European Bank for Reconstruction and Development

"Leveraging Private Sector Climate Investment"

Regional Context and Financial Instruments

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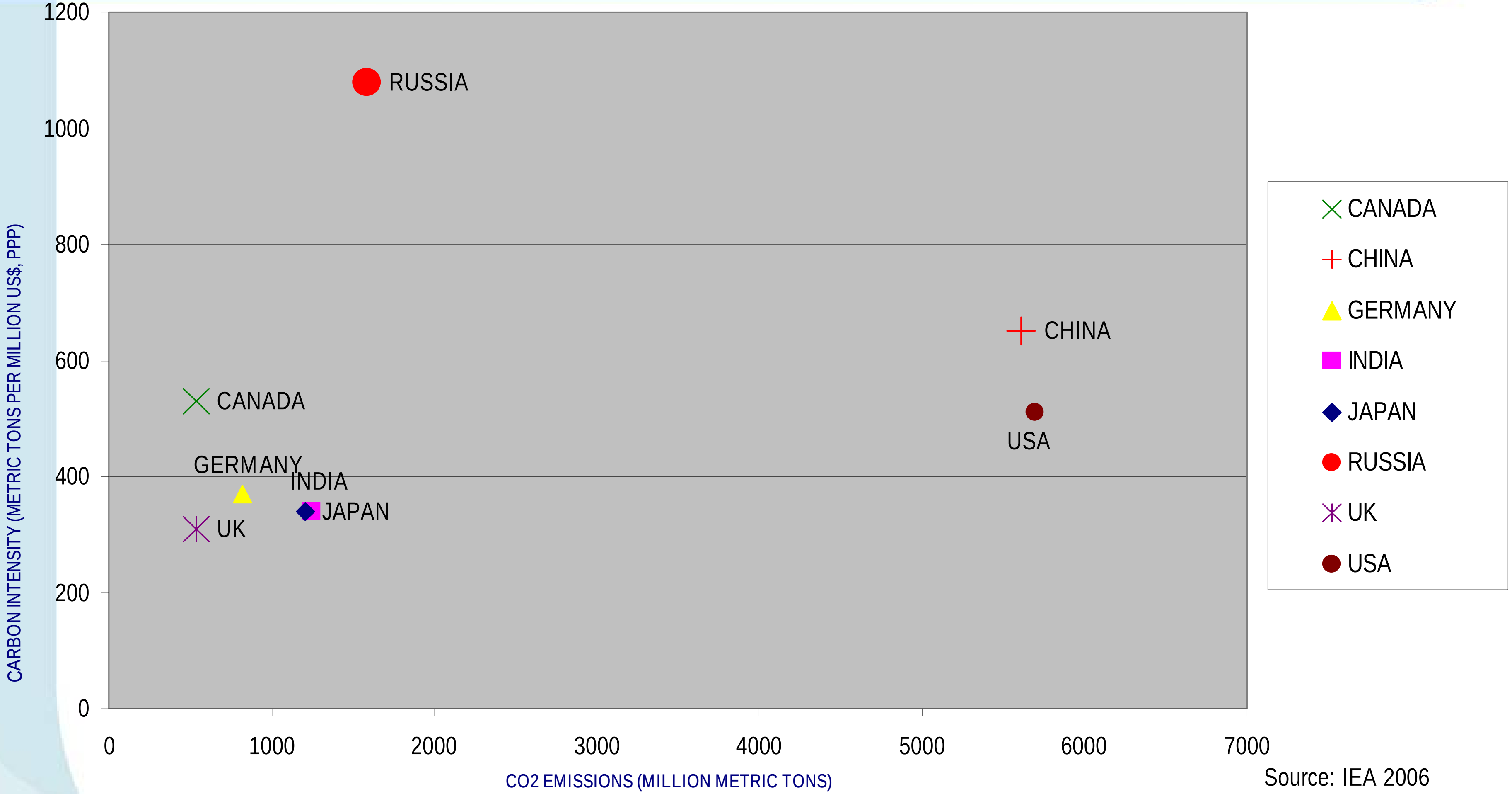
CLIMATE CHANGE INVESTMENT IN TRANSITION ECONOMIES

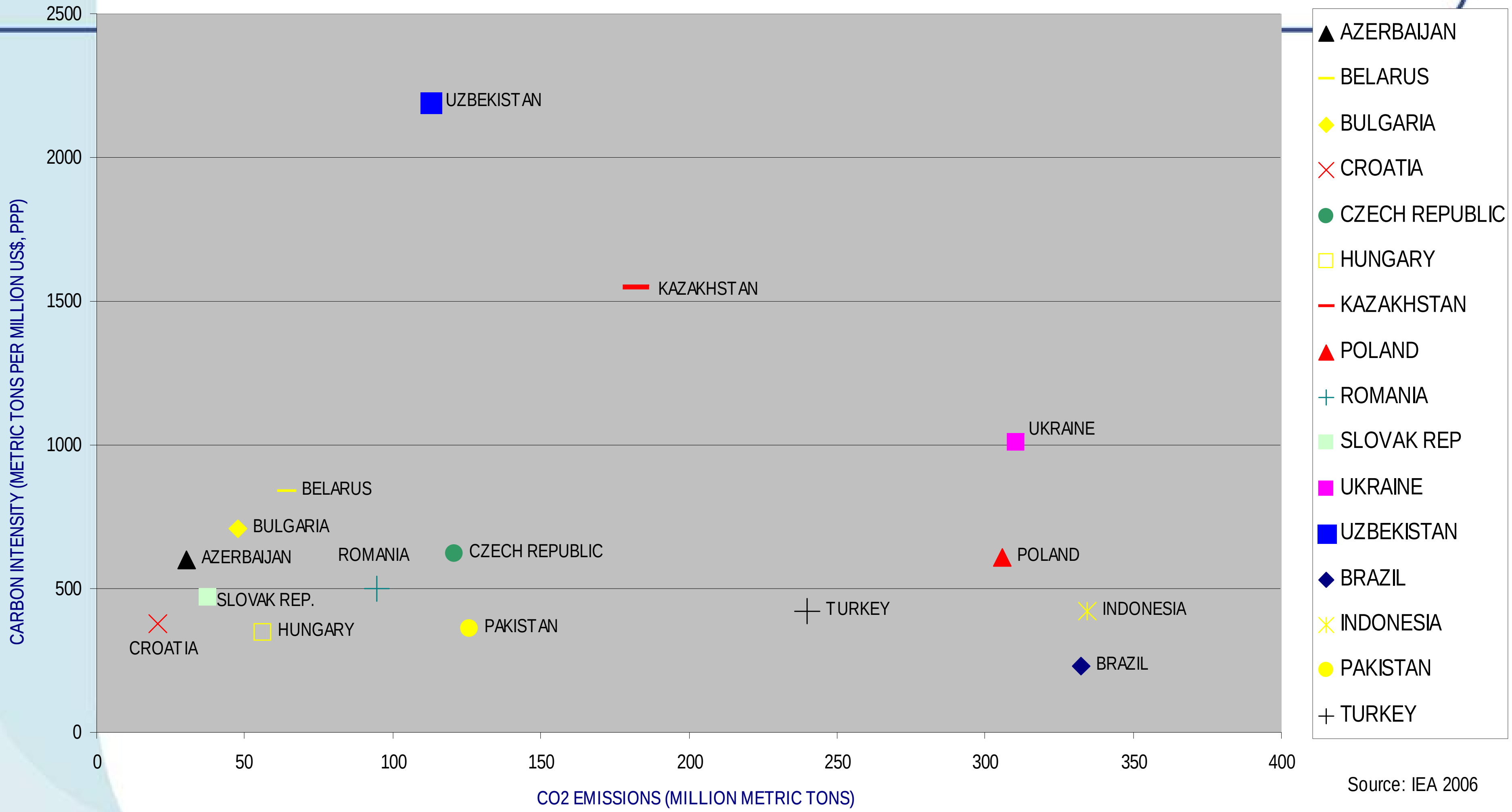
- High energy intensity of transition economies drives potential for business oriented investment in climate change mitigation.
- Energy efficiency investment improves:
  - Business Competitiveness;
  - Energy Security; and
  - Social Welfare
- Awareness of Climate Change is growing (more relevant in the EU) however the reasons above are the key drivers in this region.
- Reasons for situation: Centrally planned economies, pricing levels/ subsidised tariffs
- Transition economies offer opportunities for climate change mitigation in the:
  - **Industrial sector;** where there are large energy intensive industries and outdated equipment and lack of control systems;
  - **Power sector;** given ageing generation, transmission and distribution networks;
  - **Renewable energy sector**; given very low development of new renewable energy sources;
  - **Municipal infrastructure sector**; particularly in district heating, urban public transport and water networks; and
  - **Buildings sector;** which offers huge technical potential (but fragmented market makes it difficult to finance)

E8 - MAJOR GLOBAL EMITTERS
CO2 EMISIONS AND CARBON INTENSITY, 2006



Source: IEA 2006

CO2 EMISSIONS AND CARBON INTENSITY IN SELECTED COUNTRIES, 2006



Source: IEA 2006

OVERCOMING BARRIERS AND RISKS TO FACILITATE SUSTAINABLE ENERGY INVEStMENTS

BARRIERS

Cross-sectoral:	- investor risks related to new markets/technologies
Finance sector:	- lack of suitable financial instruments
	- bank/investor perceived risks of lending/borrowing for energy efficiency and renewables
Municipal/Housing:	- affordability concerns among poorest reform-committed client
	- need to enable investment when split incentives are present
	- transaction cost barriers of complex projects such as district heating
Renewables:	- bridge financing gaps
	- regulators, low returns, lack of equity

SOLUTIONS

- Public Funds can be used to overcome barriers and skills gaps

- EBRD bundles long-term funding with
(i) technical assistance (market analysis, energy audits, training, awareness raising) and in some cases
(ii) grant investment co-financing funds

Objective is to put EE on the agenda and enable clients to identify self-financing energy efficiency investments.

EBRD SUSTAINABLE ENERGY INITIATIVE (SEI)

The SEI was developed in 2006 in this context to address the international agenda for IFIs to scale-up climate change mitigation investment.

SEI Results (2006- Nov 2009):

- SEI investments: **€3.8 billion** through **218 projects**
- **Total project value** reached **€18.2 billion** although not all directly linked to SEI (EBRD finance €6 billion)
- **67 per cent** of projects in the **private sector**
- **Impact:** 24 million tonCO_2 annual emission reductions (impact estimated once investment fully implemented). These savings are equivalent of more than Croatia's emissions and almost as much as Cuba.

SEI Phase 2 Targets (2009 – 2011)

- EBRD SEI financing: €3 to 5 billion (total project value of €9 to15 billion)
- Carbon emissions reduction: 25 to 30 million tCO_2e/annum
- Technical assistance grant funding mobilisation: €100 million
- Investment grant funding mobilisation: €250 million

EBRD SEI INVESTMENTS

CATEGORY	CUMULATIVE SEI PHASE 1 INVESTMENTS 2006-2008		SEI PHASE 2 INVESTMENTS YTD (NOV 09)	
	EUR MILLION	NUMBER OF PROJECTS	EUR MILLION	NUMBER OF PROJECTS
SEI 1 - INDUSTRIAL ENERGY EFFICIENCY	679	56	267	17
SEI 2 - SUSTAINABLE ENERGY CREDIT LINES	362	31	108	8
SEI 3 - CLEANER ENERGY PRODUCTION	1010	19	565	10
SEI 4 - RENEWABLE ENERGY	227	14	124	4
SEI 5 - MUNICIPAL INFRASTRUCTURE ENERGY EFFICIENCY	388	46	79	13
TOTAL	2666	166	1143	52

CARBON FINANCE: SEI Promotes and facilitates the development of carbon markets through the management of two carbon funds (Netherlands Carbon Fund, and EBRD/EIB Multilateral Carbon Credit Fund (MCCF))

Results:

- 12 Emissions Reduction Purchase Agreements (ERPAs) signed for a volume of 6.7 million carbon credits
- two UNFCCC registered projects (Sreden Iskar Cascade HPP in Bulgaria and the Jradzor Small Hydroelectric CDM project in Armenia)
- November 2009, MCCF facilitated Poland's first sale of AAUs for €25 million linked to a Green Investment Scheme.

SEI PHASE 2 - NEW AREAS OF ACTIVITY

Scale-up investment in SEI Phase 1 activity areas and develop activity in the following new areas:

- **Building EE**: dedicated financing schemes to pursue the vast opportunities in this field (buildings use 40% of final energy consumption in the region)
- **Biomass**: developing programmes aimed at creating markets for biomass suppliers and for penetration of biomass technologies
- Climate change mitigation investments in **Natural Resources** sector (gas flaring)
- **Transport EE**: development of urban public transport network, opportunities across integrated transport infrastructures (e.g. railway operators); traffic management system
- **Carbon Markets**: technical assistance to promote carbon market developments, management of carbon funds and Green Investment Schemes in undeveloped markets such as Russia and Ukraine.

FINANCIAL INSTRUMENTS

CASE 1: BULGARIA ENERGY EFFICIENCY & RENEWABLE ENERGY CREDIT LINE

- **EUR 155 million Facility - "One-Stop-Shop"** dedicated loan facility to local banks for on-lending to clients undertaking energy efficiency/renewable energy projects.
- Mitigate the closure of the Kozloduy Nuclear Power Plant by reducing energy demand or by replacing lost capacity with green energy supply.
- Donor funded **technical assistance** for marketing and awareness raising, project preparation, training and capacity building and appropriate **grant incentives** to both sub-borrowers (upon completion) and performance fees to banks
- KIDSF Grant Support – EUR 35,2 million (technical assistance - EUR 4.85 million, incentives to sub-borrowers and banks - EUR 30.35 million). As of Nov 09: **Grant Leverage** 8 X.
- BEERCL was instrumental in the **creation of a market for renewable energy projects** through commercial banks (market transformation)

Credit Line Results

Financially intermediated	8 local banks
Number of sub-loans:	134
Total disbursements:	EUR 90 million
Average size of sub-loans:	EUR 670,149
Electricity equiv. saved:	905,011 MWh/year
CO_2 emissions reduction:	576,543 tons /year

CASE 2: TURKEY SUSTAINABLE ENERGY FINANCE FACILITY (TURSEFF)

EBRD is currently in the process of launching a US $200 million facility to finance small-scale renewables and SME energy finance in Turkey.

It includes US $40 million from the Clean Technology Fund Technical Assistance EUR 5 million from the EU, US $2.4 million from the Clean Technology Fund (CTF) to support implementation and capacity building (leveraged 5 X).

CTF is a multi-donor fund that supports market transformation in sustainable energy technology.

TURSEFF Aspects

- Use of public money (CTF) aims to create a market for bank lending for sustainable energy in Turkey
- Target sectors are SMEs and small-scale renewables
- Implemented through Turkish banks
- Expected to lead to over US $320 million in clean energy investment in the Turkish economy

CASE 3: INDUSTRIAL EE
ASTARTA, SUGAR PRODUCER IN UKRAINE

EBRD has build a relationship and developed various EE activities with client over time

2008

- 1st **Loan: €14.2 million** loan with ~**€10.2 million** EE components identified through **energy audit** commissioned by the Bank to introduce energy efficiency improvements at each of the company's five sugar plants.
- Company to install equipment that uses less energy and assist the company in improving productivity whilst also consuming less energy (such as new drying equipment, new concentration upgrade of heat supply systems)
- **Energy savings estimated at 25-30%** with carbon emission reduction (2008-2012) estimated at **>300 kton CO2**
- **Carbon finance:** Signing of the first large carbon transaction under EIB/EBRD MCCF(150,000 tCO2e of carbon credits)
- Conducted **Energy Management Training** (EMT) for 20 Astarta engineers and specialists

2009

- 2nd **Loan: €14.2 million** with ~**€2.7 million** EE components identified through **energy audit** commissioned by the Bank
- Grant support for implementation of **Energy Efficiency Management Systems** (EEMS) through EBRD Funds **=> lasting legacy**
- = > Infinite Leverage

LEVERAGING RESOURCES

	EBRD Finance	Total Finance (incl. external)	Financial Leverage	Grant Leverage
Industrial Energy Efficiency				
Russia Steel Manufacturing	150	714	x 4.7	x 23.8k
Power Energy Efficiency				
Kazakhstan	46	304	X 6.6	x 10.1k
Municipal Energy Efficiency				
Romania District Heating	10	18.6	x 1.8	x 62
Private District Heating	12.5	40	x 3.2	
Renewable Energy Fund	25	220	x 8.8	
Armenia Renewable Energy	5	16.5	x 3.3	x 8
Energy Efficiency Credit Lines				
Ukraine Industrial EE	55.5	141	x 2.5	x 70.5
Bulgaria Multi target EE	90	145	x 1.6	x 8
Slovakia Housing EE	38	38		x 4

CONCLUSIONS

EBRD has integrated SEI activities into its banking operations

- Bank incorporates EE opportunities into business planning and provides implementation routes with commercial funding that delivers results
- Leverages scarce public resources with Bank's Funds and co-financing:
  - Syndicated loans
  - Local bank funding
  - Equity
- How EBRD can use public resources?
  - Risk absorption
  - Targeted incentives to open markets (e.g. renewable energy)
  - Rewards for emissions reductions
  - Technical assistance
- **Targeted grants** using smart subsidies mechanisms (linked to minimum performance standards and levels of energy savings and where possible emission reductions)

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