Overview of NAMA and CDM Project Implementation in Cambodia

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1. NAMA Capacity Building Actions (1)

- Nationally Appropriate Mitigation Action (NAMA) refers to a set of policies and actions that countries undertake as part of a commitment to reduce greenhouse gas emissions.
- The term of Convention's principal of "common but differentiated responsibilities and respective capabilities" have been used to negotiate the NAMA implementation by developing countries. Thus, it also emphasizes financial assistance from developed countries to developing countries to reduce emissions.

1. NAMA Capacity Building Actions (2)

- NAMA formed an important part of the mitigation component of the Bali Action Plan, during CoP13.
- It is remained an important part of climate change negotiation, including in CoP15 (Copenhagen Accord), and the following CoP.
- As of 22 April 2013, only three countries submitted their NAMA (Mali, Ethiopia, Uruguay) for seeing international support.

Relationship among various mitigation actions



2. NAMA in Cambodia

- Cambodia has not yet submitted a list of NAMAs to the secretariat of UNFCCC in responding to the invitation by the COP decisions.
- In cooperation with Overseas Environmental Cooperation Center (OECC) of Japan, Cambodia has prioritized a number of programme for developing a NAMA (National Biodigester Program, Solar Home System, Energy Efficiency in Building, Biomass utilization, and transport).

NAMA in Cambodia: Case study of National Biodigester Program

2.1 Activities on Quantifying GHG Emissions Reduction



2.2 Step in Emission Reduction Calculation

- 1. Emission sources and gases included:
 - CH_4 , N_2O from animal manure
 - CO_2 , CH_4 , N_2O from fuel combustion
- 2. Future Projection in BAU:
 - Number of livestock
 - Amount of fuel consumption
- 3. Formula and Default Value:
 - IPCC, NBP baseline survey and Cambodian National Data
- 4. NAMA target value:
 - Target number of biodigesters to be installed by 2020
 - Operating ratio of biodigesters

2.3 NAMA target values in 3 scenarios

| Target | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|-----------------|--------|---------|---------|---------|---------|---------|---------|---------|
| Scenario 1 | 24,000 | 30,000 | 36,000 | 42,000 | 48,000 | 54,000 | 60,000 | 66,000 |
| Scenario 2 | 21,000 | 24,000 | 27,000 | 30,000 | 33,000 | 36,000 | 39,000 | 42,000 |
| Scenario 3 | 88,000 | 158,000 | 228,000 | 298,000 | 368,000 | 438,000 | 508,000 | 578,500 |
| Operating ratio | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |

Scenario 1: with ODA (6,000 units per year)
Scenario 2: without ODA (3,000 units per year)
Scenario 3: technical potential (70,000 units per year)
*25% of rural households

2.4 Emissions Reduction by Biodigester (1)



uncovered anaerobic lagoon



CH₄ recovery in animal manure management systems

2.4 Emissions Reduction by Biodigester (2)





Switch from nonrenewable biomass and fossil fuel for thermal applications

Source: NBP. 2011. National Biodigester Programme Cambodia. http://www.nbp.org.kh/page.php?fid=1

2.5 Quantifying CH_4 Emissions Reduction: Animal Manure Management



2.6 Quantifying CO₂, CH₄, N₂O Emissions Reduction: Non-Renewable Biomass and LPG



2.7 Results on Ex-santé Quantification of GHG Emissions Reduction

Total emissions reduction potentials in 2020 are:

220,153 tCO2e in Scenario 1 140,097 tCO2e in Scenario 2 1,929,671 tCO2e in Scenario 3

Status of CDM Development in Cambodia

1. Current Status of CDM Activity (1)

Basic Information (as of Nov. 2012)

| Project Status | No. |
|----------------------------|-----|
| CERs issued | 2 |
| Registered | 9 |
| Under validation | 0 |
| Approved by Cambodia's DNA | 10 |
| Under CDM loan scheme | 1 |

1. Current Status of CDM Activity (2)

DNA Approval and CDM Registration Status (as of 22 April 2013)

| No. | Project Name | Project | Supplemental | Appr. Date | AER | Project | Project | Status |
|-----|------------------------|-------------|-----------------|------------|---------------------------------|--------------------|-----------------|------------|
| | | Туре | Information | (dd/mm/yy) | (t-CO ₂ /yr) | Participants | Participants | |
| | | | | | | (Host Country) | (Others) | |
| 1 | Angkor Bio Cogen Rice | Biomass | Rice husk | 19/1/2006 | 51,620 | Angkor Bio | Mitsubishi UFJ | Registered |
| | Husk Power Project | | | | | Cogen Co., Ltd. | Securities Co., | |
| | | | | | | | Ltd. | |
| 2 | T.T.Y. Cambodia Biogas | Biogas | Agricultural | 4/7/2007 | 50,036 | T.T.Y | None | Registered |
| | Project | | Waste | | | Agricultural Plant | | |
| | | | | | | Development and | | |
| | | | | | | IMEX Co. Ltd; | | |
| | | | | | | Carbon Bridge | | |
| | | | | | | Pte Ltd | | |
| 3 | Methane fired power | Biogas | Animal Waste | 15/10/2007 | 5,593 | Samrong Thom | Mitsubishi UFJ | Registered |
| | generation plant in | | | | | Animal | Securities Co., | |
| | Samrong Thom Animal | | | | | Husbandry | Ltd. | |
| | Husbandry, | | | | | | | |
| 4 | Kampot Cement Waste | Waste | Cement | 20/11/2008 | 17,107 | Kampot Cement | | Registered |
| | Heat Power Generation | heat/gas | production line | | | Company Co., | | |
| | Project (KCC-WHG) | utilisation | | | | Ltd. | | |

| 5 | Biogas Project at MH Bio- ethanol Distillery, Cambodia | Biogas | Agricultural Waste | 29/6/2009 | 58,146 | MH Bio-Energy Co., Ltd | None | Registered |
|----|--|--------|-----------------------|------------|---------|--|---|---------------------|
| б | W2E Siang Phong Biogas Project Cambodia | Biogas | Agricultural Waste | 03/11/2010 | 26,592 | W2E Siang Phong Ltd | None | Registered |
| 7 | Lower Stung Russei Chrum Hydro-Electric Project | Hydro | New reservoir | 02/11/2011 | 701,199 | China Huadian Lower Stung Russei Chrum Hydro-Electric Project (Cambodia) Co., Ltd. | Vitol S.A. | Registered |
| 8 | Cambodia Stung Atay Hydropower Project | Hydro | New reservoir | 03/01/2012 | 266,472 | C.H.D (Cambodia) Hydropower | Gazprom Marketing & Trading Singapore Pte. Ltd. | Registered |
| 9 | Kamchay Hydroelectric BOT Project | Hydro | New reservoir | 20/11/2008 | 281,348 | Sinohydro Kamchay Hydroelectric Project Co., Ltd. | CF Carbon Fund II Ltd. | Under validation |
| 10 | Stung Tatay Hydroelectric Project | Hydro | New reservoir | 16/01/2012 | 563,074 | Cambodian Tatay Hydropower Ltd. | Gazprom Marketing & Trading Singapore Pte. Ltd. | Registered |

Thank you very much

for your attention!

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