Innovation in financing CCUS

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EBRD - Energy efficiency and Climate Change

European Bank
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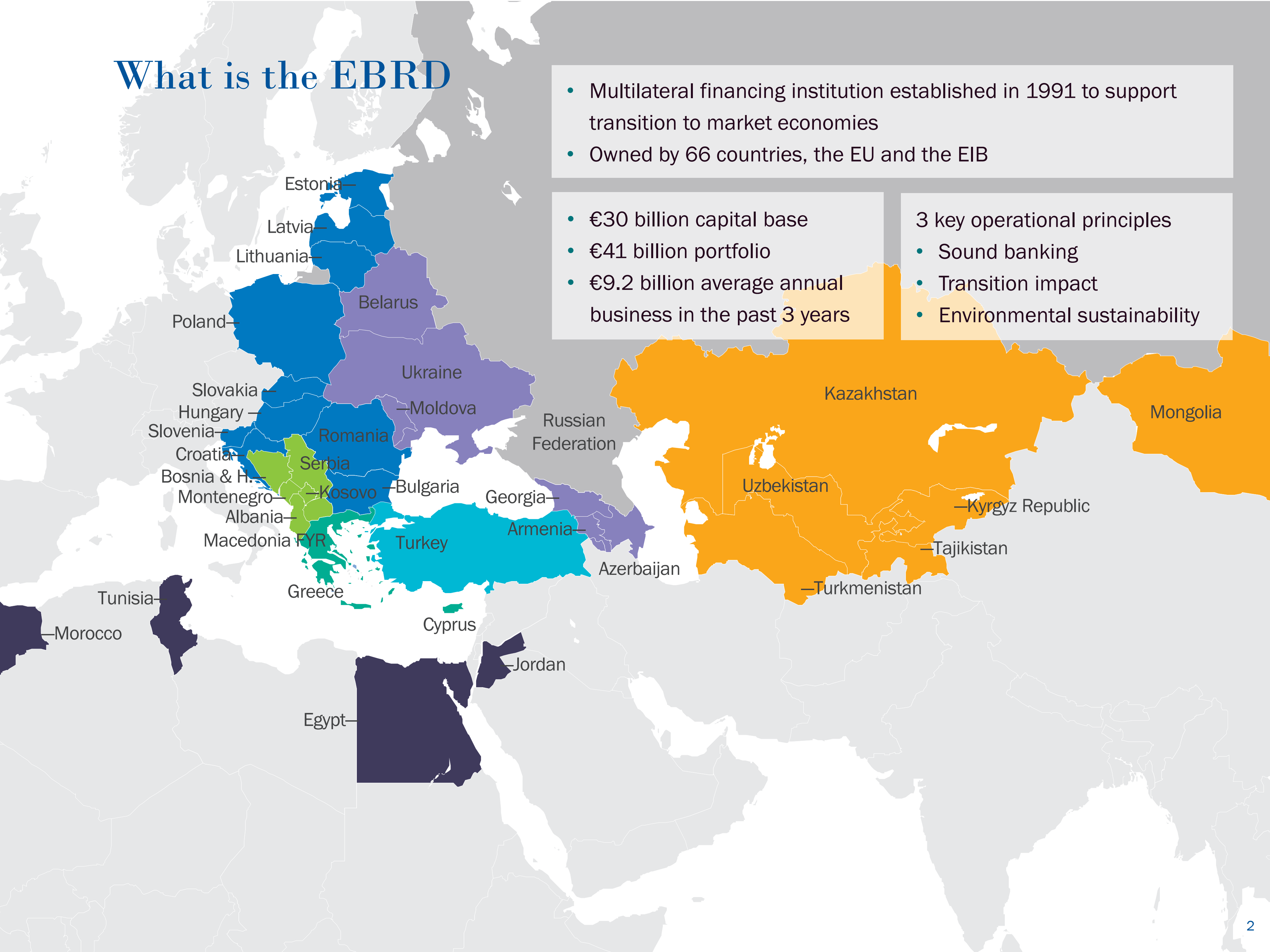
What is the EBRD

- Multilateral financing institution established in 1991 to support transition to market economies
- Owned by 66 countries, the EU and the EIB

- €30 billion capital base
- €41 billion portfolio
- €9.2 billion average annual business in the past 3 years

3 key operational principles

- Sound banking
- Transition impact
- Environmental sustainability



The EBRD Mandate and the Green Economy

How projects are assessed at the EBRD

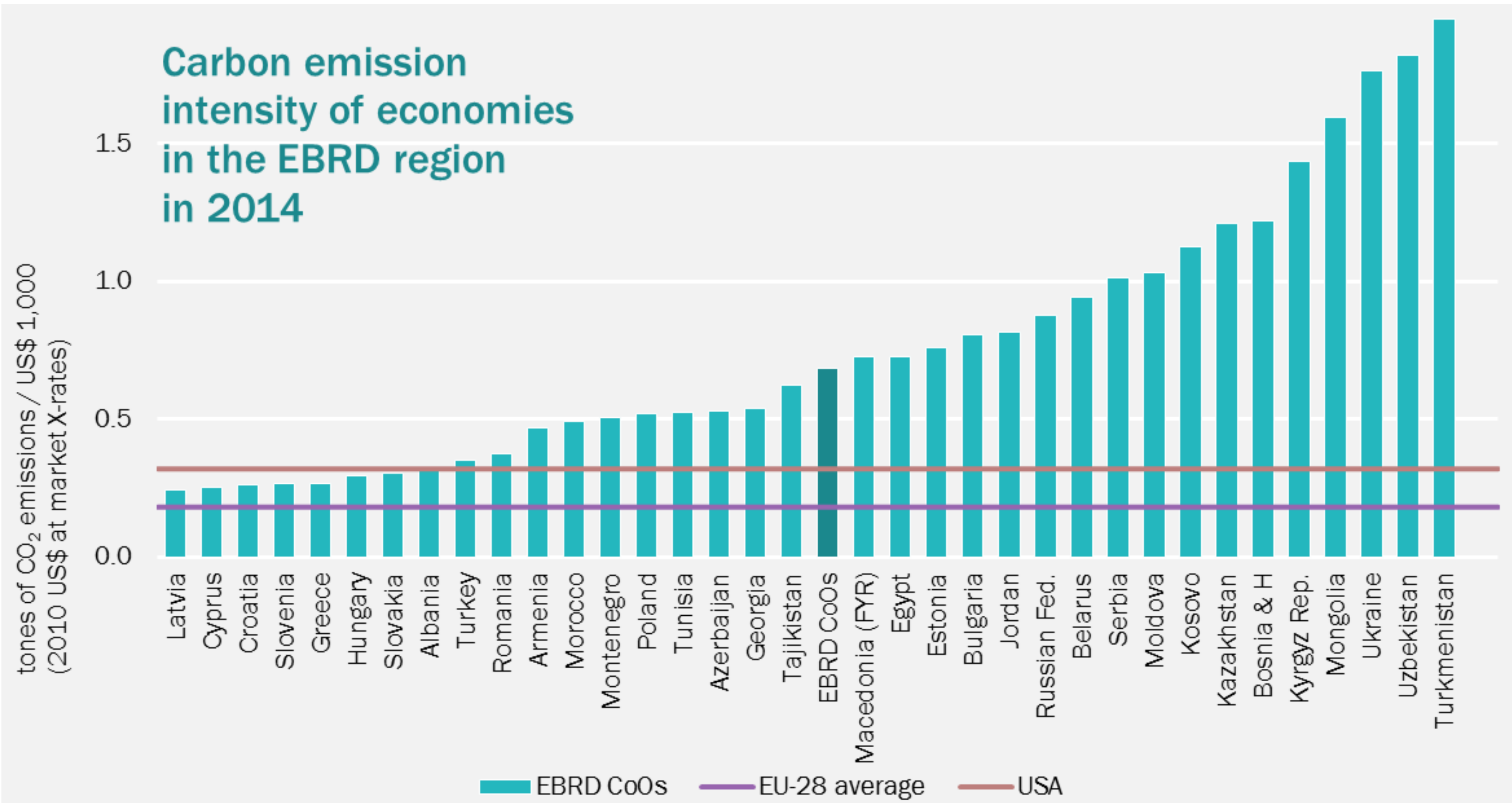
Credit and financial risks

Environmental and social risks
Integrity analysis
Civil society engagement

Market Transition Impact

Green Economy Transition impact

The EBRD Region and Climate Change



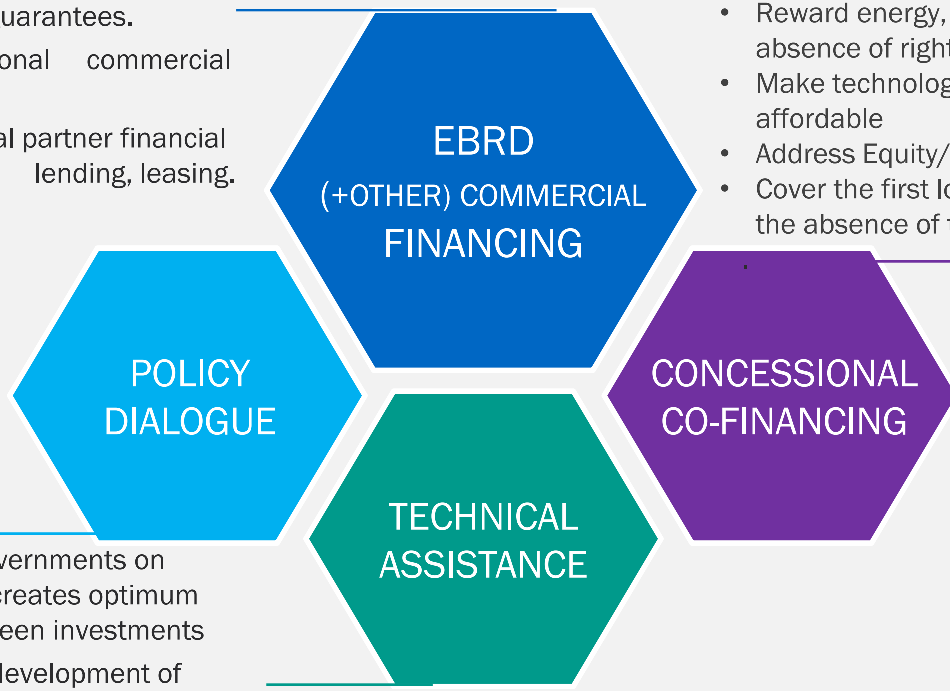
2014 energy-use related CO_2 emissions per unit of GDP (expressed as 2010 US$, at market exchange rates). Source: IEA

Mainstreaming Green Financing: the EBRD Business Model

- Directly from EBRD: loans, equity investments or guarantees.
- Mobilising additional commercial sources.
- Indirectly via local partner financial institutions: lending, leasing.

Concessional finance and grants address barriers regarding pricing and credit risk:

- Reward energy, resource and CO_2 savings in the absence of right pricing of CO_2, water and waste
- Make technologies with high (upfront) costs affordable
- Address Equity/ capital gaps
- Cover the first loss to address first-mover risk in the absence of track record in the sector



- Working with governments on legislation that creates optimum conditions for green investments
- Supporting the development of legal instruments and best practice guidelines (e.g. contract templates, tenders).

- Resource efficiency audits
- Capacity building for local financial institutions (staff training, marketing, green retail lending products)
- Climate vulnerability assessment

- Project structuring support (e.g. tendering, investment guidelines)
- Support to adopt operational or CSR-type standards (energy management, buildings certification, reporting).

The EBRD's Track Record in Green Economy Transition

- The EBRD has been engaged in green economy finance since its establishment
- In 2006, the EBRD launched the Sustainable Energy Initiative to address the twin challenges of energy efficiency and climate change
- The EBRD was the first multilateral development bank (MDB) with a dedicated pool of technical experts in-house
- In 2009, the EBRD became the first MDB to set itself a carbon emissions target
- In mid-2014, the EBRD has already exceeded the three year (2012-14) target under the UN's Sustainable Energy for All initiative

The EBRD's engagement in the context of its countries of operations:

- high share of heavy industry
- ageing infrastructure
- high energy intensity
- a lack of market-based pricing for energy

Mainstreaming Green Financing
Results in 2006 – 2017

FINANCED

1,500

Green Projects and Credit Lines

1,100 directly financed projects

400 credit lines to local FIs

SIGNED

>€26 billion

of green financing

36% of total business

REDUCED

>90 million

tonnes of CO_2/year

>200 million m^3/y water savings

GET IMPLEMENTATION REVIEW

2017 RESULTS

GET & PROJECTS

- €4 billion GET ABI
- 43 % GET share in EBRD ABI
- 186 GET projects

PHYSICAL IMPACT

6.3 million tonnes CO_2
per year expected emission reductions

144 million m^3 per year
estimated water savings

610,800 tonnes per year
waste material minimisation

PORTFOLIO COMPOSITION*

€3 billion in energy efficiency, resource efficiency and environmental projects across sectors

€958 million in renewable energy projects

€392 million in 31 projects with climate resilience components

GREEN ECONOMY FINANCING FACILITIES

39 credit lines
signed under the Green Economy Financing Facilities

10,207 sub-projects
signed under the Green Economy Financing Facilities

CCUS: key risks…

- Technology
- Market
- MRV
- Regulatory
- Misaligned Incentives
- Environmental Impact
- Social Acceptance
- Underdeveloped Infrastructure on Transport/Storage

Financing the Transformation: creating the right incentives…

- New value chains & business models: creating the commercial incentives for Capture and Use…+other revenues streams?
- The role of R&DI (initially government induced), TC (to support project preparation), concessional finance, policies (applying good practice from other sectors: e.g., contract for difference).

…and building on industry strengths

- Scale: materials, energy demand, costs, market complexity
- New industrial landscape (new industry clusters)
- Industry collaboration & integration (largely absent to this day)
- Circularity: the relevance of global frameworks

Pre-requisites…

- The role of concessional finance and innovation finance: e.g., demonstration of first of kind, 'value of death'.
- Different energy vectors: electricity, hydrogen, gas (increasingly 'green' gas)
- Markets for low-carbon products (carbon pricing and carbon price pass through)

..and Challenges

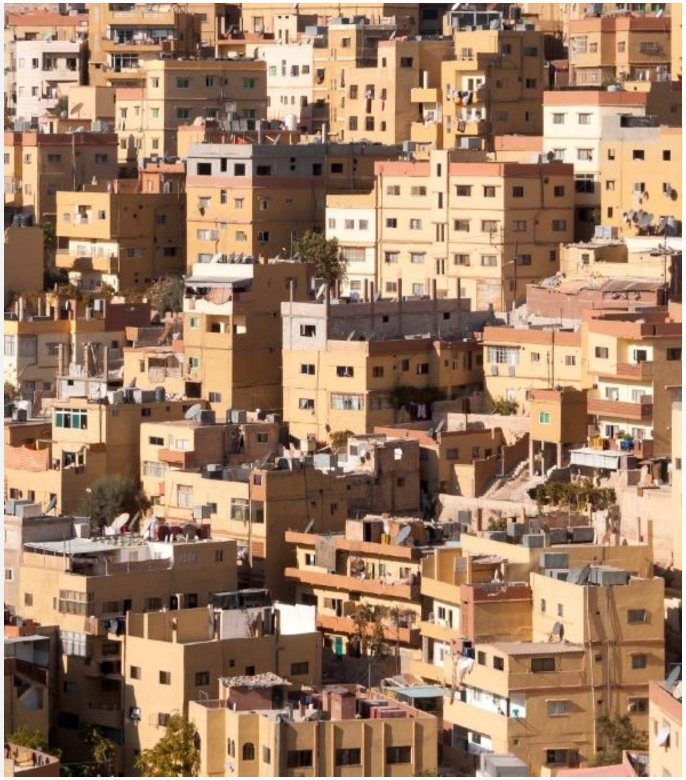
- Risk allocation: reducing the cost of finance.
- Industrial scale up of materials and energy (electricity, gas, hydrogen)
- Consistency of investment with long-term objectives and market trends
- Residual GHG emissions: total decarbonisation??
- Acceptability: location of industrial clusters (social cohesion)
- Industrial collaboration: partnerships around new value chains

Innovative Green Finance: Low-Carbon Pathway for Egypt's cement industry

- The EBRD engaged with relevant ministries and the national cement industry association to define priority upgrades and targets for a technology upgradation roadmap.
- In 2016 the Government announced targets of 15% usage of alternative fuels and the reduction of clinker content to less than 80% at the level of the industry by 2030.

Project example

- Cooperation with the Egypt subsidiary of a large international cement group owning a cement plant which accounts for 10% of the installed production capacity in the country.
- EBRD signed a €50 million loan in 2015 to support the upgradation of the plant. €15 million of the loan is targeting "green" measures:
  - Introduction of alternative fuels (AF) derived from municipal waste into the new fuel mix used to fire the plant's kilns
  - Installation of dust filters to reduce dust emissions to the levels required by the EU Industrial Emissions Directive.
- 47,000 tonnes of CO_2 estimated annual emission reductions. The project will drive the development of the local AF supply market, including through suppliers' training workshops.



THANK YOU

For more information:
http://www.ebrd.com/what-we-do/get.html

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