

CMM FINANCING OPTIONS

Generating Carbon Credits through Coal Mine Methane Capture and Flaring/Utilisation

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PRESENTATION OUTLINE

- Rationale for Bank involvement
- Introduction to Emissions Trading
- Opportunities of Emissions Trading
- EBRD's role in carbon financing



RATIONALE USE OF ENERGY RESOURCES: A KEY ISSUE FOR THE EBRD REGION OF OPERATIONS

- INCREASE SECURITY OF SUPPLY
 - Reduce imports of increasingly expensive fossil fuels
- IMPROVE COMPETITIVENESS
 - Saving energy reduces cost
- IMPROVE THE ENVIRONMENT
 - Global: reduce greenhouse gas (GHG) emissions
 - Local: air pollution / safety issues



EBRD's SUSTAINABLE ENERGY INITIATIVE: CONTEXT AND OVERVIEW

- EBRD SPECIFIC RESPONSE TO G8 GLENEAGLES SUMMIT
- INCREASING AWARENESS OF COUNTRIES OF OPERATIONS PREDOMINANTLY DRIVEN BY RISING ENERGY PRICES AND ENERGY SECURITY CONCERNS
- NEW EBRD ENERGY OPERATIONS POLICY PLACING ENERGY EFFICIENCY AND RENEWABLE ENERGY AS CORNERSTONE
- TARGET OF 1.5 BILLION IN EBRD FINANCING OVER PERIOD 2006-2008, AN INCREASE OF CA 50% OVER PREVIOUS LEVELS
- PROMOTING THE CARBON MARKET BY OPERATING THE MULTILATERAL CARBON CREDIT FUND (MCCF)



MULTILATERAL CARBON CREDIT FUND

- **Joint initiative by the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD)**
- **Total Funds available: €190 million for 3 regional zones across Eastern Europe and Central Asia (€150 million for projects)**
- **Participants: Six countries and six private companies**
 - Sovereign: Belgium (Flanders), Finland, Ireland, Luxembourg, Spain, Sweden
 - Private: Abengoa (Spain), ČEZ (Czech Republic), Gas Natural (Spain), Endesa (Spain), PPC (Greece), and Union Fenosa (Spain)

Value added for sellers to work with MCCF:

- Ability to purchase Carbon Credits (ERUs, CERs) from EBRD and/or EIB financed projects
- Carbon fund backed by two IFI's, providing clout and comfort
- Fair carbon prices, reflecting risk allocation



EBRD FINANCING IN THE COAL SECTOR

- EBRD financing activity in the coal sector was provoked by a series of high profile accidents in underground mines
- Development of a 'health & safety' loan concept to provoke investment in health and safety infrastructure in the sector
- Importance of methane control / capture in safety enhancement
- Carbon credits as potential source of repayment



HEALTH & SAFETY LOANS

- Very poor safety records in coal mines in Bank's countries of operation – e.g. over 4,000 fatalities in Ukraine since 1991.
- The Bank provides Health & Safety loans to fund investments in equipment & infrastructure including:
 - Degasification and/or improved mine ventilation
 - Improvement of roof/ground control
 - Underground communication systems
 - On-site emergency medical facilities
 - Industry standard PPE, safety and warning equipment
 - Hazard control equipment
 - Improved training facilities



CASE STUDY: MITTAL STEEL TEMIRTAU

- Project initiated after high profile accidents in MST's Coal Division resulted in multiple fatalities.
- \$100 m corporate loan with tenor of 8 years.
- Funds to be applied to
 - Electrical equipment upgrades
 - Gas monitoring & management systems
 - Degassing & ventilation equipment upgrades
 - Prevention of coal face collapses & roof falls
 - Training & developing best practice processes

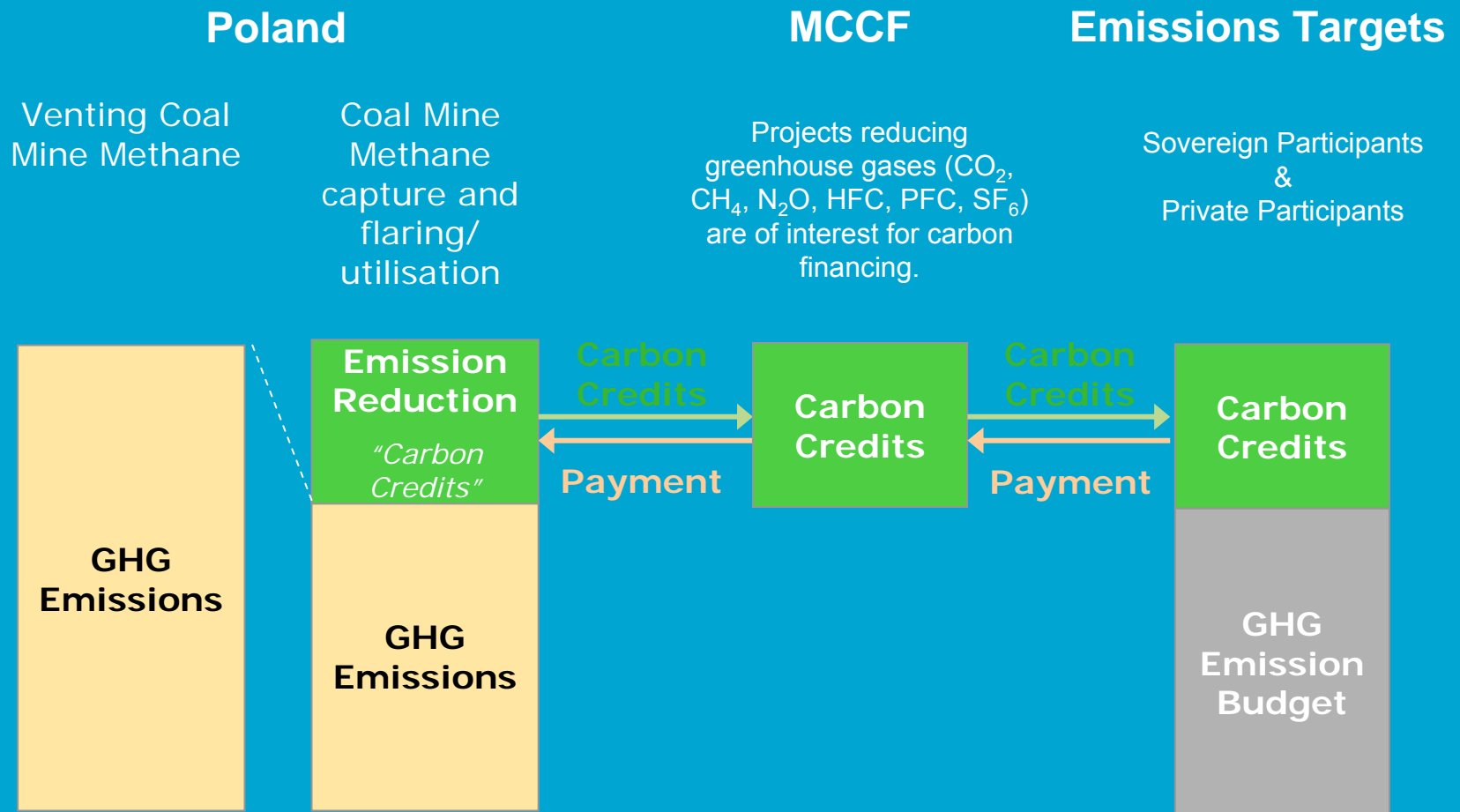


JOINT IMPLEMENTATION

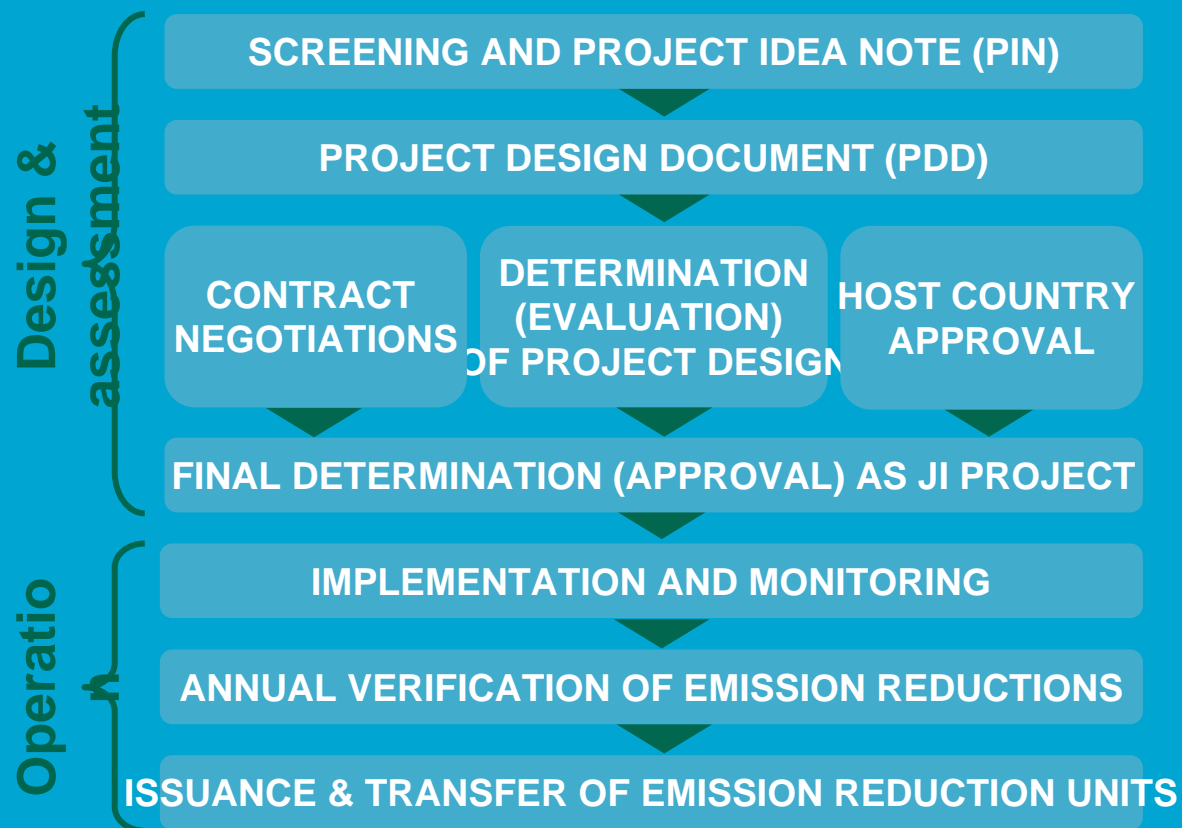
- JI projects generate carbon credits called **Emission Reduction Units (ERUs)**
- ERUs are measured in **tonnes of carbon dioxide equivalent** (1 ERU = 1 tCO₂e)
- ERUs are generated by **projects that reduce greenhouse gas emissions** below business-as-usual levels, and ERUs can be sold to countries and companies that use ERUs for **compliance under the Kyoto Protocol** and the EU Emissions Trading Scheme
- ERUs must be **additional**, i.e. they would not happen without the JI project and they are not part of the business-as-usual (baseline) scenario
- JI is supervised at UN level by the **JI Supervisory Committee (JISC)**
- JI projects require **approval by host country's national JI authority**



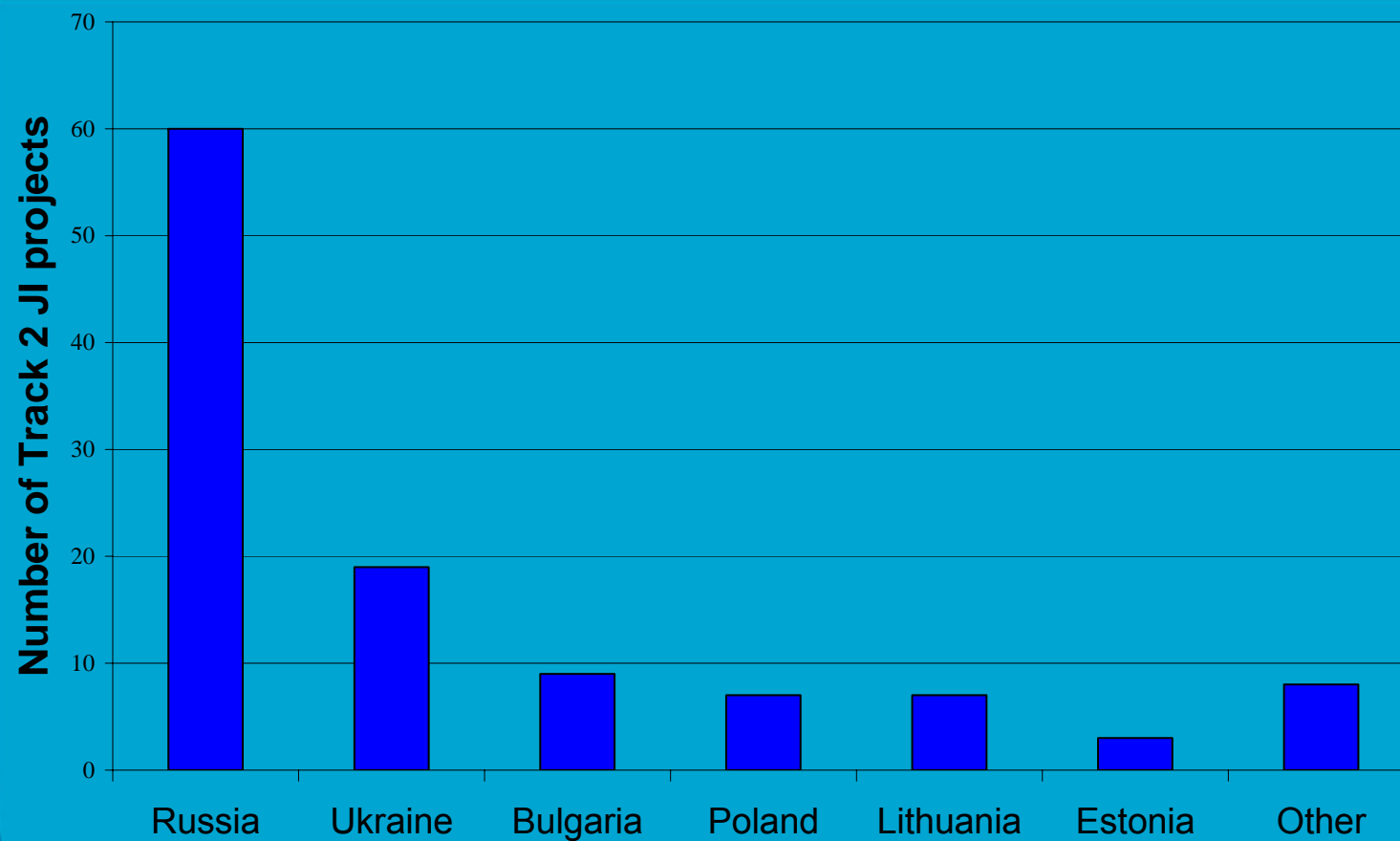
THE CONCEPT OF EMISSIONS TRADING I



JOINT IMPLEMENTATION PROJECT CYCLE



JI projects by host country



Source: UNEP Risoe CDM/JI Pipeline Analysis and Database, 1 February 2008.



COAL MINE METHANE AND CARBON FINANCE I

- Activities that involve the capture and flaring and/or utilisation of CMM as energy (for electricity, heat and/or vehicle fuel) may qualify as Joint Implementation projects under the Kyoto Protocol
- It must be shown that capture and flaring/utilisation would not happen under business-as-usual conditions, in the absence of the JI project activity



COAL MINE METHANE AND CARBON FINANCE II

- Projects may apply an internationally approved calculation and monitoring methodology (ACM0008) to determine how much the emissions are reduced due to the project
- The capture and flaring/utilisation of CMM as a JI project activity in accordance with JI rules generates Emission Reduction Units (ERUs) which can be sold to countries and companies for compliance under the Kyoto Protocol and EU ETS

Companies that capture and flare/utilise CMM receive additional income from the sale of ERUs, making the project activity financially attractive

In addition, utilisation of CMM offers a valuable fuel source, which would otherwise have gone wasted



COAL MINE METHANE AND CARBON FINANCE – CURRENT DEVELOPMENTS

- There are 11 Coal Bed/Mine Methane (CMM) JI projects (as of 1 February 2008) which are going through international scrutiny
 - 8 projects in Ukraine
 - One project in Poland, one in Germany and one in Slovakia
- Total anticipated emission reduction potential of these projects is approx. **25 million tCO₂e by 2012.**
- Current monetary value of the JI CMM projects in the pipeline is **approx. €100 million – 250 million (indicative estimate)**
 - ERU price depends on various factors such as **project maturity and risk level and risk distribution** between buyer and seller



CASE STUDY: PROJECT X*

- 7 year loan to fund purchase of a number of co-generation units in support of expansion in coal production
- Units will result in methane emissions dropping from 55% to 30% despite doubling of production
- Electricity generated will provide most of heat and power to the mine – so reducing costs and reliance of the national economy on external sources of energy
- Carbon credits may provide up to 75% of project finance

** This is a representative illustration of current ongoing discussions with a number of parties*



ONE STOP SHOP – HOW TO WORK WITH EBRD AND MCCF?

- Bring your project to the attention of Michael Green (EBRD Natural Resources) with a request for financing
- Once your project is formally under consideration for financing, the EBRD Carbon Manager will contact you to discuss the development of the JI project
- Both the Bank financing and carbon project development will run in parallel



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