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Appraising transformational impact of EBRD projects on the low carbon economy

...and use of shadow price of carbon

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Multilateral and Bilateral Financial Institutions tools and practices to integrate climate considerations in investment processes for large scale investment projects

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EBRD's mandate

- To promote transition to market economies by investing mainly in the private sector projects
- To mobilise significant foreign direct investment
- To support privatisation, restructuring and better municipal services to improve people's lives
- To encourage environmentally sound and sustainable development

Transition: unique mandate of EBRD



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- Transition impact
 - *the expected effects of a project on a client, sector or economy, which contribute to their transformation from central planning to well-functioning market-based structures*
- Transition is compatible with, but not the same as development
- No precedent to draw on (e.g. different than CBA)
- Precursor to “*transformational impact*” in climate finance
- No reliable way to quantify, but robust qualitative appraisal methodology established on a project level



- Three broad sources of project transition impact
 1. The structure and extent of markets
 2. Institutions and policies that support markets
 3. Market-supporting behaviours, skills and innovation
- Specific checklists
- Monitored indicators (benchmarks)

TI rated at appraisal and monitored



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- Each project entering EBRD pipeline is assessed by Chief Economist Office. Transition impact potential is rated and monitored

- *'Excellent'*
- *'Good'*
- *'Satisfactory'*
- *'Marginal'*
- *'Negative'*



- Risk to transition impact is also rated
- TI rating discussed at Operational Committee and low-rated projects usually rejected
- Internal incentives to bankers to achieve at least good TI

Old argument:

Environment is good and chocolate pudding is good,



...but none of them has anything to do with transition

Adaptation of TI methodology to transition to low carbon economy



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- New argument: well functioning market economy is a low carbon economy (removal of market failure improves markets)
- Since 2010 internal operational guidelines mainstreamed climate change and energy efficiency aspects into project appraisal **within** the TI methodology and the Bank's transition mandate
- Key challenges:
 - Role of physical outcomes (*when chocolate pudding paves the way to low carbon economy?*)
 - Role of subsidies (*“good” subsidies can also delay transition to low-carbon economy*)
 - Role of the public sector projects

Application of TI methodology in project appraisal



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- Replacement of old equipment always improves energy efficiency but not always makes transition to low carbon economy
- **Going beyond standard practice (BAU)**
 - TI measured against project/sector specific performance benchmarks (baseline or business as usual in a sector) – flow/dynamic counterfactual
- **Sustainability**
 - *How* emission reduction is achieved is more relevant than *how much* (e.g. *role of subsidies, commercial drivers*)
- **Systemic impact**
 - Demonstration effect and commercial replicability (e.g. *state and subsidies*)
 - Role of regulations and institutions (e.g. *FIT vs. TGC*)
- **Overall rating depends on the other sources of transition and context**

Corporate loan to newly established ESCO to finance expansion into the provision of energy saving services to mainly municipal clients

Sources of positive TI potential

- **Demonstration effect of new product:** Energy performance contracts are new in the region
- **Demonstration effect of new way of financing:** Municipal EE projects implemented and financed by the private party rather than on the public balance sheet
- **Increased private sector participation:** through the use of the public-private EnPC contracts
- **Transfer of skills** to municipalities in outsourcing energy services to private ESCOs (technical assistance)

Factors limiting TI potential

- none

TI rating: **Excellent**

TI risk: **High**

Advanced EU country: Energy Efficiency & Emissions Reduction Loan to a large corporate client

Loan to the oil refining and retail group to finance on-site combined heat and power plant (CHP) rehabilitation

Sources of positive TI potential

- Demonstration effect of implementation of an integrated and externally certified carbon and energy management system across the company
- Demonstration effect of early compliance with EU law going beyond minimum requirements of IED Directive
- Increased competition in the electricity generation market

Factors limiting TI potential

- Already a leading, advanced company with a strong market position
- The Treasury holds a blocking stake in the company
- Compliance with binding law less than one year ahead of formal deadline (baseline);
- Surplus electricity small with limited impact on the electricity market;

TI rating: **Satisfactory**

TI risk: **Medium**

Shadow pricing of carbon emissions in EBRD project appraisal



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- In appraisal of carbon intensive projects
 - sensitivity analysis of project's viability with carbon prices
- In calculating subsidies to green projects (carbon market preparedness)
 - Explicit shadow pricing of carbon applied in direct lending facilities and subsidised larger projects - assisted by EBRD-controlled consultants.
 - Most credit line facilities (small projects) use proxies (transaction costs)
 - Carbon price benchmark: Marginal damage cost ("shadow price") from literature rather than carbon market price (volatile, fragmented)
 - Calculated as PV of hypothetical "carbon credit" revenues subject to a cap (usually 15 – 20% of the loan amount)
 - Paid to beneficiary in full after project is completed and verified by third party consultant hired by EBRD
 - Crediting period & discount rate calibrated for normal distribution within the cap