Indonesian Climate Policy
Strategic Value of Methane

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Jakarta, 23\textsuperscript{th} September 2011
1. An Overview of Mainstreaming Climate Change Initiatives in Indonesia

2. Indonesia’s National Mitigation Actions

3. Development of NAMAs Framework

4. Emission from methane
An Overview of Mainstreaming Climate Change Initiatives in Indonesia
Why Climate Change Becoming Indonesia’s Main Concern?

With more than 17,000 islands, Indonesia is very vulnerable to rising sea levels and floods, while erratic weather patterns will impact agricultural and fishery production which support many communities.

Climate change action is a target to the attainment of both Indonesia’s National Development Goals and Millennium Development Goals (MDGs).
CLIMATE CHANGE INITIATIVES:
TOWARD LOW CARBON DEVELOPMENT

2007: COP-13 on Bali and National Action Plan on Climate Change (RAN-PI)
2007: ‘Yellowbook’: Integrating CC into development planning (regularly revised)
2009: Technology Needs Assessment (TNA)
2009: Indonesia Climate Change Trust Fund (ICCTF)
2009: President announces mitigation targets (-26% / -41%)
2010: Indonesia Climate Change Sectoral Roadmap (ICCSR)
2010: Indonesian Second National Communication (SNC)
2010: REDD+ Task Force
2011: President Regulation for National Mitigation Actions (RAN-GRK)

Currently: Development of Indonesian NAMAs
Roadmap and ICCTF

Indonesia Climate Change Sectoral Roadmap (ICCSR)

Mitigation
- Forestry
- Industry
- Energy
- Waste
- Transportation

Adaptation
- Water
- Marine and Fisheries
- Agriculture
- Health

Input to Mid-Term (2010-2014) and Next Development Plan (2014-2019)

Financial mechanism:
Indonesia Climate Change Trust Fund (ICCTF)
international & domestic; public & private funds

Adaptation & Resilience  Energy  Land Based Mitigation
National Priority RPJM 2010 - 2014

1. Bureaucracy Reform and Good Governance
2. Education
3. Health
4. Poverty Alleviation
5. Food Security
6. Infrastructure
7. Climate Investment and Climate Business (Energy)
8. Environment and Disaster Management (incl. Climate Change)
9. Disadvantaged, Borders and Post-Conflict Areas
10. Culture, Creativity and Technology Innovation
11. Indonesia Bersatu Cabinet II 2009-2014

Other Priority
12. Politic, Law and Security
13. Economic Development
14. Social Welfare
Indonesia’s National Mitigation Actions
Scenario of 26% GHG Emission Reduction

President Commitment
G-20 Pittsburgh and COP15
To reduce the GHG Emission in 2020

Unilateral

RAN-GRK

41%
Unilateral and International Support

26%

15%
National Mitigation Action Plan (RAN-GRK)

Overall objective
- Contribute to global efforts to reduce emissions and to tap international funding for Indonesia

What it is
- Integral part of National Development Plan, regularly updated
- Core activities, integrated among sectors, to reduce emissions and support activities to strengthen policy framework
- Compiled based on proposals of actions from implementing agencies, based on existing actions that have co-benefits in reducing GHG emissions

Main principles
- Should not hinder economic growth
- Enhance people’s welfare in the sense of sustainable development
- Protection of poor and vulnerable communities
<table>
<thead>
<tr>
<th>Sector</th>
<th>Emission Reduction (Giga ton CO2e)</th>
<th>Action Plan</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26%</td>
<td>+15%</td>
<td></td>
</tr>
<tr>
<td>Forestry and Peatland</td>
<td>0.672</td>
<td>0.367 Forest and land fire control, water and hydrology management on peatland, forest and land rehabilitation, illegal logging control, avoiding deforestation, community development</td>
<td>MoFr, MoPW, MoA, MoE</td>
</tr>
<tr>
<td>Waste</td>
<td>0.048</td>
<td>0.030 Sanitary landfill development, 3 R and sewerage system in urban areas</td>
<td>MoPW, MoE</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0.008</td>
<td>0.003 Introduction of low carbon rice variety, irrigation efficiency, organic fertilizer utilization</td>
<td>MoA, MoPW, MoE</td>
</tr>
<tr>
<td>Industry</td>
<td>0.001</td>
<td>0.004 Energy efficiency, renewable energy development</td>
<td>MoI</td>
</tr>
<tr>
<td>Energy and Transportation</td>
<td>0.038</td>
<td>0.018 Biofuel development and utilization, fuel efficiency improvement, mass transportation, demand side management, renewable energy, energy efficiency</td>
<td>MoT, MoEnergy, MoPW, MoF</td>
</tr>
<tr>
<td></td>
<td>0.767</td>
<td>0.422</td>
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</tbody>
</table>

Source: Result from a Ministerial Meeting at Coordinating Ministry of Economics, 29 December 2009 – will be reviewed
Presidential Regulation of RAN-GRK – Distribution of Duties

Ministries/Institutions

- Implement RAN-GRK in their respective fields
- To monitor and inventory in their respective fields
- Report the implementation of RAN-GRK activities to the Coordinating Minister for the Economy, Bappenas, and MOE

Province (Governor)

- Mandatory to develop RAD-GRK (12 months after the Presidential Regulation RAN-GRK) – signed based on action plan at district/city level.
- File a Report RAD-GRK to the Minister of Home Affairs and Minister of Bappenas.

BAPPENAS

- Coordination of evaluation and review RAN-GRK
- Develop Guidelines for RAD-GRK
- Facilitate preparation of RAD-GRK
- To report the results to the Coordinating Minister for Economy

MOE

- Coordination for the GHG inventory
- Facilitate preparation of RAD-GRK
- To report the results to Coordinating Minister for Economy

Ministry of Home Affairs

- Facilitate the preparation of RAD-GRK

Coordinating Minister for Economy

- Coordination of monitoring for RAN GRK implementation
- Reporting to the President

Coordinating Minister for People’s Welfare

- GHG Inventory Coordination
Development of NAMAs Framework
Developing Indonesian NAMAs

RAN-GRK (as Indonesian NAMA)

Baseline Mitigation scenarios Assessing costs & co-benefits Selecting actions Developing policies & measures Define MRV indicators

Internationally recognized NAMAs

NAMA Concept Note as a “recipe”

In each of the sectors and each province
RAN-GRK: Dual approach for allocating mitigation efforts

- **Sectoral**
  - Land-based: Agriculture, forestry and land use
  - Energy (Industry, transportation, electricity)
  - Waste

- **Regional**
  - Develop local mitigation action plans (RAD-GRK) incl. provincial targets
Multi sectoral baseline

GHG emissions

Multi-sectoral Baseline

Unilateral NAMAs

Supported NAMAs

Credited NAMAs

T_0  T_1  T_n  2020

26 %

41 %

(source: Situmeang, 2011)
<table>
<thead>
<tr>
<th>Task</th>
</tr>
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<tbody>
<tr>
<td>Set a national multi sectoral baseline for GHG emissions</td>
</tr>
<tr>
<td>Establish business-as-usual scenarios for future GHG emission trends</td>
</tr>
<tr>
<td>and reduction paths</td>
</tr>
<tr>
<td>Identification of potential mitigation actions of each sector</td>
</tr>
<tr>
<td>Calculate emission reductions</td>
</tr>
<tr>
<td>Select mitigation actions: based on cost effectiveness and national</td>
</tr>
<tr>
<td>development targets</td>
</tr>
<tr>
<td>Establish carbon budgets for each sector</td>
</tr>
<tr>
<td>Estimate financing needs and related financing schemes</td>
</tr>
</tbody>
</table>
Developing Indonesian NAMAs: Tasks ahead II

1. Estimate collateral benefits, e.g. non-GHG benefits in the transport sector related to air pollution reduction
2. Develop and introduce appropriate mitigation policies & measures
3. Design and establish a coordination mechanism for NAMAs (e.g., a NAMAs registry)
4. Define roles and responsibilities for (additional) institutions (for example: who will do the MRV)
5. Connect the NAMA concept with MRV: Development of indicators
6. Public awareness programme
The Indonesian Mitigation Target (2020)

- 26% without international support
- 41% with international support

Sector allocations:
- Forestry + Peat
- Agriculture
- Power - energy
- Transport
- Waste
- Industry

Actions now:
- Mid-Term Development Plan, sector-strategic 5-year plans

MRV international / REDD+ MRV
Clear and concise contracts
Clear executing agencies
Higher abatement costs
No offsetting

MRV domestic
Outlined in Medium-Term Dev. Plan (RPJM)
Lower abatement costs, economically feasible
National priorities
No offsetting
Mapping of Climate Change Financing in Indonesia

Source: Policy Coordination Forum, Bappenas, 2011
ICCTF AND ROADMAP IN UNFCCC CONTEXT

ICCSR

NAMA/NAPs

MRV

FINANCIAL MECHANISM (decentralized)
**GOAL**

The goal of the ICCTF is to support the GOI’s efforts to reduce emissions, move towards a low-carbon economy and adapt to the impacts of climate change.

**PURPOSE**

The purpose of the ICCTF is to attract, manage and mobilise funding to contribute efficiently and effectively to 1) the mainstreaming of climate change issues in national, provincial and local development planning and 2) the implementation of mitigation and adaptation climate change initiatives.

**OUTCOME 1 – Land Based Mitigation**

The ICCTF aims to contribute to address deforestation & forest degradation issues & to advance sustainable management of peat- lands and forest resources.

**OUTCOME 2- ENERGY**

The ICCTF aims to contribute to the improvement of energy security and reduction of emissions from the energy sector in Indonesia.

**OUTCOME 3- RESILIENCE**

The ICCTF aims to contribute to responding to the adverse impacts of and risks posed by climate change that are already occurring, while also preparing for future impacts through cross cutting and inter-sectoral measures.
Emission from methane
The main source of methane emissions was the waste sector (65%), followed by the agriculture (22%) and energy (13%) sectors. The total methane emissions from all sectors was 236,6 Gg CO2e.
• Methane (CH₄) is a greenhouse gas that remains in the atmosphere for approximately 9-15 years.
• Methane is over 20 times more effective in trapping heat in the atmosphere than carbon dioxide (CO₂) over a 100-year period and is emitted from a variety of natural and human-influenced sources.
• Human-influenced sources include landfills, natural gas and petroleum systems, agricultural activities, coal mining, stationary and mobile combustion, wastewater treatment, and certain industrial process.
• Methane is also a primary constituent of natural gas and an important energy source.

As a result, efforts to prevent or utilize methane emissions can provide significant energy, economic and environmental benefits.
POLICIES ON NEW AND RENEWABLE ENERGY DEVELOPMENT

National Policies:

- Conservation & Diversification of Primary Energy with the use of renewables.
- President Regulation No. 5/2006, Contribution of renewables in 2025: 17% (boost by vision 25% in 2025 (25/25)
- President Decree No. 4/2010: Fast Track Programs for power plants using renewables, coal and gas (FTP-2), where the portion of energy generated from Geothermal Power Plants (GPP) 40% and Hydro Power Plants 12%
- MEMR Decree No. 15/2010 and MEMR Decree No. 02/2011.

Long Term Electricity Supply Planning (RUPTL 2010-2019):

- Projection of electricity growth 9.2% per annum for upcoming decade
- Electrification ratio increases from 68% in 2010 to 91% in 2019
- Fossil Fuel Consumption Reduction Program by 3% starting from 2013.
- Still dominated by Coal Fired Power Plants (CFPP) program (60%), the certainty of readiness of the GPP may reduce the portion of CFPP.
- The development of GPP currently is not based on “least cost” however based on the readiness of the geothermal field developers.

Source: Presentation by Planning Director of PLN at Bappenas, March 11, 2011
## Combine Approach of Technology, Scheme and Mechanism for REFF-Burn

<table>
<thead>
<tr>
<th>A. Technology</th>
<th>Pre-Fossil Combustion (Pre-FC)</th>
<th>During Fossil Combustion (D-FC)</th>
<th>Post-Fossil Combustion (post-FC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency Improvement (Demand Sector):</td>
<td>Energy Efficiency Technology (EEF)</td>
<td>Renewable Energy Technology (RET)</td>
<td>Energy Efficiency Technology (EEF)</td>
</tr>
<tr>
<td>Efficiency Improvement (Supply Sector):</td>
<td>Non Fossil Combustion: • Geothermal • Hydro • Bioenergy</td>
<td>Efficiency Improvement (Supply Sector): • Power Sector • Fuel Switching • Losses Reduction • Cogeneration</td>
<td>Carbon Reduction: • Clean Coal Technology • Clean Fossil Technology • Flared Gas Reduction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Solar • Wind • Ocean</td>
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<tr>
<th>B. Schemes</th>
<th>1. Financing</th>
<th>2. Regulation</th>
<th>3. Institutional Reform</th>
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</thead>
<tbody>
<tr>
<td>1. Financing</td>
<td>• Intermediary and Risk Mitigation • <em>Carbon Market</em></td>
<td>• Long-term Financing • Long-term PPA • Mandatory Mechanism • <em>Carbon Market</em></td>
<td>• National Champion • ESCO</td>
</tr>
<tr>
<td>a. Economic</td>
<td>• Feed-in Tariff • Tendering • Renewable Energy Portfolio Standards</td>
<td>• Energy management standards • Industry Performance Targets</td>
<td>• National Champion • <em>Carbon Market</em></td>
</tr>
<tr>
<td>b. Technical</td>
<td></td>
<td>• Good &amp; Clean Engineering Practices</td>
<td></td>
</tr>
<tr>
<td>3. Institutional Reform</td>
<td>• National Champion • ESCO</td>
<td></td>
<td>• National Champion • <em>Carbon Market</em></td>
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### C. Clean Energy Mechanism

<table>
<thead>
<tr>
<th>1. Kyoto Protocol</th>
<th>2. Beyond Kyoto Protocol</th>
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<tbody>
<tr>
<td>CDM Voluntary, bilateral mechanism</td>
<td>CDM Voluntary, bilateral mechanism</td>
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</tbody>
</table>
Coalbed Methane

• CBM is methane (CH4) which is formed naturally in the formation of coal which is trapped and absorbed inside coal.

• Indonesia has 300-453 Trillion Cubic Feet (TCF) of CBM. CBM reserves are mainly in Kalimantan Island (209 TCF) and Sumatra Island (239 TCF). The rest of the resource (3 TCF) is in Java Island.

• For the development of CBM, there are Presidential Regulation number 5 in 2006 (based on Law number 22 in 2001). In this President regulation, CBM is targeted to contribute 3.3% of primary energy consumption in Indonesia in 2025. Then, more detail follow up by Ministrial Decree (MEMR) number 33 in 2006 and number 36 in 2008.
Issue Related to CBM

• Fiscal incentive for CBM development and speed up of procurement process

• Article 31, point 1 & 4 of Oil and Gas Law require the investors to pay taxes, import tax, and other during exploration period. This may impact on CBM because it’s new technology and the development still generate high risk
THANK YOU