Survey on CDM Project Developments in Caucasus & Moldova

CDM & JI Developments in Eastern Europe & Central Asia
Batumi/Georgia, 1 & 2 June 2006
Johannes Laubach, Fichtner GmbH & Co. KG
Presentation Outline

1. Objective for CDM Project Development
2. CDM Project Developments of TACIS Lot 2
3. CDM Project Developments in the Region
Objective for CDM Project Development
Objective/ToR + Context

➢ ToR: For each country, in close cooperation with the relevant ministries and using local experts, identify at least 2 possible CDM projects and prepare preliminary project descriptions and justifications. For at least one project, develop a preliminary project baseline and prepare project development document. Market identified projects to potential investors.

➢ The aim is to develop minimum of two PINs and one PDD

➢ Dynamic environment due to activities of potential carbon credit buyers (such as EBRD, Danish Carbon, other governments)

➢ List of potential CDM projects regularly updated
2 CDM Project Developments of TACIS Lot 2
Small-scale Hydropower CDM Projects, Armenia

Project Description

- Small hydropower plants
- Guaranteed feed-in tariff of 4 USCent/kWh
- Renewable power generation
  - Methodology SSC I.D
  - Baseline power sector Armenia
- 1 PDD draft available
- Baseline study under development
- Expected credits: < 10,000 CERs/yr
- “Investment additionality”

Developers: 3 hydropower companies
Small scale Afforestation/Reforestation CDM Project, Armenia

Project Description

- Methodology SSC A/R
  - < 8 kt CO₂/yr
  - low-income community
  - no forest since 31 Dec 1989
- Lack of complete territorial coverage
  - cadastre data
- Location: Lori Marz Province
- No irrigation required
- PDD under development

Host: Lori Marz Province
Hydropower CDM Projects, Azerbaijan

Project Description

- Gilanchay river cascade in Nakhchivan: 52.5 MW (18 stations)
- Mil hydropower station: 28.2 MW
- Renewable power generation
  - Methodology ACM0002
  - Baseline power sector Azerbaijan (+ transmission losses to Nakhchivan)
- PINs and Baseline study available
- Expected credits:
  - Gilanchay: 187,000 CERs/yr
  - Mil: 103,000 CERs/yr
- “Investment additionality”

Developer/host: JSC Azerenerji
Small-scale Wind Farm CDM Project, Azerbaijan

Project Description

- Location: Khizi on Absheron Peninsula
- Up to 14 MW installed capacity
- Excellent and steady wind conditions
- But very low power tariff < 3 USCent/kWh
- 2nd-hand wind turbine + 1 x 10 years crediting period
- Methodology SSC I.D
- PDD available
- Expected credits: 28,800 CERs/yr
- “Barrier” + “investment” additionality

Developer/host:
Total Energy Muhendislik MMC
CDM Project Methane Capture at Tkibuli Coal Mines, Georgia

Project Description

- 1 operating and 1 abandoned ventilation system
- Low methane concentrations
- Methodology ACM0008 only for operating coal mines
- Methodological challenge of closed coal mines
- Technological challenge of VAM oxidation
- CDM PIN available
- Currently measurements
- Expected credits: ???

Host: Tkibuli Coal Mine
CDM Project Gadabani Wastewater Plant, Georgia

Project Description

Host: Mtkvari Wastewater treatment plant
CDM Project Biogas at Poultry Farms, Georgia

Project Description

- Biogas plants at 2 poultry farms in Georgia
- Animal Waste Management System
  - Methodology AM0016 or SSC
  - Baseline open lagoons
- Renewable power generation
  - Methodology SSC I.D
  - Baseline power sector MD
- PDD under preparation
- Expected credits: 10,000 - 20,000 CERs/yr

Developer: Project Company (to be founded)
Host: 2 poultry farms
CDM Project Biogas at Poultry Farms, Moldova

**Project Description**

- Biogas plants at 5 poultry farms in Moldova
- 1.4 MW overall installed capacity
- Animal Waste Management System
  - Methodology AM0016
  - Baseline open lagoons
- Renewable power generation
  - Methodology SSC I.D
  - Baseline power sector MD
- CDM PDD available
- Expected credits: 39,000 CERs/yr
- 1 interested investor identified

Developer: Project Company (to be founded)
Host: 5 poultry farms
CDM Hydropower Rehabilitation Projects, Moldova

**Project Description**

- **Baseline study according methodology SSC I.D available**

- **HPP Costesti**
  - River Prut
  - “Boarder” to Romania, to date no site access
  - 16 MW installed capacity
  - Commissioning 1978
  - Potential: additional small turbine or replacement of existing generator (16 MW) through new generator with 19 MW capacity (turbine is constructed for 20 MW)
  - CERs/yr ~1,300

=> no CDM project development

- **HPP Dubasari**
  - River Dnestr
  - “Boarder” Moldova/Transnistria, to date no site access
  - 48 MW installed capacity
  - Commissioning 1954/55
  - Potential rehabilitation of electro-mechanical equipment
  - Or installation of new turbine with 12 MW
  - CERs 8,000 - 12,000/yr (preliminary estimate)

=> real PIN/PDD can only be developed with data + site access!!!

**Hosts:** hydropower companies
CDM Project Developments in the Region
## CDM Project Pipeline Armenia

<table>
<thead>
<tr>
<th>Project</th>
<th>Location</th>
<th>CDM Methodology</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nubarashen Landfill Gas Capture and Power Generation Project in Yerevan</td>
<td>Yerevan</td>
<td>ACM001 + AM0005</td>
<td>registered</td>
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<tr>
<td>Windfarm Zod in Armenia</td>
<td>Gegharkunik</td>
<td>ACM002</td>
<td>PIN ?!</td>
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<tr>
<td>Energy efficiency in cement industry</td>
<td>Yerevan</td>
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<td>PIN</td>
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<tr>
<td>Poultry farm waste utilisation</td>
<td>Lusaker</td>
<td>AM0016+AM0005</td>
<td>PDD</td>
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<tr>
<td>Energy efficiency in chemical industry</td>
<td>Yerevan</td>
<td>?</td>
<td>PIN</td>
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<tr>
<td>Small-scale hydro power plant</td>
<td>Yeghegihis</td>
<td>?</td>
<td>PDD</td>
</tr>
<tr>
<td>Small-scale hydro power plants</td>
<td>Argichi, Vardenik, Eghvard-2</td>
<td>AM0005</td>
<td>PDD under development</td>
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<tr>
<td>Afforestation/reforestation</td>
<td>Lori Marz</td>
<td>?</td>
<td>PDD under development</td>
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# CDM Project Pipeline Azerbaijan

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<th>Project</th>
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<tbody>
<tr>
<td>Hydropower stations</td>
<td>Gilan Chay, Ordubad, Mil</td>
<td>ACM002</td>
<td>PIN</td>
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<tr>
<td>Rehabilitation of Azerbaijan GRES</td>
<td>Mingechaur</td>
<td>new methodology</td>
<td>PIN</td>
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<tr>
<td>Rehabilitation of Sumgait TES-1</td>
<td>Sumgait</td>
<td>new methodology</td>
<td>PIN</td>
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<tr>
<td>Baku landfill</td>
<td>Baku</td>
<td>ACM0001</td>
<td>PIN</td>
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<tr>
<td>Sumgait landfill</td>
<td>Sumgait</td>
<td>ACM0001</td>
<td>PIN</td>
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<tr>
<td>Associated Gas Capture from Gushkhana Oil Field</td>
<td>Gushkhana</td>
<td>Deviation AM0009</td>
<td>PIN/PDD</td>
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<tr>
<td>200 MW Wind Farm in Khizi</td>
<td>Khizi</td>
<td>ACM0002</td>
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<tr>
<td>14 MW Wind Farm in Khizi</td>
<td>Khizi</td>
<td>AM0005</td>
<td>PIN/PDD draft</td>
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<tr>
<td>Associated Gas Capture from new Offshore Oil Fields</td>
<td>Offshore</td>
<td>AM0009</td>
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# CDM Project Pipeline Georgia

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<tr>
<td>Azoti N₂O capture</td>
<td>Rustavi</td>
<td>new methodology</td>
<td>PDD</td>
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<tr>
<td>Tkibuli coal mine methane</td>
<td>Tkibuli</td>
<td>Small-scale or NM</td>
<td>PIN</td>
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<tr>
<td>Methane Capture and Biogas-to-Energy Project for Poultry Farms</td>
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<td>Small-scale or AM0016</td>
<td>PDD under development</td>
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<td>Landfill gas</td>
<td>Tbilisi</td>
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<td>Gas distribution losses</td>
<td>Tbilisi</td>
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<tr>
<td>Methane Leak Reduction Natural Gas Pipeline</td>
<td>North-South Pipeline</td>
<td>AM0023 + new methodology</td>
<td>PDD</td>
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<td>Methane capture from wastewater sewage plant</td>
<td>Gadabani</td>
<td>New ACM</td>
<td>PDD under development</td>
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<td>Increase of energy efficiency in Water Supply Tbilisi</td>
<td>Tbilisi</td>
<td>AM0020</td>
<td>PIN</td>
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<tr>
<td>Energy efficiency in cement industry</td>
<td>Rustavi + Kaspi</td>
<td>new methodology</td>
<td>???</td>
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### CDM Project Pipeline Moldova

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<tr>
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<tbody>
<tr>
<td>Methane Capture and Biogas-to-Energy Project for Poultry Farms</td>
<td>Floreni, nn (Chisinau region), Pirlita</td>
<td>AM0016+ AMS-I.D</td>
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<tr>
<td>Leak Reduction from Natural Gas Pipeline Compressor and Gate Stations</td>
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<td>Landfill Gas Capture and flaring at Chisinau Landfill</td>
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<td>Methane Gas Capture and Electricity Production at Chisinau Wastewater Treatment Plant</td>
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<td>AMS-I.C.</td>
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<td>AMS-II.E</td>
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<td>AMS-III.B</td>
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<td>Hydropower rehabilitation</td>
<td>Dubasari</td>
<td>AMS-I.D</td>
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<tr>
<td>Moldova Biofuel Project</td>
<td>Molodva country-wide</td>
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## Summary CDM Project Developments

<table>
<thead>
<tr>
<th>Project type</th>
<th>Armenia</th>
<th>Azerbaijan</th>
<th>Georgia</th>
<th>Moldova</th>
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<tr>
<td>Renewable power</td>
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<td>Biofuels</td>
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<tr>
<td>Methane capture</td>
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<td>Flared gas use</td>
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Thank you for your attention!

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