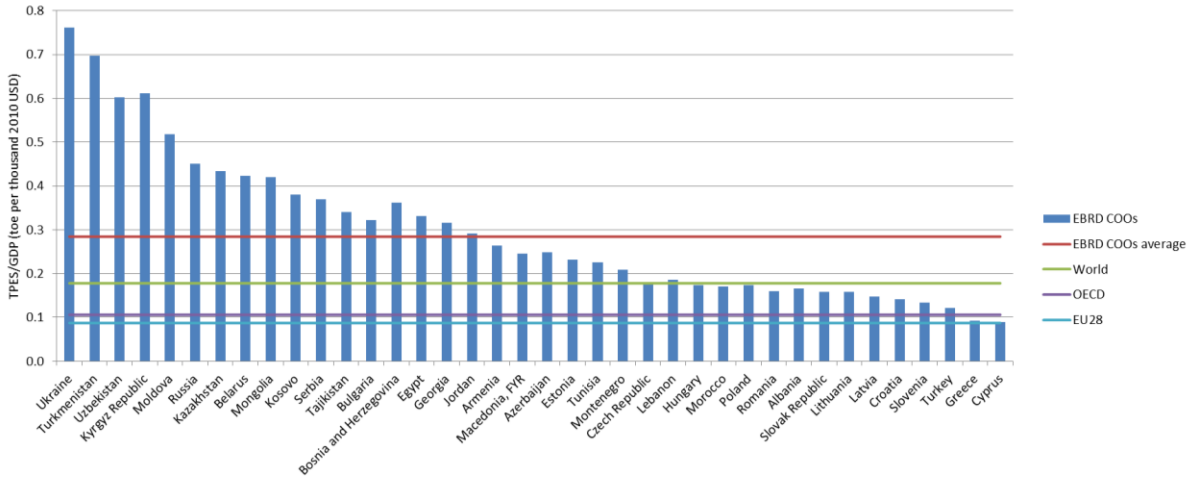
the shift to an environmentally sustainable economy is centred on the transformation of markets, behaviours, products and processes, adoption and deployment of innovation and new skills. Well-designed activities should aim to reduce global or local externalities and increase the efficiency with which markets allocate scarce resources. Given the significance of early mover, information, network and capital markets externalities, activities that help remove such failures and foster green innovation bring the market closer to efficiency.

A number of developing and developed countries have taken notice of the opportunity and are investing strongly in creating more sustainable and resilient economies, as the environmental benefits – and associated co-benefits – of such a transition are significant. In this new race for more innovative, resilient and sustainable economic systems, several countries of operations risk being left behind if both markets and governments fail to recognise and capture the opportunities offered by new technologies and business models.

Despite progress in energy efficiency and the use of renewable energy, the pan-European region, together with North America, still has the highest carbon emissions per capita in the world — over five times the limit which would stabilize global warming by 2050. Some countries of Eastern Europe, the Caucasus and Central Asia remain among the most carbon-intensive economies in the world. Fossil fuel subsidies are still high throughout the region and artificially low prices of electricity and heat result in a wasteful use of energy in some transition economies. Moreover, despite commitments to reverse the loss of biodiversity, ecosystems are under threat.

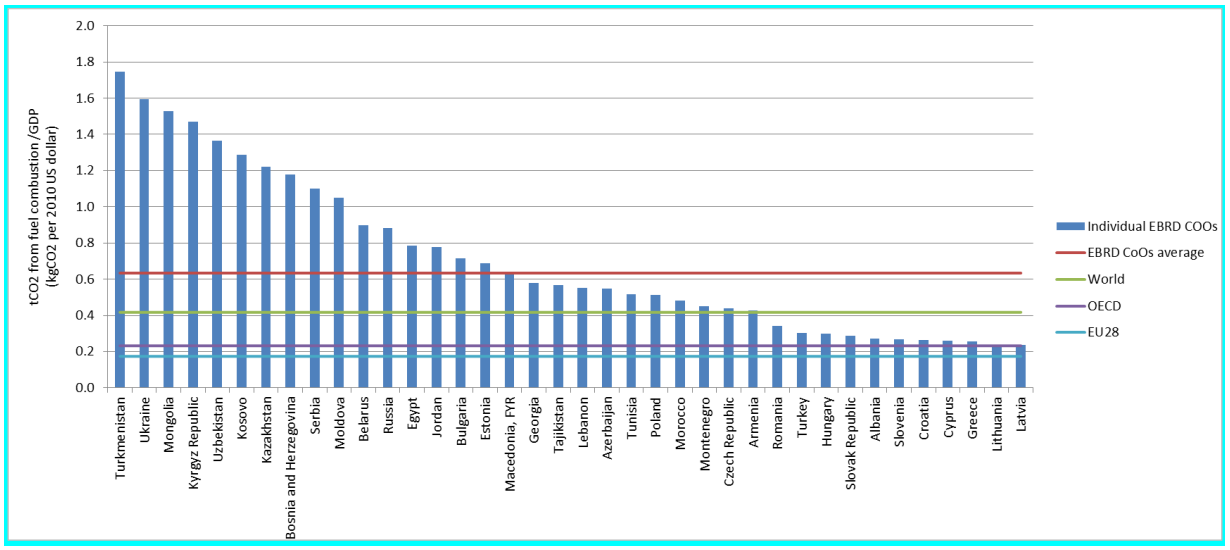
Figure 1 shows that a majority of EBRD countries of operations are well above the world average energy intensity average per unit of GDP (IEA, 2016) with countries such as Turkmenistan, Ukraine and Uzbekistan being over three times the world average.

Figure 1: Country energy intensity 2016



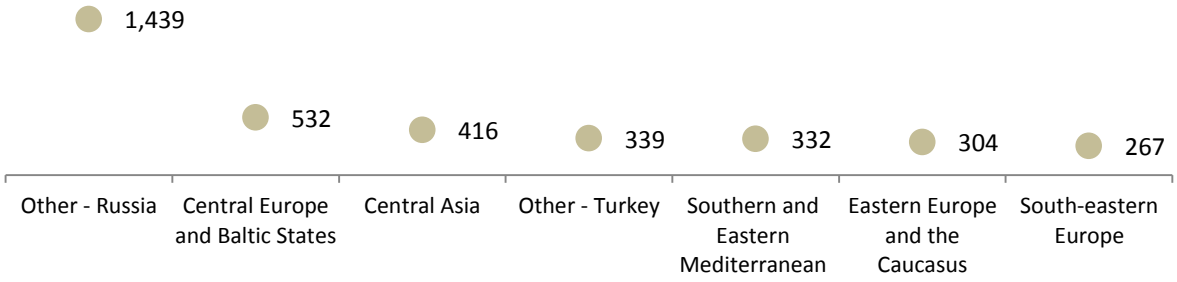
In terms of CO2 emissions per unit of GDP, Figure 2 shows that Mongolia, Turkmenistan and Ukraine have the highest carbon intensity across the EBRD countries of operations with intensities more than five times the world average. Most countries of operations of the EBRD are above the world average and all countries are above the EU average.

Figure 2: Carbon intensity per GDP 2016



In 2016, according to the IEA, the EBRD countries of operations accounted for 11% of global emissions from fuel consumption at 3.6 billion tCO2. Figure 3 shows that about 40% was in the Russian Federation and around 15% in Central Europe and the Baltic states.

Figure 3: CO2 emissions from fuel combustion (MtCO2) IEA 2016



According to the International Renewable Energy Agency, the renewable energy installed capacity (hydropower, solar and wind) in the EBRD regions of operations reached 173.5 GW in 2016 accounting for 8.7% of global installed capacity. The share of capacity relative to total capacity in EBRD countries of operations was 29% in the Russian Federation and around 20% each in Turkey and South Eastern Europe.

Figure 4: Renewable energy installed capacity by region (GW) IRENA 2016

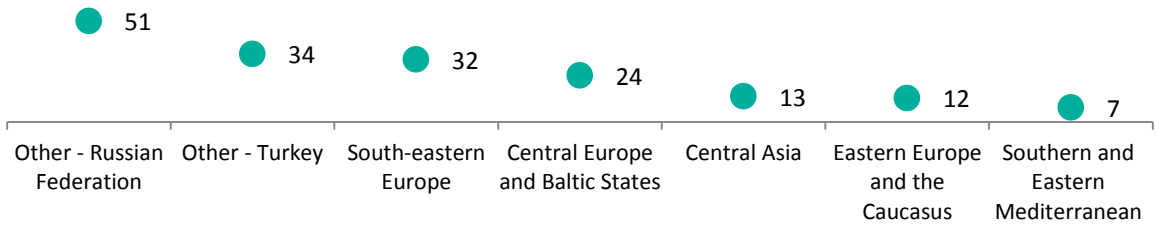
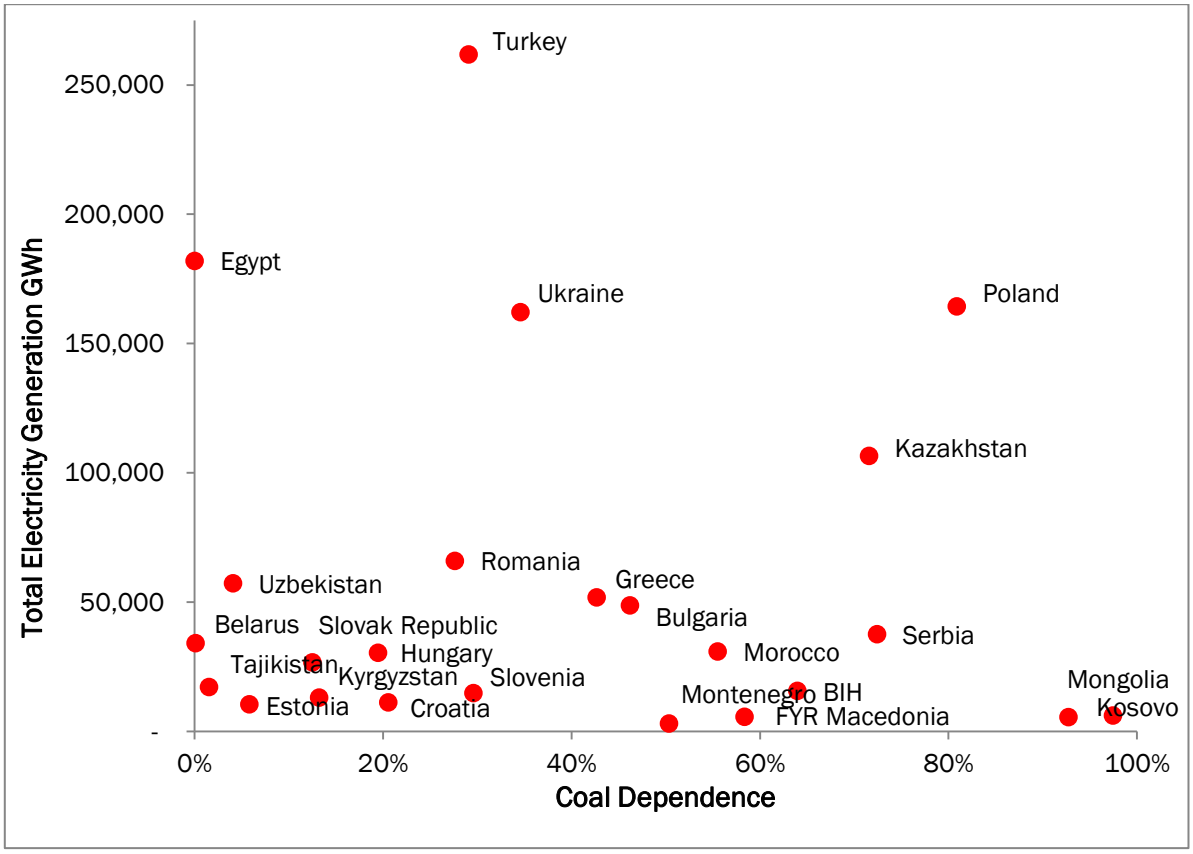


Figure 5 shows that 16 EBRD countries of operations rely on coal for over 20% of their electricity generation. This includes four of the largest six generators amongst EBRD countries of operations (Kazakhstan, Poland, Turkey and Ukraine). Excluding hydro-powered Albania, six Western Balkans countries rely on coal for more than 50% of their electricity production. Overall more than 25% of generation from EBRD countries of operations is coal-fired.

Figure 5: Coal share of electricity generation



The region has taken important steps to reduce environmental degradation with noticeable results in terms of improved urban air quality, the phase-out of ozone-depleting substances, a larger use of renewable sources of energy, improved water management and increased coverage of protected areas. Most Governments of the region are signatories or parties to the major global and regional environmental and

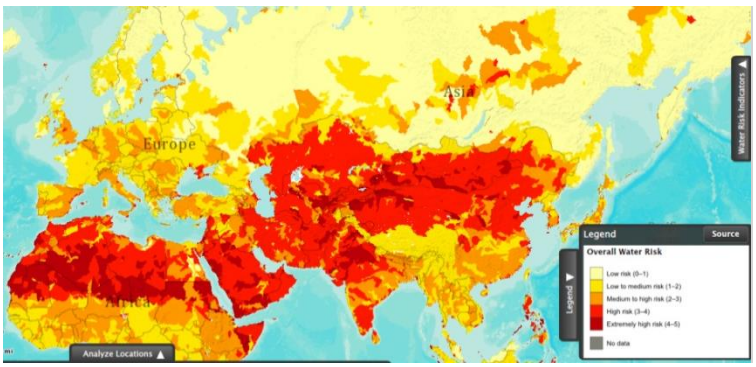
climate change conventions and protocols. Overall, tangible progress has been made in integrating the sustainable development dimension into policymaking in key sectors such as agriculture, transport and housing, reducing CO2 emissions, increasing energy efficiency and strengthening the sustainable management of forests.

However, Europe and Central Asia are still far from achieving sustainability. Growth in incomes has been associated with deterioration in key environmental indicators, so much so that the pan-European region has the highest ecological footprint compared with the rest of the world. Indeed, most countries in the region are running a bio-capacity deficit, i.e., they use more resources than they have in their territories[1].

From an energy perspective, while there has been an overall decoupling of economic growth from emissions in the region of operations, progress after 1995 has been uneven across countries. As a result, energy and CO2 intensity in the EBRD region remains on average over three times higher than in the European Union (EU).

From a water perspective, the EBRD region has some of the most water stressed countries in the world, specifically in the Southern and Eastern Mediterranean and Central Asia. Using the UNEP measure of water stress[2] the most highly water-stressed countries in the region are Uzbekistan (83% of total annual renewable water resource abstracted per year – corresponding to very extreme water stress), Egypt (80%), Jordan (58%), Tunisia (57%), Morocco (45%) and Turkmenistan (41%). The average water stress measure for the EBRD region as a whole is 21% whereas the EU average is around 15%. This is shown graphically in Figure 6.

Figure 6: Water Risk Indicator (World Resources Institute)



Various factors impede progress in the water sector, including inadequate regulatory and incentive frameworks (low tariffs and insufficient collection of payments for water services), low awareness across a wide range of stakeholders and lack of financial resources to extend or maintain the infrastructure. These increase vulnerability to climate change. Coherent financial and investment policies to address water supply and sanitation are often lacking, as are resources to sustain infrastructure at the local level and maintain existing centralised systems. In many countries, more than 30% of water is lost in transfers from supply sources to consumers, such as in open water canals. Access to quality and affordable water services is also an issue as an increasing number of persons are not able to afford the price of water at full cost recovery, especially if costs charged include collection and treatment of wastewater. Social measures often are ineffective and poorly targeted.

[1] Source: 'From Transition to Transformation Sustainable and Inclusive Development in Europe and Central Asia' coordinated by the United Nations Economic Commission for Europe and United Nations Development Programme

[2] UNEP measures water stress in terms of total water abstraction as a percentage of total annually renewable water resources, with a threshold of 20% indicating water stress and 40% indicating extreme water stress.

The regions' forest ecosystems are key to sustainable development, contributing to climate change mitigation through carbon storage in trees, and soil and harvested wood products and through providing a renewable construction material and source of energy. While overall forest area is increasing in the region, forest fragmentation is also increasing and is having a detrimental effect on important European habitats. The region's diverse marine and coastal ecosystems are also under threat, due in large part to overexploitation of fisheries. At the same time, the impact of climate change has become more obvious in recent years[3].

1.3 EBRD climate action strategic development

From its foundation in 1991, the EBRD integrated the environmental dimension into its core constitutive document. The Agreement Establishing the EBRD stipulated that "the Bank is committed to promoting environmentally sound and sustainable development in the full range of its investment and technical cooperation activities." Modern and well-functioning market economies should incorporate climate change and environmental considerations and externalities in decision making processes and turn them into a driver for growth and competitiveness. The promotion of environmentally sound and sustainable development therefore goes hand in hand with other aspects of the transition process. Accordingly, Energy efficiency was considered early on to be a key driver of improved resource efficiency and cost effectiveness.

Following the call from the G7 Summit in Gleneagles in 2005 for MDBs to step up their clean energy financing activity, the EBRD launched the Sustainable Energy Initiative (SEI) in 2006 with the aim of scaling up sustainable energy investments in its regions of operations, improving the business environment for sustainable investments and removing key barriers to market development. The SEI used the full range of the Bank's financial instruments to support sustainable energy projects with a focus on energy efficiency in the energy and corporate sectors, including the agribusiness and manufacturing and service sector, in the municipal sector and in the SME sector through financial intermediation.

In 2013, building on the success of the SEI, the EBRD launched the Sustainable Resource Initiative (SRI), an umbrella initiative which promoted efficiency and innovation in three areas vital for countries where the EBRD invests: energy, water and materials. The rapid growth in demand for resources, volatile prices, and growing environmental concerns including climate change, have made resource efficiency a priority for all countries.

In 2015, in the run-up to COP21, the EBRD adopted the Green Economy Transition (GET) approach which explicitly recognizes the "green" dimension of environmental sustainability as an integral quality of transition within a sustainable market economy, making plain that economic decisions should reflect the full value of resources to present and future generations. This recognition is in line with the aspirations of the international community, expressed in the United Nations Sustainable Development Goals and the Paris Accord on climate change. Beyond issues related to climate negotiations, there is increasing concern and priority to address issues related to urban congestion and airborne pollutants, water pollution and water scarcity, waste management and the circular economy[4].

The GET approach established a new level of scale-up for EBRD climate finance setting a target of 40% of total EBRD investment in climate finance by 2020. The target is to be reached through projects that advance the transition to a low-carbon, resilient economy and help prevent economies from being locked into a

[3] Source: 'From Transition to Transformation Sustainable and Inclusive Development in Europe and Central Asia' coordinated by the United Nations Economic Commission for Europe and United Nations Development Programme

[4] A *circular* economy is an alternative to a traditional *linear* economy (make, use, dispose) in which resources are used for as long as possible, extracting the maximum value from them whilst in use, then recovering and regenerating products and materials at the end of each service life.

carbon-intensive, polluting pathway that depletes natural assets. GET investments mitigate and/or build resilience to the effects of climate change and other forms of environmental degradation. This includes investments in energy efficiency, renewable energy, water and materials efficiency and climate change adaptation.

The EBRD is well recognised for its pioneering work in scaling-up energy efficiency financing and for its ability to work with the private sector in this area. The EBRD is also recognised for linking its strong operational delivery capacity with the promotion of local and national regulations that put climate change and environmental considerations at the heart of the economic process (e.g. through water and energy tariff reforms, carbon markets and elimination of fossil fuel subsidies).

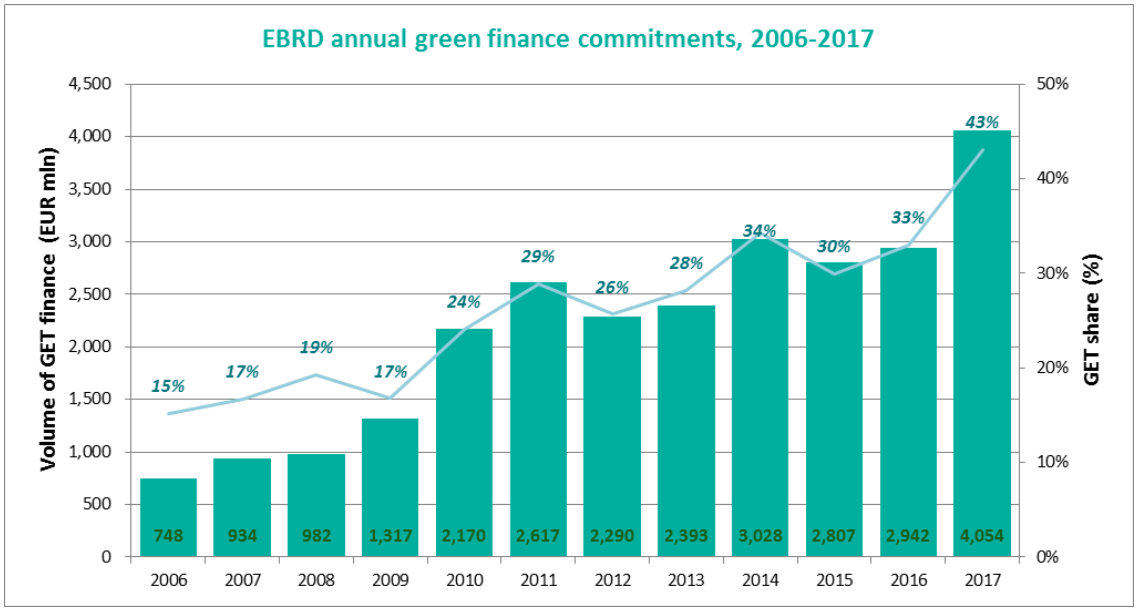
The overall climate action strategy reflected in the GET approach is now reflected in a range of sector strategies including in particular the new Energy Sector Strategy which has just been approved by the EBRD Board of Directors. Environmental sustainability and climate action are also major drivers in the formulation of the new Agribusiness sector strategy and of the upcoming Municipal and Environmental Infrastructure strategy.

2. EBRD CLIMATE FINANCE RESULTS AND IMPACT

2.1 Climate finance results

Since the launch of the SEI, cumulative EBRD climate finance reached €26 billion (USD 30 billion[5]) by end 2017 through 1,462 projects for a total project value of €148 billion (USD 170 billion). About three quarters of this investment was in energy efficiency and one quarter in renewable energy. Total carbon emissions reduction from these projects is estimated at 90 million tonnes per year. Total EBRD adaptation finance is estimated during this period at €1.4 billion (USD 1.6 billion). Reflecting its mandate and operating model, significant attention is given to activity supporting green finance with and in the private sector. Accordingly the share of the private sector in EBRD climate finance is 65% for the period 2006-2017.

Figure 7: EBRD green climate finance 2006-2017



[5] At €/USD$: 1.15

From 2006 to 2015, the EBRD investment numbers reflect only climate finance. With the start of the Green Economy Transition approach in 2016, a small portion of investment related to environmental projects are not related to climate mitigation or adaptation. In 2017, 94% of EBRD green finance was climate related in line with the joint MDB climate finance methodology.

Figure 7 shows the growth of EBRD climate finance activity with:

- EBRD climate finance rising from €748 million (USD 0.86 billion) in 2006 to €4.1 billion (USD 4.4 billion) in 2017; and
- the share of climate finance relative to total EBRD annual investment increasing from 15% to 40% in the same period. This reflects an increased mainstreaming of climate action across countries and sectors of operations of the EBRD.

In the run up to COP21 and the Paris Agreement, the EBRD announced an ambitious target with the objective to reach a green finance ratio of 40% of its total annual investment by 2020. The incremental green finance related to this target is significant as the achievement of such target assumes: (i) a systematic integration of sustainability in country strategies; (ii) appropriate resources for incremental transactions and technical skills; and (iii) continued access to multilateral and bilateral funds supporting policy and technical cooperation activities.

Reflecting both intensive work and the concurrence of a set of positive operational factors, this target was reached three years ahead of schedule with EBRD climate finance accounting for 40.4% of total EBRD investments in 2017. In 2018, EBRD green finance is estimated at €3.4 billion (USD 3.9 billion) equivalent to 36% of total annual investment and equal to the annual target set in the Board approved 2018 Business Plan of the EBRD.

In terms of activity composition for the period 2011 to 2017:

- Figure 8 shows that EBRD green climate finance has had a broad regional coverage with a balanced composition reflected in a:
    - 22% share in Turkey; and
    - around 14% each in Central Europe and Baltics, Eastern Europe and the Caucasus (including Ukraine), South-Eastern Europe and the Southern and Eastern Mediterranean; and
    - around 8% each in Central Asia and Russia.
- Figure 9 shows that EBRD green climate finance has also been balanced in relation to the composition of its mitigation activities with:
    - 29% of finance for corporate energy efficiency;
    - 20% for renewable energy; and
    - around 17% each for green financing facilities through local banks, cleaner energy production and municipal infrastructure energy efficiency.
- Figure 10 shows the share of emissions reductions estimated to be achieved by each mitigation activity with the largest emissions reduction shares expected from cleaner energy production and renewable energy (60%) and from corporate energy efficiency investments (20%).

Figure 8: Green climate finance by regions 2011-2017:

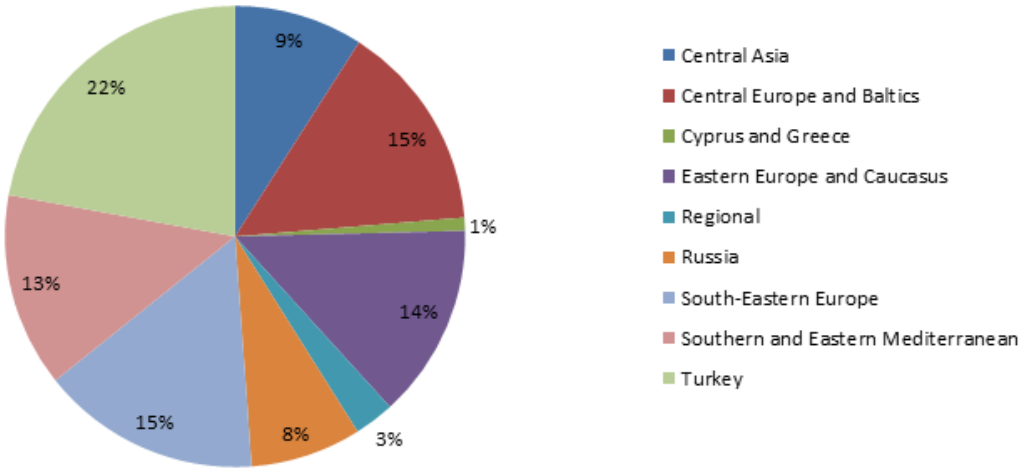


Figure 9: Finance by climate activity 2011-2017:

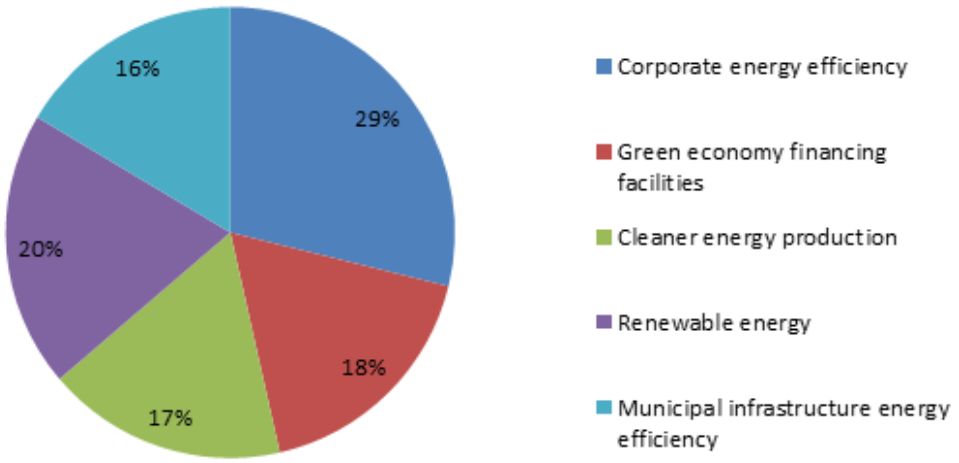
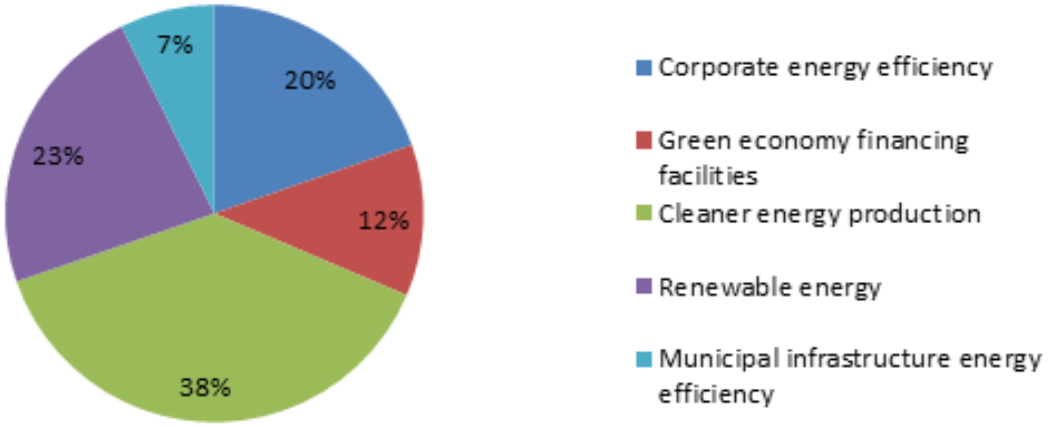


Figure 10: Emission reductions by climate activity 2011-2017



2.2 Impact

Considering the magnitude of operations and financing involved, the EBRD has developed a specific Monitoring, Reporting and Verification (MRV) system to: (i) identify the environmental component of each project in accordance with a set of precise internal standards; (ii) quantify the financing which can be directly related to the environmental project component; (iii) set up the baseline scenario to assess the impact of the project after implementation; and (iv) estimate the actual impact of its operations.

This MRV system feeds a dedicated management information system to track the overall impact of the EBRD's activity including carbon emission reduction, renewable energy production, energy and water savings and waste reduction. This MRV provides detailed information on the climate finance activity of the EBRD and is closely integrated in its operational data systems to ensure data integrity and consistency. The MRV system also provides detailed information to individual banking teams to support their results management in this area. Finally, the data produced by the MRV system contributes annually to the joint MDB climate finance report, building on the close collaboration across MDBs to define common standards and reporting practices (see section 6).

Based on this MRV system, cumulative results achieved since the launch of the Sustainable Energy Initiative are:

- Carbon emissions reduction 90 million tonnes
- Estimated energy savings 1.3 million TJ (equivalent to 26 million toe)
- Water savings 206.7 million cubic meters

The EBRD has published greenhouse gas emissions estimates for its signed projects since 2002. The calculation is based on estimated emission reductions from climate mitigation projects and on estimates of incremental emissions from projects that involve new building or expanding capacity. In 2017, net emissions were negative at an estimated -3.4 million tCO2e meaning that carbon emission reductions were higher than new incremental emissions. This is the twelfth consecutive year in which EBRD investments are forecast to deliver net emission reductions. Most of these reductions were driven in 2017 by investments in renewable energy, including multiple solar energy projects in Egypt, and by energy efficiency projects.

Furthermore, in terms of the Bank's operational footprint, the EBRD is committed to carbon neutrality and purchased the equivalent of 20,000 tCO2 in Gold Standard credits in 2017 to abate all institutional emissions. In addition, a Sustainability Working Group has been established to propose and evaluate other measures to further reduce the Bank's carbon footprint.

Tracking climate finance flows accurately has become a priority for the climate finance community, including donors, governments, researchers, NGOs and other stakeholders. In 2011 the MDBs joined forces to develop a methodology to track their climate finance flows in a consistent, comparable, and transparent manner. From 2016 to 2018 the EBRD is coordinated the joint MDB group on Climate Finance and was responsible for the preparation on the Joint MDB report on Climate Finance. Related to this role the EBRD is active in a number of working groups and expert areas, including:

- observer in the Technical Expert Group for Sustainable Finance of the European Commission, in particular on the implementation of the TCFD criteria in EU legislation;
- member of the committee of ISO14097 developing a Standard on Climate Finance;
- member of expert groups for developing criteria for the Climate Bond Initiative;
- leading on the topic of the development of metrics for assessment of physical climate risks and metrics for climate resilient benefits;

- member of technical working groups of the Central Banks and Supervisors Network for Greening of the Financial System (NGFS);and
- observer and active contributor to the UNFCCC, Standing Committee for Climate Finance.

3. EBRD CLIMATE ACTION

3.1 EBRD operating model

The EBRD operating model has the following features which are reflected in its overall activity, including its climate finance activity:

- adherence to the operating principles of transition impact, sound banking and additionality;
- a private sector development business model seeking to build markets and operators across economic sectors with around three quarters of annual investments in the private sector;
- combination of country and sector strategies focused to address major transition gaps with client-driven business approach working directly with larger clients and with over 130 commercial banks to reach out to SMEs and the residential sector;
- operational approach integrating effectively policy, investment projects and capacity building to establish synergies between public and private sectors for systemic impact; and
- fostering mobilisation of private sector finance.

Reflecting its mandate and its operating model, the EBRD is positioned at the confluence of current strategic thinking on climate action including:

- a fundamental focus on transition and systemic transformational change;
- an operational approach oriented to the mobilisation of private sector action and finance; and
- a business model including a range of blended finance instruments to address significant market failures, barriers to climate action and enhance private sector finance mobilisation**.**

On the policy front, the EBRD engages with governments and the private sector to help countries advance their transition agenda. Through its work at country level, the EBRD provides support to fulfil national Paris Agreement commitments through the development and implementation of Nationally Determined Contributions (NDCs). The EBRD also works with governments to create regulatory environments that promote investments in key areas such as green buildings, renewable energy, and green cities planning. By engaging with the private sector and industry associations, the EBRD also contributes to the formulation of environmental standards and low carbon and resilient sector pathways. (see section 3.3)

Reflecting its operating model, the EBRD finances its projects at market rates and under sound banking principles. The EBRD works with bilateral and multilateral donors to provide concessional financing and to accelerate the transition to low carbon and resilient economies through innovative financial instruments. Partners in the development and implementation of these blended finance instruments include the Green Climate Fund, the Climate Investment Funds, the European Union, the Global Environment Facility and bilateral donors (see section 5).

The EBRD provides a range of technical support services to its clients, including feasibility studies, energy, resource, and carbon audits. The EBRD also supports its clients at national, local and corporate levels to strengthen their climate governance and use innovative tools that accelerate market response to climate change. This work supports businesses in identifying climate-related market opportunities and investments, and in improving resilience to a changing and more variable climate.

3.2 Climate action investment components

Aiming to address the needs and priorities of its countries of operations and building on its business model and strong track-record, the EBRD further increased its activity and impact through its Green Economy Transition (GET) approach launched in 2015. This approach drives the scaling-up of EBRD climate financing activities and underpins the ambitious objective set in the run-up to COP21 to reach a green finance ratio of 40% of total EBRD investments by 2020 including significant mitigation and adaptation activities.

Mitigation

In mitigation, major activity areas are energy efficiency and renewable energy including:

- industrial energy and resource efficiency;
- supply side energy efficiency including energy transmission networks;
- renewable energy development in the power and industrial sector;
- municipal infrastructure energy efficiency in energy, heating, transport and water networks; and
- transport energy efficiency, for example in the railways sector.

As shown in section 1.2, the EBRD regions of operations present significant challenges and opportunities for scaling-up energy efficiency financing contributing to decreasing the high energy intensity levels in a number of countries. This is also consistent with the IEA's focus on energy efficiency as the 'first fuel' and the determining role of energy efficiency in climate change mitigation particularly given the short timeframe highlighted by the recent IPCC 1.5 degree special report.

Over the last 10 years, the EBRD has invested in 130 renewable energy projects for a total capacity of close to 7 GW. In 2017 alone, EBRD financed nearly 1.4 GW, all of it in the private sector. 2017 was also the first year in which the EBRD did not finance any thermal generation and in which investment in solar energy was the largest. This is reflective of the transition of the energy sector in its countries operations and of the support the EBRD is providing to this transition.

There are a number of technologies with significant climate mitigation and resilience benefits which are currently not deployed in the EBRD regions and specific high standard equipment and materials with a negligible market penetration. Accordingly, a focussed technology transfer approach to stimulate demand for such measures as well as to bring suppliers of such technologies and equipment into new markets is very important.

As an example, the market development for condensing boilers and LED lighting in Georgia from a baseline of no previous access shows what can be achieved within a reasonable timeframe. In order to drive such technology transfer, there is a need for capacity building and education of consumers, building linkages with suppliers and targeted incentives to change behaviour and mitigate the initial impact of higher cost measures and design. This leads to the development of new business areas involving transition impact through the introduction of innovative technologies.

This work builds on the experience acquired with the FINTECC (Finance and Technology Transfer Centre for Climate Change) Programme developed by the EBRD and supported by the Global Environment Facility (GEF) and the EBRD's Shareholder Special Fund (SSF). FINTECC offers a combination of policy dialogue, technical assistance and incentive grants to demonstrate the viability of technologies supporting climate change mitigation and adaptation. FINTECC is running successfully in early transition countries in Eastern Europe and Central Asia and in Southern and Eastern Mediterranean countries.

The scaling-up of EBRD climate finance activity builds upon the development of a range of specific climate mitigation business products including for example:

- *Green Economy Financing Facilities (GEFFs)* which combine technical support and credit lines to local financial institutions for on-lending to energy efficiency projects in commercial enterprises (SMEs and mid-caps) and buildings (commercial, residential and public).
- *Technology transfer platforms* such as *FINTECC* which complement direct financing of private sector companies with technical support and grant co-financing to introduce advanced technologies in their investment plans.
- *Green Cities Programme* providing a systematic approach to promoting low-carbon cities via a holistic assessment of gaps, opportunities and priorities for upgrading a city's infrastructure. The Board of Directors of the EBRD approved in the fourth quarter of 2018 a €700 million framework facility to expand activity in this area based on the successful implementation of the initial €250 million framework.
- *Energy, Resources or Carbon Audits* are used to enhance EBRD green investments by analysing the production facilities or built assets of companies with resource efficiency potential. Audits identify priority investments based on returns from energy efficiency or better use of resources. Recommended measures are often added-on to larger investment packages.
- *Industry-specific Low-carbon Pathways* aim to induce systemic change in a sector via a multi-stakeholder dialogue with representatives from both industry and government. The aim is to agree on plans or targets for adoption of technology upgrades applicable industry-wide. This dialogue-driven pathway fosters private sector competitiveness while contributing to national decarbonisation targets. Financing and technical assistance is made available for first-mover companies to upgrade their technology base.
- *Renewable Energy Market Accelerator Programmes* integrating project development, policy dialogue aimed at improving the regulatory environment and concessional co-financing to support accelerated mobilisation of early-moving developers.
- The *Near Zero Waste* concept is a multi-angled approach to promoting a circular economy, currently being piloted in Turkey. It combines commercial and concessional financing for waste minimisation and recycling technologies with broad technical assistance for awareness raising, regulatory upgrades and a pilot online materials marketplace where companies can trade unutilised materials.
- *Innovation Support* programmes providing technical support and grants to help companies with research, development and deployment related to technologies, business strategies and operational processes that bring about climate and environmental benefits.

Adaptation/Resilience

Climate resilience (or climate change adaptation) is an important and growing component of the EBRD climate action. The IPPC's 1.5 degree report highlighted the imperative of urgent action by governments, businesses and communities to prepare for and cope with the reality of a changing and more variable climate. Climate resilience is a high priority for the EBRD given that the EBRD region contains some of the most climate-vulnerable countries in the world (e.g. Tajikistan) and some of the most water-stressed countries in the world (e.g. Jordan, Uzbekistan). Over the past decade EBRD has developed a comprehensive approach towards climate resilience that builds on the EBRD's overall mandate by being strategic, practical and commercially-oriented with the ultimate goal of supporting market transformation that leads to more climate-resilient economies and societies.

Since 2011, the EBRD has financed more than 220 climate resilience investments with a total investment of over €5.5 billion including more than €1.5 billion of dedicated adaptation finance. Most of these investments have been delivered through climate-resilience infrastructure, reflecting the urgent need to build climate resilience into long-lived energy, transport, urban and water infrastructure systems. In addition the EBRD is also working to expand its climate resilience financing operations in corporate sectors, such as agribusiness, manufacturing and extractive industries, in which assets, operations and value chains are exposed to a range

of physical climate risks, as well as expanding the delivery of climate resilience financing through financial intermediaries.

The EBRD GET climate resilience approach is increasingly systemic across banking operations. Since 2011, all concept-stage projects have been systematically screened for exposure to physical climate risks to identify climate-sensitive projects at an early stage so that climate resilience measures can be integrated into project design and delivery. More recently, the Bank has developed and implemented a comprehensive climate resilience MRV approach (as part of its wider GET MRV approach) in which GET adaptation finance is systematically and consistently tracked, together with the specific and measurable climate resilience outcomes (or Climate Resilience Benefit) that each project is expected to deliver.

The EBRD has also pioneered innovative aspects of the climate resilience financing agenda, including by making a significant contribution towards advancing the physical climate angle of TCFD recommendations. This work, which culminated in a major international conference in May 2018, resulted in the development of new guidance on the inclusion of information on physical climate-related risks and opportunities in financial disclosures.

Financing instruments

EBRD climate action benefits from its broad range of financing instruments which include:

- private non-sovereign loans;
- public non-sovereign loans;
- sovereign loans;
- direct equity investments;
- investment in equity funds; and
- guarantees.

Reflecting the private sector orientation of the EBRD, the main financing instrument for climate projects is private non-sovereign lending. The EBRD has also developed since its creation in 1991 a strong expertise in public non-sovereign lending which is particularly relevant to the financing of cities climate projects. In contrast with sovereign lending approaches, the non-sovereign lending approach allows the EBRD to establish a direct relationship at city level and to promote cost recovery and financial sustainability. The sovereign lending instrument has been used in several cases to finance climate adaptation projects while direct equity, equity funds and guarantees have been used in specific cases. The EBRD has also strengthened the green finance capacity of its non-executive board members in companies in which it invests. A flexible approach to the determination of financing channels allows the EBRD to address a range of climate business opportunities through both private and public channels of transition impact. This is useful, for example, in the scaling up of buildings energy efficiency financing, a high priority objective with buildings being responsible for a large share of global emissions. Accordingly, the EBRD can use a range of public and private financing channels and capacity building tools to support innovative financial structures and higher risk taking.

Considering the significant market failures and barriers confronting climate action, and the need to mobilise private sector finance, the EBRD has developed a range of blended finance instruments combining concessional funds (see section 5) with its non-sovereign financing provided at market rates. The “smart” utilisation of concessional funds, including those that are available from multilateral and bilateral sources(see section 5) is regulated by the application of the *New Guidelines for the use of non-TC grants in EBRD operations* ensuring that the development of market-based price signals is not undermined. When properly designed, concessional funding supports innovative environmental investment growth in key sectors and countries and enables the Bank to provide new products to its clients and develop new markets.

The EBRD issued its first Green Bond in 2010 and cumulatively 75 green bonds totalling €3.3 billion equivalent to end 2018. The EBRD is increasingly playing a role as a Green Bond investor (direct and through fund structures), such as its USD 68.5 million participation in the Green Cornerstone Bond Fund in early 2018. The EBRD has been a member of the Executive Committee of the Green Bond Principles, currently co-chairing the Impact Reporting Working Group and participates in the formulation of other relevant Green Bond standards. To accelerate green bond issuances in the EBRD region, the EBRD has established a dedicated technical assistance programme.

BOX 1: EGYPT CEMENT INDUSTRY LOW-CARBON ROADMAP

Recognising the need to objectively assess the technologies available in the cement industry in Egypt, their energy saving and CO_2 mitigation potential, the required enabling policies and actions, as well as the financial and economic conditions necessary, the EBRD, the Egyptian Environmental Affairs Agency (EEAA) and the Chamber of Building Materials Industries / Cement Industry Division (CBMI), in collaboration with the Egypt Ministry of Trade and Industry (MTI) and the Cement Sustainability Initiative (CSI) of the World Business Council for Sustainable Development (WBCSD), joined together to develop the "Low-Carbon Roadmap for the Egyptian Cement Industry". This Roadmap was developed under the EBRD-funded project "Egypt: Technology and Policy Scoping for a Low-Carbon Egyptian Cement Industry"

The Roadmap analysis involved extensive stakeholder consultation and workshops, along with interviews of local cement companies and an analysis of the current economic and policy framework for the low-carbon development of Egypt's cement sector. The report identified the main challenges the industry faces in terms of technological shortcomings and emissions performance, while outlining the potential for improvements in energy performance and emissions reductions resulting in a set of key, economically attractive policy actions the industry can pursue in the next 5 to 10 years to improve its energy and emissions performance. These actions include developing an MRV system and database, introducing safe, environmental and legal disposals procedures for waste producers, including energy audit requirements in large cement company's operating permits with an assessment of energy efficiency improvement opportunities, and incentives for improved technology for by-pass dust treatment and recycling including water savings measures and solar energy.

To date, the roadmap has led to the formulation of two investments in local Egyptian cement companies featuring emissions savings and energy efficiency measures. Stemming from the Roadmap's recommendations, both firms are pursuing investments with a combination of alternative fuel use, installation of more energy efficient processes, and by-pass dust recycling.

These recommendations have been included in projects financed by the EBRD to cement companies in Egypt such as Arabian Cement, which involved an innovative technology for recycling by-pass waste material resulting in significant CO2 savings. These recommendations have been published in the EBRD report: "Policy *roadmap* for a Low-*Carbon* Egyptian Cement Industry".

https://www.ebrd.com/documents/climate-finance/egypt-roadmap-cement.pdf

BOX 2: EBRD GREEN ECONOMY FINANCING FACILITIES

EBRD's Green Economy Financing Facilities (GEFFs) are innovative lines of finance available through local financial institutions. Rather than simply providing a source of finance, they also help create green investment demand by informing businesses and retail clients of the business case for investing in higher performance technologies. The GEFF credit lines are complemented by a technical advisory package to assist partner financial institutions (PFIs) and their clients. EBRD GEFFs operate through a network of more than 130 local financial institutions across 26 countries. Over €4 billion worth of climate finance has already been invested in around 130,000 green technology upgrades.

Local financial institutions (banks, microfinance institutions, leasing companies) play a central role in scaling up and directing financing toward investments and assets that are necessary for transitioning to low-carbon, resilient economies globally, and achieving 'net zero' carbon emissions in the long term. They can originate new investment opportunities that are a business priority for their clients and can help them manage financial and increasingly, climate related risks. This can improve the quality and capacity of clients, ultimately enhancing client competitiveness.

Commercial banks (as well as other FIs) have a unique market position. They have in-depth market knowledge regarding local financial and economic sectors. They continually assess and understand the needs of their established client base. They provide a robust distribution network through their national branches and marketing partners. And they have a business model that is replicable and scalable, with the ability to substantially expand uptake within the focus sector or across sectors.

However, establishing green financial products is often constrained by several barriers. For example the technical knowledge to design and operationalise the product, including verifying impact, are generally perceived as high by commercially oriented financial institutions. And the amount of upfront costs required to assess and verify technology performance is generally underestimated since financial institutions rarely have the in-house expertise to assign or manage such resources.

Without GEFFs, the uptake of higher performance technologies (and services and practices) is generally restricted by an entrenched behaviour (resulting from information asymmetries and higher early-mover costs) that tends to favour the smaller upfront investment cost typically associated with lower performance technologies.

The GEFF technical advisory package helps to reduce market barriers by: establishing minimum performance criteria across multiple technology categories to make it easier to identify and select higher performance technologies; increasing PFI awareness of the multiple benefits associated with adopting higher performance technologies; demonstrating the cost-effectiveness of investing in green economy solutions for process modernisation, equipment upgrades and building refurbishment; illustrating the business case for using commercial sources of finance to gain access to solutions otherwise constrained by affordability. Delivery efficiency has been further enhanced with the launch of the technology selector identifying measures to improve standards and pre-selected equipment.

This cooperation with local financial institutions is crucial for reducing transaction costs for PFIs and their clients, helping to embed green financing into business operations and accelerating the adoption of higher performance technologies, services and practices. The EBRD GEFF model also plays an essential role in channelling climate funds to the real economy, thereby supporting sustainable growth.

BOX 3: EGYPT RENEWABLE ENERGY

Energy sector context

- Reliance on hydrocarbons for over 80% of generation
- Rapid demand growth driving electricity consumption above levels that domestic gas production can meet
- Share of renewables in electricity generation less than 10%
- Ambitious target of 20% of electricity generation from renewable energy, in particular solar and wind, by 2022 requiring 16 GW of new capacity.

Policy dialogue

- EBRD leading policy work on bankable contractual framework that attracts investors and is sustainable for public counterparts
- EBRD continues to assist Egypt to further transition from feed-in-tariff to competitive tenders

Investment

2017

- EBRD USD 500 million framework to support the development of private renewable projects under the Egyptian government's feed-in-tariff programme, aiming to stimulate private investment in over 4 GW of wind and solar power.
- Financing of the largest solar plant complex in Africa with total capacity of 1,800 MW, of which EBRD financing 750 MW
- EBRD mobilised USD 150 million from the Green Climate Fund and more than USD 400 million from other lenders.

2018

- Competitive tender in August 2018 resulted in the lowest solar tariff in any of EBRD country of operations at c.2.8 USDc/kWh.

Case study: Benban Solar Plant Complex

Highlights

- Largest solar plant complex in Africa with total capacity of 1,800 MW.
- Framework builds upon over two years' intensive policy dialogue, together with a number of Technical Cooperation initiatives.
- CO2 emission savings of 900,000 tonnes annually.

Key facts

- Borrowers: 16 SPVs registered in Egypt
- Sponsors: Scatec Solar, ACWA Power, EdF EN, El Sewedy Electric, Al Fanar, Infinity, ib Vogt, Access Power, EREN RE
- Capacity: 750 MW for 16 solar plants
- Project Size: USD 1,130 million for 16 solar plants
- EBRD loans: USD 368 million to 16 borrowers
- Co-Financier: GCF, IsDB, ICBC, MIGA, IsDB, ICD, FMO, Proparco
- Structure: Senior loans on limited recourse basis
- Offtaker: PPA with EETC

BOX 4: JORDAN RENEWABLE ENERGY

Sector context

- Jordan is a regional leader in renewable energy due to its favourable climate conditions and robust regulatory framework.
- Renewable energy reduces Jordan's exposure to the volatility of hydrocarbon prices, contributing to the stability of Jordan's energy costs.
- Renewable energy reached 10% of installed capacity in 2017, corresponding to over 600 MW of solar and wind capacity installed (growing from less than 1% in 2012).
- Jordanian authorities have increased the renewables target to 20% of total generation by 2020.

Policy dialogue

- Close engagement with authorities to define a reliable and transparent framework to attract investments.
- Regulatory framework set out in the 2010 provided the legal basis both for feed-in tariff projects and the tender mechanism that resulted in the first and second rounds of renewables projects.
- The most recent competitive tenders for renewable projects in Jordan have delivered power at highly competitive prices.
- EBRD is working with the government to prepare the network for more renewable capacity, including preparing the regulatory framework for battery storage.

Investment

- EBRD has played a key role in the growth of renewables in Jordan having financed a total of 10 renewable energy projects with total capacity of 388 MW and direct investment of €247 million (1st and 2nd Rounds).
- EBRD has further mobilised €279 million in co-financing with other IFIs and commercial banks.

Overview of projects financed in Jordan

Solar parks

- 8 projects signed
- €163 million EBRD financing
- 256 MW new capacity installed
- €174 million total co-financing:
  - IFIs: €160 million
  - Commercial banks: €14 milion
- Wind farms
- 2 projects signed
- €84 million EBRD financing
- 132 MW new capacity installed
- €105 million total co-financing:
  - IFIs: € 83 million
  - Commercial banks: €22 million

BOX 5: MONGOLIA RENEWABLE ENERGY

Sector context

- Mongolia relies on coal-dominated domestic plants and costly electricity imports from Russia, and is in urgent need of investments in its power sector.
- Ulaanbaatar is one of the most polluted capitals in the world due to:
  - coal that is typically burnt in old, highly-polluting combined heat and power plants located very close to urban centres; and
  - widespread use of poor quality domestic fuels to heat semi-permanent homes.
- Mongolia's target is to reach 20% of installed capacity from renewable energy by 2020 and 30% by 2030.

Policy dialogue

- EBRD played an instrumental role in the development of the renewable sector in Mongolia through: (i) assisting the government in drafting the first Renewable Energy law in 2007; and (ii) pioneering the financing of the first renewable plant, the landmark 50 MW Salkhit wind farm, in 2012 (both debt and equity).
- Looking ahead, EBRD is working with the government to support a transition to competitive auctions and greater renewable absorption capacity.

Investment

- EBRD financed the largest four new renewable projects for 185 MW of capacity, or 15% of total installed capacity of Mongolia and with € 338 million of total project cost.
- EBRD led successful partnerships with strong sponsors and IFIs such as Newcom, SoftBank, Engie, JICA, FMO, Triodos and EIB.

Overview of all projects financed in Mongolia

Wind farms

- 3 projects signed
- €87 million EBRD financing
- 155 MW new capacity installed
- €138 million total co-financing

Solar park

- 1 project signed
- € 9 million EBRD financing
- 30 MW new capacity installed
- € 19 million total co-financing:

3.3 Climate action policy work

Environmental goods and services are particularly exposed to different forms of market failures, in comparison with other categories of goods and services. In the absence of correct market signals, private agents will be deterred to invest in certain areas where returns are low. Innovation suffers from other market failures such as network, early mover, and capital market failures. These need to be overcome to allow transition to happen. Also, governments will generally be reluctant to approve and enforce an environmental regulation until they are convinced of the practical, technical and economic benefits. Reflecting the extent of these market failures, policy dialogue was recognised at an early stage as a core component of EBRD climate action. It is interesting to note that the following concepts which are core to climate action have a strong resonance with the EBRD mandate and operating model:

- first is the concept of "transition" to a low carbon economy which mirrors the transition mandate of the EBRD; and
- second is the strong emphasis on policy as a driver of transformational or systemic change including policies, regulations, incentives, international markets, legal infrastructure and trade and aid protocols.

To further enhance its transition impact by addressing market failures and improving the quality of the legal environment, the EBRD has developed a broad range of policy activities including:

- policy dialogue that contributes to an enabling environment for climate investments such as:
    - national action plans for sustainable energy, water and materials efficiency; and
    - sustainable resource related legislative and regulatory reform (ESCOs, buildings energy efficiency, carbon markets, water efficiency, waste management).
- expanding the coverage of policy dialogue to include:
    - national environmental action plans;
    - policy roadmaps and provision of market assessments to outline alternative development paths for specific industry sectors (such as cement, steel, CCS);
    - city-based action plans promoting environmental sustainability;
    - improvements in the legal environments targeted at specific sectors such as water management, pricing and full cost recovery, environmental performance, use of natural resources, resilience of ecosystems and land use; and
    - internalising externalities and levelling the playing field for clean technologies such as budgetary public expenditure activities (payment for environmental services) and regulatory activities (direct regulation, environmental taxes, user charges, and tradable permit systems).

Since 2009, the EBRD has engaged in over 330 climate policy activities supported by donor funding of € 77 million leading to the delivery of 11 primary legislations, 49 regulations, 18 technical reports, 27 strategic documents, 23 policy reviews, 3 Green City Action Plans (see Box 1), 13 market assessments, 2 fiscal/financial instruments, 11 Energy Performance Contract templates, 3 PPA templates, 13 handbook/guidelines and 25 capacity building and trainings.

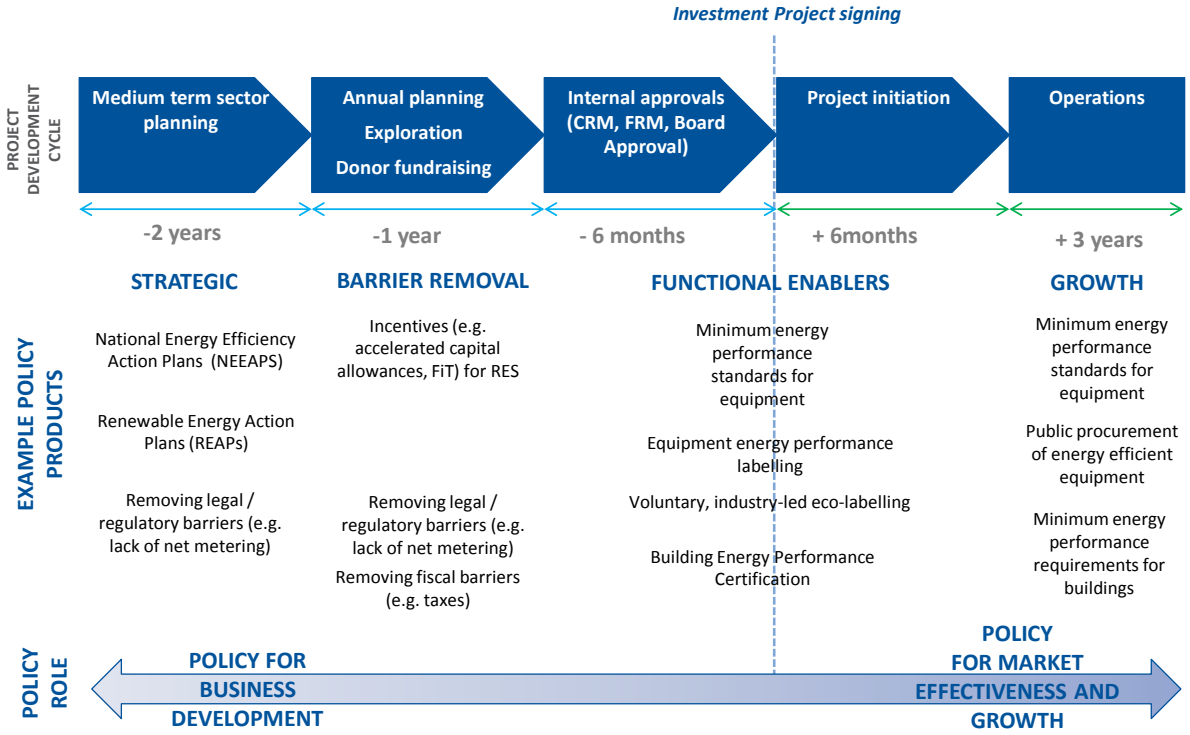
Examples of policy dialogue activity include:

- **Kazakhstan Renewables.** Between 2010 -2015 EBRD policy work of €1 million supported €139.2 million of investment (co-financed with USD 15 million from CTF) leading to 197 GWh per year electricity generation and estimated annual carbon emissions reduction of 180,000 tonnes.
- **Fiscal implications for Kazakhstan.** A changing dynamics in global energy markets, including the Paris Agreement, are likely to put pressure on fossil fuel rich countries by reducing their export revenues from the sale of oil and gas. In this context, the EBRD led an innovative analysis examining the fiscal impact of a range of global green scenarios in Kazakhstan. The report was developed in collaboration with the

Ministry of Finance and peer reviewed by World Bank, IMF and OECD experts, and proposes specific areas of reform for Kazakhstan, relevant to other emerging markets reliant on oil exports, including: (i) diversifying revenue sources including broader taxation policies; (ii) managing revenues from oil and gas more effectively e.g. a reformed wealth fund and clearer fiscal rules; (iii) provide incentives for economic development and removing distortive fossil fuel subsidies; (iv) manage public finances with a view to the medium and long term.

- **Western Balkans Regional Energy Efficiency Programme (REEP).** Since 2013, policy activities amounting to €5.3 million under REEP enabled delivery of €282 million of EBRD climate finance with estimated annual C02 emissions reduction from the disbursed investments in projects implemented to date amounting to 445,000 tonnes. The EU-funded policy work resulted in 28 policy outputs with a further 10 under preparation.
- **Peer to peer policy advocacy to policy makers for the introduction of renewable auctions in Ukraine**. The Ukrainian Parliament approved recently in first reading the draft law introducing auctions for renewable energies procurement. The EBRD worked in a policy advocacy and advisory role over the past two years on: (i) "peer review" of successive draft laws provided to the energy and fuel committee of the Ukrainian parliament; (ii) coordination amongst MDBs including consolidated set of comments to the final draft law; and (iii) careful calibration of investment approach.
- **Tajikistan Qairokkum Hydropower Plant.** Policy work supported a total of USD 88 million financing package to complete the rehabilitation of the Qairokkum HPP providing electricity to 500,000 people and including a package of climate resilience measures. The full rehabilitation will increase the plant's installed capacity from the current 126 MW to 174 MW.
- **Electricity Storage in Jordan.** In 2017 the EBRD commissioned a study to advise Jordanian authorities on setting up a regulatory framework for deploying electricity storage, one of the first in the world. The aim of the study was to support the penetration of significant shares of intermittent renewable energy sources in the Jordanian energy system, in a transparent and cost efficient way for Jordanian consumers. The report was concluded in July 2018 including inter alia: (i) recommendation on competitive procurement and private ownership of electricity storage; (ii) amendment of the General Electricity Law to introduce storage as a separate activity; and (iii) a new model Storage License document and proposed amendments to licensing arrangements to handle storage.
- **Liberalisation of trade in environmental goods and services: Opportunities for EBRD countries of operations.** Global trade in environmental goods has expanded rapidly in the last decade and is expected to continue growing. This policy work reviewed trade patterns over the last decade finding that EBRD countries of operations could do more to benefit from opportunities in this growing market. Liberalising imports would help countries with high green ambitions that are currently constrained by tariff barriers (e.g. Jordan, Morocco, Belarus and Armenia). Opportunities for increased production and exports are particularly relevant in EBRD countries with a strong manufacturing base, such as Tunisia, Turkey and Ukraine.

Figure 11: Policy investments sequence



BOX 6: GREEN CITY ACTION PLAN

Reflecting the key role which cities can play in setting the world on a low carbon pathway and in enhancing resilience to climate change, the EBRD has developed a focused action oriented approach to cities climate financing.

EBRD's Green Cities Framework provides a systematic approach for cities to identify and prioritise their most pressing sustainability challenges, and put forward a financially and politically feasible 5-year infrastructure investment plan to shift their development onto more sustainable pathways. This framework has been developed with the OECD and ICLEI, and has been shared with key city networks for climate action such as C40 and the Global Covenant of Mayors for Climate and Energy, the broadest global alliance of cities on this topic building on the commitment of over 9,000 cities and local governments from six continents.

The Framework's (GrCF) key tool is a Green City Action Plan, which aims to: (i) benchmark and identify environmental challenges covering carbon intensity, air and water quality, energy intensity, waste and transport; (b) identifying priority areas for environmental improvement (such as solid waste, waste water treatment plants and promotion of biomass); (c) outlining a broad plan of action together with indicative investments for a 5 year period. GCAPs link planning directly to investments by generating investment plans that address priority environmental issues / challenges. For example, in Tirana, Albania, the city's GCAP helped to identify and develop a recently signed investment in the City's water network that improves the system's resilience and service provision, while increasing its efficiency.

In order for investments to be eligible under the GrCF, cities must be willing to undertake an initial investment project with EBRD ('trigger project'), develop a Green City Action Plan (GCAP) and have a population greater than 100,000. The EBRD has made major financial commitments to the effective implementation of this approach by approving recently a further framework for €700 million building on the successful implementation of the first €250 million framework.

4. INTERNAL ORGANISATION

The development and implementation of EBRD climate action is based on an organisational structure which has allowed to scale-up the climate related activities of the Bank in a significant manner over the past 10 years (see section 2.1). Key elements of this structure include:

- the definition of a specific product range designed to respond to client demand across sectors and countries;
- tight integration of banking, technical, policy and capacity building work;
- specialised climate expertise in a central team charting strategic development and driving innovation;
- mainstreaming of climate activity across sector and country teams including green finance targets in scorecards;
- cross-departmental collaboration including banking, policy, environmental and social, and legal departments to leverage full range of EBRD internal expertise and skills; and
- development of climate finance and policy capacity in Resident Offices in selected countries of operations.

The central climate team (Energy Efficiency and Climate Change team) fulfils a range of functions within this strategic delivery structure including:

- business development with staff working directly with clients to identify and develop climate projects/project components;
- country level climate business market and thematic studies;
- management of energy/resource audits and technical due diligence;
- direct technical and financial analysis contribution to investment project preparation;
- project implementation support for achievement of climate project objectives;
- policy dialogue including formulation of policy work programme and delivery of specific policy results at national, sectoral, municipal or project level;
- climate finance mobilisation at programme/project levels and carbon finance support to individual projects; and
- integrated delivery of technical assistance package to climate finance through local financial intermediaries.

The Environmental and Social Department provides support and assurance functions for the operational delivery of sustainability financing activities of the EBRD, including:

- environmental and social appraisal of all projects to structure projects to meet the Bank's Environmental and Social Policy (ESP) and PRS and identify new environmental opportunities;
- monitoring project compliance and performance against the ESP and PRs, including delivery on Environmental Social Action Plan commitments;
- leading Environmental Fund management, currently comprising the Northern Dimension Environment Program and the Eastern Europe Energy Efficiency and Environment fund;
- assurance of compliance of green projects with established environmental and sustainability criteria; and
- production of annual EBRD Sustainability Report.

5. CLIMATE FUNDING

Considering the extent and impact of market failures in the environmental area, the EBRD can act in two major ways. The first is to pursue an active policy dialogue and reform agenda to address these market

failures as described in section 3.3. This involves working with governments to improve the policy and legal environments, enabling markets to estimate costs and benefits correctly and hence creating a level playing field across technologies and practices. This should involve the elimination of subsidies to fossil fuels and consideration of carbon pricing measures either through market mechanisms or through a tax.

The second is to use grants and other economic incentives to play a compensating role, recognising that the reforms needed for the resolution of these market failures may take long and require financial support to be effective. In this case, EBRD ensures that incentives are only used if they are an efficient way of correcting markets to ensure a level playing field.

The formulation and implementation of specific climate funding mobilisation strategies to support the development of the SEI and SRI have been a key determinant of the strong results achieved under these initiatives. The internal report on *Donor Climate Finance and EBRD Action: Building on Strong Partnerships* describes the determining role of external funds in supporting the transition impact and scaling-up of EBRD climate financing. The report shows that the environmental and climate area has been a major focus of donor support to the EBRD .

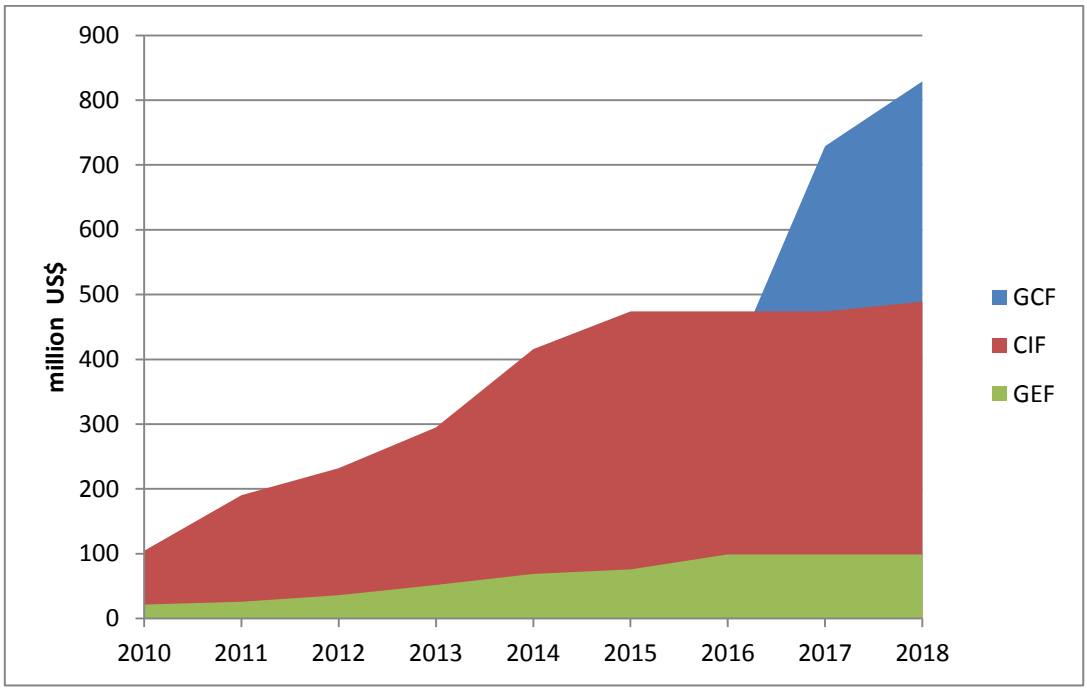
External funds support a broad range of policy dialogue, technical analysis, project preparation and implementation and capacity building activities which have been essential to the achievement of systemic change and to providing a broad range benefits from carbon emissions reduction to water savings and reduced air pollution. The availability of grants and concessional funding has also been important to address challenging market failures and mitigate risk. Building on the strong relationships established with bilateral donors, with the EU and with multilateral funds, the EBRD pursues an active funding mobilisation approach to expand transformational impact and scale up sustainability financing.

With climate change occurring earlier than expected, there is increased urgency in transitioning to low-carbon and climate-resilient economies. This transition requires a systemic and transformative shift, and as such it must be coupled with unprecedented policy actions and financial investments. The Global Commission on the Economy and Climate estimates that the world needs to invest up to USD 6 trillion a year in climate mitigation and adaptation, with at least 60 per cent of this amount coming from the private sector. Policy interventions such as removing fossil fuel subsidies, and the introduction of carbon pricing, are vital to helping countries transition to low-carbon economies. Moreover, to achieve this transformational shift, there needs to be extensive financial investments. Public funding can help to resolve barriers to policy reform and investments at scale for emissions-reduction and climate resilience projects. These policy reforms and demonstration effects are essential to involve and mobilise private finance.

In support of its climate action, including the Green Economic Transition approach and its market transition / private sector focus, the EBRD is working closely with key global climate funds, including the Green Climate Fund (GCF) Climate Investment Funds (including the Clean Technology Fund) (CIF/CTF) and the Global Environment Facility (GEF). The EBRD has raised over USD 1.4 billion to date from these global climate funds. In addition the EBRD works closely with the EU and bilateral donors in channelling public funding for climate action.

The co-operation with these global and bilateral climate funds has been key for the EBRD to leverage-up its climate finance, whilst working on capacity building in the countries of operations. The value of these funds is that they support an integrated package of investments and policy dialogue. In particular the GCF and CTF scale of funding enables MDBs, like the EBRD, to leverage their investments towards growing markets for energy efficiency, renewable energy and climate resilience. The combined impact of climate funds and MDB finance then provides also a rationale to engage for countries and sectors on the policy reforms required for transformational impacts.

Figure 12: Cumulative climate funds approvals for EBRD projects



Climate Funds

Green Climate Fund (GCF). As mandated by the parties to the UNFCCC, the GCF is planned to become the main global fund for climate action in developing countries. The EBRD experience with the GCF has been positive overall with 5 projects under implementation and 1 Board approved project. Including the recently approved Green Cities Facility, the total EBRD portfolio of GCF funding reached USD 829 million by end 2017. Projects range from mitigation (renewable energy in Egypt and Kazakhstan), regional cross-cutting programmes (Green Energy Financing Facilities and Green Cities Facility) to adaptation projects in Morocco and Tajikistan.

Table 1: GCF Board approved EBRD projects

Funding Proposal	Date of approval	Date of FAA signature	Effectiveness date	GCF Funding (in million USD)
FP039 Egypt Renewable Energy Financing Framework	Apr 2017	16/08/2017	08/09/2017	154.70
FP043 Saïss Water Conservation Project	Apr 2017	03/11/2017	31/01/2018	36.70
FP025 Sustainable Energy Financing Facilities	Oct 2016	06/11/2017	02/02/2018	378.00
FP040 Tajikistan: Scaling Up Hydropower Sector Climate Resilience	Apr 2017	12/01/2018	11/04/2018	50.00
FP047 Kazakhstan Renewables Framework	Oct 2017	30/03/2018	08/05/2018	110.00
FP086 Green Cities Facility	Oct 2018	by29/04/2019	by28/07/2019	100.00
TOTAL				**829.40**

Global Environment Facility. The GEF plays an important role for piloting new concepts and the opportunity to align climate action with other co-benefits. Since 2014, the EBRD has benefited from GEF grant co-financing for technical cooperation and concessional finance to support the Bank's efforts in addressing climate change and environmental degradation. The total value of funds provided to the EBRD reached USD 135 million, including funding from the Special Climate Change Fund (SCCF). As an MDB, the EBRD provides a "one-stop-shop" of policy engagement, technical assistance and financing at a commercial scale, and invests predominantly in the private sector to catalyse markets and promote innovation. Going forward, the EBRD intends to work with the GEF on its increased focus on catalysing changes in key global systems, and leveraging multi-stakeholder coalitions in alignment with countries' demand and commitment under the multilateral environmental agreements for which the GEF serves as financial mechanism.

Climate Investment Funds (CIF/CTF). The CIF/CTF play a key role in mobilising MDBs on climate action. The strong MDB climate finance results reflected in successive Joint MDB Climate Finance Reports are in part the result of CIF/CTF support. In particular, the CIF/CTF has proven to work operationally, enabling timely quick decision-making together with a risk profile well understood by the MDBs. In view of the urgency for climate action, and the scale of effort needed, the CIF/CTF remain an instrumental channel for accelerated deployment. Furthermore the CIF/CTF can reach out to Middle-Income Countries with programmes at scale, which is currently not possible under the other climate funds. In the case of the EBRD, this includes countries such as Belarus, Turkey and Ukraine.

The CIF/CTF can also provide the development and testing grounds for MDB initiatives with broad systemic impacts. This includes for example the testing at scale of the deployment of blended finance structures as the CIF/CTF can be agile in the uptake of these new concepts, and therefore nurture innovation to enhance both leverage and scale. This ability could be relevant when considering the operationalisation and utilisation of the co-operative mechanisms under article 6 of the Paris Agreement. The CIF/CTF could also be a useful platform to implement the Paris Alignment approach being developed by the MDBs (see section 7). Regardless of the CIF/CTF further developments, current lessons learned will be of use for other climate-related funds.

European Union. The European Union (EU) is at the forefront of international climate action. Its recent long-term strategy for the reduction of greenhouse gas emissions confirms its commitment to maintain this leading role and presents a vision to achieve climate neutrality by 2050. The EU is a key driver of climate policy, legislation and investment not just within its Member States but also in its neighbouring regions and beyond.

The EBRD has developed a range of strong climate-related partnerships with EU institutions. With over €270 million of contributions from 2010 to 2017, the EU is a major funding source supporting EBRD climate action in its countries of operations. EU facilities and instruments include, *inter alia*, EU Delegation funding, the Neighbourhood Investment Facility, the Western Balkans Investment Framework, the Investment Facility for Central Asia, the Instrument for Pre-Accession Assistance and the multi-donor Eastern Europe Energy Efficiency and Environment Partnership (E5P) fund.

Beyond funding, collaboration between the EBRD and the EU also includes ground-breaking systemic initiatives such as the work of the Technical Expert Group on Sustainable Finance. The EBRD and the EU also cooperate in supporting government policy development; for example, the EBRD is part of the EU-IFI High-Level Initiative on Energy Efficiency which is driving policy improvements in countries neighbouring the EU with the EU being a major funder of EBRD policy dialogue activities.

The EU-EBRD partnership has achieved significant results so far. For example, the Western Balkans Regional Energy Efficiency Programme (REEP and REEP Plus), where the EU donor contribution is the single largest at over €44 million, has enabled over €300 million in EBRD financing for: energy efficiency investments in

different market segments – buildings, public sector, businesses; renewable energy investments; and a number of climate policy results across the six countries in the region.

Other examples of the wide-ranging EU-EBRD collaboration include €27 million EU funding alongside other donor support to develop a sustainable energy market in Turkey - including MidSEFF, a €1.5 billion financing facility targeting mid-sized sustainable energy projects and €4 million to support private sector technology transfer and technology innovation, and associated policy dialogue in Ukraine.

The EBRD is working closely with the EU to expand this collaboration. In 2018 the EU announced the €38 billion InvestEU Fund, its new investment instrument which from 2021 will provide EU guarantees to mobilise public and private financing – with a substantial amount expected for climate and environment priorities. The EBRD is already working with the EU to use guarantees for climate action in the EU neighbourhood regions. Under the EU External Investment Plan, over €200 million of EU guarantees with over €8.5 million of associated technical assistance funding has recently been approved to support EBRD projects related to renewable energy, sustainable logistics, energy efficiency and sustainable cities. It is expected that this facility will be substantially expanded over the next Multi-Annual Financial Framework.

Bilateral Donor Funding

The EBRD has received strong bilateral support for its climate action from a number of bilateral sources including, for example, Austria, Canada, Germany, Italy, Japan, Korea, Norway, and the United Kingdom.

Bilateral funding has been significant, amounting to over €180 million between 2010 and 2017, and has proven to be important to the success of the EBRD's climate business model. Significant bilateral funding has been provided to the EBRD in the form of grants for technical assistance; investment grants and concessional co-financing have also been used, and it is envisaged that bilateral concessional guarantees will also be used in future. It is hoped that bilateral funding will increase in order to help achieve the step-change in climate financing required to meet the scale of action required over the coming years.

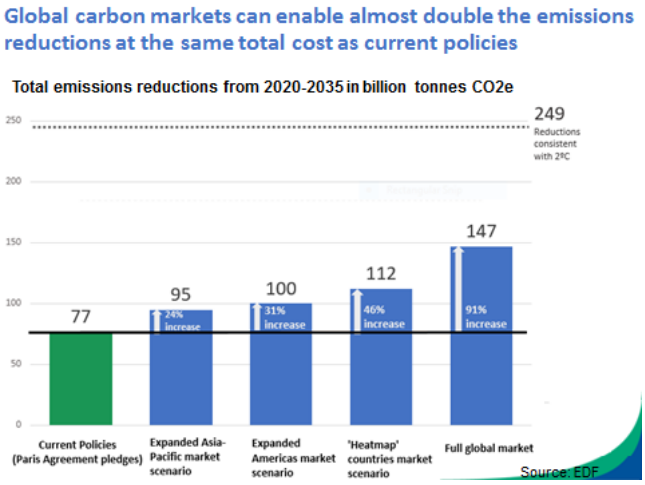
Japan, for example, has provided over €11.5 million of donor funding for climate action, covering a range of countries and sectors from renewable energy projects in Ukraine to building capacity for water management in the mining sector in Mongolia. Similarly, the UK has been a long standing donor to the EBRD, prioritising support to the industrial sector, and more recently contributing to a climate resilience capacity building programme that supported the EBRD's investment in the rehabilitation of the Qairokkum Hydro Power Plant in Tajikistan. Italy via the Central European Initiative has funded a range of climate activities across the EBRD region, with a key focus on supporting green investments in the private sector across the Western Balkans and Ukraine.

Carbon markets

Given the limited public and concessional finance available, countries are increasingly exploring the use of market/price-based mechanisms to finance the low carbon transition and to mobilise private capital. In recent years, emissions trading schemes and carbon taxation, the two main carbon pricing instruments, have become established in a number of countries. This global trend is both fragmented and uncoordinated. The Paris Agreement provides climate markets with a much needed renewed basis for support by enabling Parties to voluntarily cooperate in achieving their NDCs through internationally transferred mitigation outcomes (ITMOs) under Article 6. However, there are still many regions and industry sectors in which emitters of greenhouse gases are not required to cover the costs of the damage caused by their emissions. And even where greenhouse gases are subject to carbon pricing, this does not always lead to the desired investment in climate-friendly, sustainable products and services. Accordingly, there is a pressing need to improve both the design and implementation of emissions trading schemes and carbon taxation programmes.

Recent estimates by the World Bank suggest that comprehensive linking arrangements could reduce the global costs of implementing NDCs by a third by 2030, and halve the costs of the world's decarbonisation efforts by 2050. This is corroborated by studies by the Environmental Defense Fund.

Figure 13: Carbon market coverage and emissions reduction



Key decisions on Article 6 as part of the Paris Agreement rulebook are now scheduled for COP25 in Chile in 2019. A number of issues related to the implementation of market/price-based mechanisms remain to be addressed such as overcoming competitive concerns, building stakeholder acceptance, and developing the required infrastructure and legal framework.

MDBs can play a relevant role by supporting a cooperative approach for the development of an emerging Article 6 marketplace, building on a strong track record of support to the development of market-based mechanisms. MDBs can foster innovation to increase levels of confidence and reduce transaction costs in market-based approaches to climate action including piloting the infrastructure for comparability and transfer of assets under Article 6, developing climate finance structures that align concessional finance with carbon pricing schemes, and enhancing carbon price value through co-benefit consideration. Non-market mechanisms are also being pursued to stimulate private-sector investment in adaptation.

The EBRD has an established experience with carbon markets since 2006 including the operation of two carbon funds during the Kyoto Protocol first commitment period, and successful Green Investment Schemes (GIS) developed and implemented in Poland and Slovakia. The EBRD carbon market experience, particularly its methodologies and MRV, were seminal in building the EBRD tracking of greenhouse gas emission reduction results and climate finance impact. In anticipation of the further deployment of carbon pricing schemes, including domestic carbon markets and further international co-operation under the Paris Agreement, the EBRD is undertaking a number of more policy oriented initiatives. This includes:

- co-operation with other MDBs on Article 6 of the Paris Agreement;
- a market study on Article 6, domestic carbon market development as a transformational change component of the GCF renewable energy framework in Kazakhstan; and
- co-operation with EU members states in the Effort Sharing Regulation and the interaction between the voluntary carbon market and the global aviation carbon market (CORSIA) in Turkey.

The development of an effective international carbon market is an area where joint MDB work can be particularly beneficial covering the following topics:

- *Share knowledge and lessons learned through technical and analytical work***.** Given the general uncertainties around how markets will develop under Paris, this work-stream seeks to provide an evidence-based case for key policymakers and stakeholders to engage in Article 6.
- *Inform the regulatory framework for market instruments under the Paris Agreement***.** Given the urgency to finalize the Article 6 text under the Paris Rulebook by COP25, this work-stream seeks to map options of different approaches, and test innovative frameworks that could potentially support the operationalization of these approaches.
- *Pilot the creation of an initial supply of Mitigation Outcomes (MOs) from operations with climate mitigation benefits***.** The purpose of this work-stream is to develop a consensus-driven approach for operationalizing Article 6 by collaboratively piloting the creation of MOs through MDB operations with high mitigation potential.
- *Seek to generate initial demand for MOs and create financial products to leverage private capital***.** The purpose of this work-stream is to stimulate the initial demand for international climate markets, and explore the use of tailored financial instruments to reduce the risks of transferring MOs.
- *Explore and pilot non-market mechanisms under Article 6.8***.** The framework for non-market approaches is not well defined but could encompass a range of activities complementing market-based actions and reach countries and sectors which are not otherwise easily accessible. The Adaptation Benefit Mechanism developed by the African Development Bank is one example of such actions.

6. PARTNERSHIPS AND MDB COLLABORATION

Considering the scale of the climate challenge and the range of resources and skills required, partnership is a core operating concept of EBRD climate action. The partnership approach of the EBRD can be structured in terms of the following dimensions:

- **sectoral partnerships** including for example sector ministries and sector specific private sector associations in countries of operations, leading global and regional private corporates with specific sector expertise, sector-focused international organisations, think tanks and NGOs. Selected examples include: the partnership with the World Green Building Council (Europe and MENA) to promote best industry practice on green buildings including in relation to the deployment of financial instruments (e.g. green mortgages); the European Facility Management Network to promote best practice in building management; the partnership with agribusiness operators in Ukraine and the Ukraine Biomass Association (UABio) to develop efficient use of biomass residues in the agribusiness value chains; and, further to the work described in the section below, the partnership with the IEA on developing global low carbon technology roadmaps: (i) for the steel sector (together with global and regional leading steel companies and the World Steel Association); and (ii) for the fertilisers industry (together with the International Fertilizer Industry Association-IFA). Reflecting a strong focus on supporting climate action at city level, the EBRD also works closely with the Global Covenant of Mayors on Energy and Climate (GCOM) and C40 to accelerate finance in this area.
- **policy partnerships** at international, regional or national level including for example the Network for Greening the Financial System (central banks), the Global Commission on the Economy and Climate and, at national level the partnership with Uzbekenergo (the state owned, vertically integrated energy enterprise managing all energy assets) to develop a low carbon roadmap for the electricity sector in Uzbekistan. Further to the cooperation described in section 5, the partnership with the EU includes: (i) with DG Environment, designing policies for integrating circular economy in the construction industry; and (ii) with DG Research and Innovation, Circular Economy Financing.

- **technical partnerships** to address specific technical issues with examples such as the cooperation with the Climate Bonds Initiative to develop standards and requirements for green bonds in different sectors including buildings, climate resilience, electricity grids; participation to the development of a new standard on Climate Finance (ISO 14097); partnership with Naftogaz (the state owned, vertically integrated natural gas enterprise managing all gas assets in the country) and the Ministry of Environment in Ukraine for the introduction of measures to monitor and reduce methane fugitive emissions from the gas transmission and distribution network.
- **funding partnerships** either on bilateral or multilateral basis (see section 5) ; and
- **MDB and DFI partnerships** including close and regular cooperation on climate matters across MDBs and cooperation with IDFC (International Development Finance Club).

Some partnerships can cover several dimensions. For example the partnership with the EU spans most of the dimensions above reflecting the significance of the EU climate policy agenda, its high level of technical expertise and the scope of its funding mechanisms. Going forward, partnerships could also be structured around specific low carbon emissions pathways at sector and country level (see section 7).

Among the broad range of partnerships developed by the EBRD, this section provides a few illustrative examples including the work of the EBRD building on the TCFD and sectoral partnerships with the International Energy Agency (IEA) and the FAO. It also outlines the MDB partnership on climate which builds on a long and extensive record of cooperation.

TCFD

In recent years, awareness of the implications of climate change for financial stability has sharpened significantly. The Financial Stability Board identified that a widespread market correction is necessary for markets to start pricing in the implications of decarbonisation and of increasing exposure to physical climate change impacts. To minimise the risk of a disorderly and chaotic market correction, the FSB identified the need for greater disclosure of climate-related risks and opportunities (covering both carbon transition and physical climate) by businesses and financial institutions. Accordingly the FSB tasked the TCFD to provide recommendations on the disclosure on climate-related financial information, which were released in 2017 and were supported by over 500 organisations at end 2018 responsible for assets of nearly USD 100 trillion.

EBRD recognises the relevance of TCFD recommendations to the wider market transformation needed to promote low-carbon and climate-resilient development, in line with the objectives of the Paris Agreement. Their adoption across markets will scale up action by businesses and financial institutions to understand better the relevance of climate change to their business operations and to factor climate considerations (both carbon transition and physical climate) into business decision-making. This would in due course lead to a more rational allocation of capital towards low-carbon and climate-resilient activities and assets.

EBRD is the first MDB to become a TCFD supporter, starting to pioneer the integration of TCFD recommendations into its business operations and transactions, thus supporting the dissemination of TCFD recommendations across emerging markets in which EBRD invests. The EBRD has also led ground-breaking thought leadership work on the physical climate aspect of TCFD recommendations, which was presented at a major international conference in May 2018.

International Energy Agency

Since 2010, the EBRD has been cooperating with the International Energy Agency (IEA) across a range of topics. This cooperation has been developed with the aim to focus on systemic transformation in the area of sustainable energy in EBRD countries of operations through investment, policy dialogue and capacity building. The reason for EBRD to partner with the IEA reflects the IEA's unique position as a specialised multilateral energy policy analysis agency. To date, six IEA publications have been produced with EBRD's input and collaboration including:

- The "Accelerating Energy Efficiency in Small and Medium-sized Enterprises" Report describes how to design effective energy efficiency programmes and highlights lessons learned from around the world, making available the experience in implementing a wide range of policies and instruments to improve energy efficiency in SMEs and providing examples of the EBRD Sustainable Energy Financing Facility (SEFF) model in Bulgaria, Kyrgyzstan, Turkey, Ukraine and the Western Balkans.
- The IEA Energy Efficiency Governance (EEG) Project analysed best practices, for example by outlining what kind of laws and institutions are necessary, or how much funding and staff are required to establish effective institutions to drive energy efficiency policy and action. This resulted in a handbook for policy makers to enable them to work on establishing institutions and passing laws that will make their countries energy efficient.
- Report on "Joint Public-Private approaches for Energy Efficiency Finance" to encourage and promote PPP structuring of energy efficiency projects and guidelines on working with donors in setting up finance programmes involving public and private funds.
- Report on "Energy Management Programmes in Industry" focusing on effective practices for designing and implementing energy management programmes for industry.
- Report on "Energy Efficient Transport Systems" focusing on required steps in designing and implementing a package of policies that encourage energy efficiency in transport systems**.**
- Report with 25 Energy Efficiency Policy Recommendations for the Southern and Eastern Mediterranean with a focus on Egypt, Jordan, Morocco and Tunisia.

Such publications are highly visible as the IEA is globally known for its high-quality analysis and specific expertise on energy efficiency policy.

FAO

EBRD and FAO have cooperated for over two decades in the definition of agricultural policies and in the identification of priority areas for EBRD intervention to support the development of efficient, sustainable and competitive food value chains in the EBRD region. Over the years, this cooperation has evolved to cover broader sustainability aspects with an increasing focus on the direct and indirect impacts of agriculture on greenhouse gas emissions and the increasing vulnerability of food value chains to the consequences of climate change.

EBRD and FAO signed a MoU in November 2017 to step up their cooperation in these areas and jointly formulate and implement dedicated technical cooperation programmes to improve the overall sustainability of agrifood value chains in EBRD countries of operations, enhance their climate resilience and mitigate their environmental impact. Key areas of joint work include:

- designing and implementing policy interventions targeting sustainable management of land, soils and water;
- providing analytics, technical assistance and policy advice to limit the carbon footprint of specific food value chains and, where possible, support the emergence of zero carbon food products; and

- scaling up joint work in the area of bioenergy and bioeconomy particularly in respect to the development of biomass supply chains based on agricultural and food processing residues.

MDB collaboration

For over ten years, the MDBs have operated jointly a climate management group including regular senior level meetings on the occasion of the IMF/World Bank Annual Meetings and a set of technical working groups on specific topics. The group involved initially the African Development Bank (AfDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Inter-American Development Bank (IADB) and the World Bank Group. The group expanded to include the Asian Infrastructure Investment Bank (AIIB), the Islamic Development Bank (IsDB) and the New Development Bank (NDB).

The purpose of this group is to work together to make MDBs effective catalysts for low-carbon and climate-resilient development. This cooperative approach operates on the basis of mutually agreed principles for engagement and governance principles with a rotating chairmanship every six months. A significant product of this collaboration has been the production of a joint annual report on climate financing by the AfDB, ADB, EBRD, EIB, IADB and World Bank Group based on a commonly agreed methodology. The latest joint report showed a significant growth in MDB climate finance which rose by 28% from USD 27.4 billion in 2018 to USD 35.2 billion in 2017.

7. FORWARD LOOK

The EBRD has passed the mid-point of the implementation period of its current Strategic and Capital Framework (SCF) which runs from 2016 to 2020. As mentioned in section 2, the EBRD already demonstrated its capacity to achieve its ambitious 40% green finance target by 2020 with the GET finance ratio reaching 43% in 2017, of which 94% was for climate finance. This provides a strong strategic and operational base for the EBRD to start the formulation of its next climate action objectives in the context of the Medium Term Directions scheduled to be formulated by the time of the next Annual Meeting of the EBRD in May 2019.

The EBRD has recently taken important decisions which support its climate agenda. In the context of its new Energy Sector Strategy, the EBRD will no longer finance thermal coal mining or coal-fired electricity generation capacity. It will also not finance any upstream oil exploration and will not finance upstream oil development projects except in rare and exceptional circumstances where the projects reduce greenhouse gas emissions or flaring. Furthermore, in addition to the mandatory projects financial and environmental/ social due diligence. Accordingly, the EBRD has expanded the application of its internal carbon pricing approach with the economic assessment of projects now including shadow carbon pricing applying to project finance and corporate finance with known use of proceeds resulting in annual greenhouse gas emissions above defined thresholds. The EBRD will use the high and low range of prices recommended by The High Level Commission on Carbon Prices with carbon prices assumed in a range of USD 40-80 (~EUR 45 – 90) per metric ton of CO2e in 2020 rising to USD 50-100 (~EUR 56 – 113) per metric ton of CO2e by 2030.

Low-carbon roadmaps have a critical role to play in deploying private sector investments which are crucial to facilitate the shift to low-carbon economies and support countries in the implementation of their respective national climate change agenda. According to the Paris Agreement “Parties share a long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce greenhouse gas emissions” (Art. 10, paragraph 1, Paris Agreement). This statement emphasizes the need to create an enabling environment to facilitate technology transfer and accelerate the deployment of high-impact climate technologies across sectors.

For example, in the corporate sector, the recent report by the Energy Transitions Commission notes that it is essential for energy and industrial systems to achieve net-zero CO_2 emissions to reach a fully decarbonized

economy. This study also emphasises the need to reduce and eventually eliminate emissions from "harder to-abate" sectors in heavy industry (in particular cement, steel and chemicals) and heavy-duty transport.[6]

The sustainable transformation of the corporate sector can be achieved only with accelerated investments in technologies paired with the introduction of innovative business models, productions processes and management practices in line with corporate climate governance principles that can be delivered in a systematic, structured, and realistic approach through a wide stakeholder engagement process such as the Low-Carbon Roadmaps that project a long term trajectory until 2050/2060 accounting for technological/product developments and market behaviours way beyond current forecasts.

Given their relevance, the EBRD is considering to use low carbon pathways as an integrating framework for its climate action. On the basis of technical analysis, this framework would integrate for each major EBRD climate action area in policy, product development, technological innovation deployment, investment, climate funding mobilisation, blended finance instruments and partnerships.

In formulating its next strategic phase for climate action, the EBRD is considering the following elements:

- **Paris Alignment**. At the 2017 One Planet Summit, the MDBs together with IDFC announced their vision to align financial flows with the Paris Agreement. At COP24 in Katowice, the MDBs presented a specific common approach to achieve alignment with the Paris Agreement. The methodological work for this approach is expected to be done by COP25 with implementation starting in 2020. This will result in the formulation of a common methodology for assessing and classifying the estimated climate risks associated to expected outcomes of MDBs activity. It will also provide a common set of tools and criteria that will support the EBRD to define its Paris Agreement alignment strategy.
- **Policy**. Enhanced policy is key to the scaling-up of action and systemic impact driving market development and climate finance opportunities. An enhanced climate policy agenda should cover a broad range of actions going from macro measures, to specific regulations and standards. Examples of macro policy work include intensive support to NDC formulation, development of policies driving sectoral low carbon pathways, work with central banks in countries of operations to develop local green finance markets, sustainability of renewable energy support mechanisms and, where possible, support to 'Just Transition' (ie support to mitigate the impacts of transition away from fossil fuels). Examples of specific operationally oriented policy work include sectoral technology roadmaps, energy efficiency standards or corporate level climate governance protocols.
- **Global systemic initiatives**. A set of major initiatives are underway at global level which provide a strong basis for the EBRD to articulate its overall approach and its policy engagement. These include the implementation of the Task Force on Climate-related Financial Disclosure (TCFD) recommendations, the work resulting from the High Level Expert Group on Sustainable Finance, and the mobilisation of central banks around their potential role in fostering green finance. The EBRD is contributing to these initiatives with, for example, active work on advancing the physical climate angle of TCFD recommendations or participating in the EU Technical Expert Group on Sustainable Finance.
- **Energy efficiency**. The latest IEA World Energy Outlook estimates that 44% of the global CO2 emissions reduction required to meet global climate change mitigation goals would have to come from energy efficiency. This is the largest single mitigation opportunity and one which the EBRD is well positioned to deploy further. Furthermore in the IEA 2 degrees scenario (2DS), energy-efficient climate technologies dominate the cumulative CO2 emissions reductions that can be achieved in industry, reinforcing the importance of efficiency as the "first fuel" for achieving the 2DS vision. In particular, based on its established track record, the EBRD is well placed to scale-up

[6] Energy Transitions Commission (2018 November) "Mission Possible: Reaching net-zero carbon emissions from harder to abate sectors by mid-century", available: http://www.energy-transitions.org/mission-possible

its energy efficiency financing activity in industry, cities, buildings, transport and SMEs through local financial intermediaries. A number of NDCs emphasise improving energy efficiency in the industrial and transport sectors, which is an objective that has traditionally been difficult to achieve. While climate change mitigation priorities for the industrial and transport sector are stated across national policies and strategies, countries and corporates still lack a well-developed approach and guidelines on how to address climate change mitigation challenges and contribute to achieving the overall national and global targets in line with the Paris Agreement.

- **Renewable energy**. According to the IEA, renewable energy is estimated to account for 36% of required emissions reduction. There is a large potential for increased renewable energy financing in the EBRD regions of operations. For instance, there is significant potential for solar energy in the Southern and Eastern Mediterranean region where the EBRD can play an important role in supporting both the transition to a lower carbon economy and a higher share of private sector power generation. With an established track record in financing renewable energy technologies, the EBRD can support the transition from coal to low carbon energy and deliver on energy security as well as providing the basis to scale up climate benefits.
- **Low carbon strategy**. The combination of the above two activities provides the basis for implementation of an effective low carbon strategy by:
  - maintaining a strong focus on energy efficiency across sectors;
  - decarbonising energy production through the expansion of renewable energy capacity. As mentioned in the EBRD Energy Sector Strategy, the transition away from coal requires a sector-wide strategy to develop alternative energy supplies based on renewable deployment, regional integration and smart networks and balancing; and
  - based on an increasingly decarbonised power sector, pursue the electrification of the transport, industry and heat sectors.
- **Adaptation**. Looking forward, the Bank's climate resilience agenda is expected to become increasingly strategic and systemic, including through the following activities:
  - furthering the mainstreaming of climate resilience into EBRD's infrastructure investment operations through the development and application of guidance and standards for climate resilience, in collaboration with leading industry associations and international standardisation bodies such as ISO;
  - developing and applying a systematic approach to addressing physical climate risk and climate resilience in corporates, through the development of analytical tools for identifying and managing physical climate risks in business processes and value chains;
  - developing a system of climate resilience results metrics in collaboration with the j-MDB climate finance group, as a means of reporting the risk level, quality and results of climate resilience financing activities, with potential wider applicability across financial markets; and
  - mainstreaming of physical climate risk /climate resilience opportunity reporting and disclosure across EBRD's clients and portfolio, as well as supporting its inclusion in emerging regulatory approaches such as the EU Sustainable Finance Approach.
- **Sustainable infrastructure**. Building on the progressive mainstreaming of climate action across sectors, the EBRD is sharpening its focus on sustainable infrastructure. This already includes the creation of a Sustainable Infrastructure Business Group consolidating the activities in power generation, transport and municipal environmental infrastructure.
- **Circular economy**. Going forward, the EBRD will consider introducing linear risks analysis in its project assessment process and work on scaling-up its level of circular economy financing especially through its integrated business platforms targeting municipal enterprises, material intensive value chains and by supporting start-ups and business innovators promoting circular economy business models in the EBRD region.
- **Zero Environmental Footprint**. As a follow up to its carbon neutrality initiative, the EBRD is currently developing a methodology to take into account scope 3 emissions. Through its

Sustainability Working Group, the EBRD is also implementing other institutional measures to minimise the use of resources in its operations.

- **Product development**. The successful development of EBRD climate action is based on the development of a broad range of technico-financial instruments addressing specific mitigation and adaptation challenges and opportunities. Sustained product development is required both to accelerate the scaling-up of activity and to achieve significant results in harder-to-abate sectors in both the public and private sectors.
- **Climate funding**. As mentioned in section 5, concessional funding from multilateral and bilateral sources will remain a key requirement for scaling-up climate action as long as significant market failures persist, particularly in terms of the lack of internalisation of the economic costs of carbon emissions.

In developing the next phase of its climate action, and as reflected in the above strategic elements, the EBRD takes into account the directions set in the G20 Hamburg Climate and Energy Action Plan for Growth. These include actions related to NDC preparation and implementation, to long-term low greenhouse gas emission development strategies, to the energy sector transition covering both energy efficiency and renewable energy, and enhancing climate resilience and adaptation. As mentioned above, the EBRD together with the MDBs are developing an approach to align their finance flows with the goals of the Paris Agreement. Furthermore, reflecting its mandate and operating model, the EBRD will continue to place a particular emphasis on developing climate action with the private sector. The EBRD looks forward to its continued contribution to the important work of the G20.