Energy Efficiency Roles in Current and Future Indonesia Carbon Market

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National Council on Climate Change of Indonesia
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1. Indonesia mitigation strategy
2. Indonesia carbon market current condition
3. Energy efficiencies in carbon market
4. Moving forward
"We are devising an energy mix policy including LULUCF (Land Use, Land Use Change, and Forestry) that will reduce our emissions by 26 percent by 2020 from BAU (Business As Usual). With international support, we are confident that we can reduce emissions by as much as 41 percent" - President Yudhoyono’s commitment at the Pittsburgh G-20 Leaders Summit.
Indonesia emission reduction strategies

Market and non-market approaches to climate change mitigation

**Market**
- Compliance market (CDM)
- Voluntary market (VCM)
- Future carbon markets

**Non-market**
- National budget
- Private investment
- Foreign public funding
- Policies (e.g. fiscal, banking incentives and disincentives)
- Philanthropic contribution (companies, NGOs)

Where are the energy efficiencies projects?
## Energy policies implementation in some major countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Carbon Pricing</th>
<th>Clean Energy</th>
<th>Energy Efficiency</th>
<th>Transport</th>
<th>Per cent of Global Emissions+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
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<td></td>
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<td>2.7</td>
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<tr>
<td>Canada</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.0</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19.1</td>
</tr>
<tr>
<td>European Union</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.4</td>
</tr>
<tr>
<td>India</td>
<td>coal tax</td>
<td></td>
<td></td>
<td></td>
<td>4.9</td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Japan</td>
<td>pilot</td>
<td></td>
<td></td>
<td></td>
<td>3.6</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.7</td>
</tr>
<tr>
<td>Russian Federation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.2</td>
</tr>
<tr>
<td>South Africa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.1</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>pilot</td>
<td></td>
<td></td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>United States</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18.3</td>
</tr>
</tbody>
</table>

**Key:**
- State-based action
- National action
- Planned nationally

* Includes residential and commercial buildings.  
# Includes energy efficiency trading markets.  
+ 2005, excluding land use, land use change and forestry.
Clean energy investment in some major countries

- Spain: $10.4b
- China: $34.6b
- UK: $11.2b
- Brazil: $7.4b
- Canada: $3.3b
- Turkey: $1.6b
- Mexico: $2.1b
- India: $2.3b
- US: $18.6b
- Germany: $4.3b
- Italy: $2.6b
- Australia: $1.0b
- France: $1.8b
- Indonesia: $0.4b
- Argentina: $0.1b
- South Africa: $0.1b
- Japan: $0.8b

Percentage of GDP (2009 US dollars)
Indonesia CDM current condition: the projects

- 166 Indonesian projects are in UNFCCC pipeline
- 70 Projects are Registered

Some of energy efficiencies projects are fail to prove their addititionalities

Energy efficiency

- Biomass energy, 27
- Methane avoidance, 71
- Solar, 1
- Afforestation, 1
- Reforestation, 1
- PFCs and SF6, 2
- N2O, 1
- Fossil fuel switch, 10
- Fugitive, 4
- Geothermal, 8
- Hydro, 15
- Landfill gas, 10
- EE households, 1
- EE Industry, 6
- EE supply side, 4
- EE own generation, 3
- Cement, 1
Indonesia CDM current condition: registered projects

CER percentage of registered projects
- Total CER expected until 2012: 27,386,113 CERs; mostly from geothermal
- Energy efficiencies projects only has a very small amount of CERs
### Indonesia CDM current condition: issued CER

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Province / State</th>
<th>Type</th>
<th>Sub-type</th>
<th>CERs</th>
<th>Expected CERs</th>
<th>Issuance success</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CDM SOLAR COOKER PROJECT Aceh 1</td>
<td>Aceh</td>
<td>Solar</td>
<td>Solar cooking</td>
<td>1,077</td>
<td>6,060</td>
<td>18%</td>
</tr>
<tr>
<td>2</td>
<td>Methane Capture and Combustion from Swine Manure Treatment Project at PT</td>
<td>Riau</td>
<td>Methane</td>
<td>Methane avoidance</td>
<td>42,716</td>
<td>221,485</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>Indotirta Suaka Bulan Farm in Indonesia</td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td>Indocement Alternative Fuels Project</td>
<td>West Java &amp; South Kalimantan</td>
<td>Biomass energy</td>
<td>Agricultural residues: other kinds</td>
<td>80,967</td>
<td>258,308</td>
<td>31%</td>
</tr>
<tr>
<td>4</td>
<td>Indocement Blended Cement Project</td>
<td>West Java &amp; South Kalimantan</td>
<td>Cement</td>
<td>Clinker replacement</td>
<td>93,973</td>
<td>859,707</td>
<td>11%</td>
</tr>
<tr>
<td>5</td>
<td>Darajat Unit III Geothermal Project</td>
<td>West Java</td>
<td>Geothermal</td>
<td>Geothermal electricity</td>
<td>1,329,960</td>
<td>1,390,111</td>
<td>96%</td>
</tr>
<tr>
<td>6</td>
<td>Tambun LPG Associated Gas Recovery and Utilization Project</td>
<td>West Java</td>
<td>Fugitive</td>
<td>Oil field flaring reduction</td>
<td>1,400,377</td>
<td>975,626</td>
<td>144%</td>
</tr>
<tr>
<td>7</td>
<td>MEN-Tangerang 13.6MW Natural Gas Co-generation Project</td>
<td>Banten</td>
<td>EE supply side</td>
<td>Cogeneration</td>
<td>17,154</td>
<td>21,836</td>
<td>79%</td>
</tr>
<tr>
<td>8</td>
<td>Emission reductions through partial substitution of fossil fuel with</td>
<td>West Java &amp; Central Java</td>
<td>Biomass energy</td>
<td>Agricultural residues: other kinds</td>
<td>12,335</td>
<td>106,284</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>alternative fuels in the 2 cement plants of PT Holcim</td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>4MW Biomass Power Plants Using Waste Wood Chips &amp; Sawdust in Central</td>
<td>Central Java</td>
<td>Biomass energy</td>
<td>Forest residues: sawmill waste</td>
<td>10,982</td>
<td>14,322</td>
<td>77%</td>
</tr>
<tr>
<td></td>
<td>Java</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10</td>
<td>Gianyar Waste Recovery Project</td>
<td>Bali</td>
<td>Methane</td>
<td>Composting</td>
<td>2,110</td>
<td>6,713</td>
<td>31%</td>
</tr>
<tr>
<td>11</td>
<td>Methane Recovery in Wastewater Treatment, Project AlIN07-W-05,</td>
<td>North Sumatra</td>
<td>Methane</td>
<td>Waste water</td>
<td>8,859</td>
<td>19,160</td>
<td>46%</td>
</tr>
<tr>
<td></td>
<td>Sumatera</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12</td>
<td>BAJ Gunung Agung Factory tapioca starch wastewater biogas extraction</td>
<td>Lampung</td>
<td>Methane</td>
<td>Waste water</td>
<td>6,858</td>
<td>30,779</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>and utilization</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>3,007,368</td>
<td>3,910,392</td>
<td>77%</td>
</tr>
</tbody>
</table>
VCM (voluntary carbon market) is a carbon market not constituted by compliance to reduce emission but by the voluntary intention of the buyer to reduce its carbon footprint.

NCCC is conducting study to portray the voluntary carbon market situation in Indonesia.

More than 20 Indonesian projects in VCM pipeline and all uses Voluntary Carbon Standard (VCS) methodologies.

Total VER that already issued are more than 2,000,000 tVER.

Energy efficiencies are more easy to enter voluntary carbon market.
### 3 possible scenarios post 2012 from climate negotiation

<table>
<thead>
<tr>
<th>Scenarios 1</th>
<th>Scenarios 2</th>
<th>Scenarios 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ideal scenario</strong></td>
<td><strong>Non ideal scenario</strong></td>
<td><strong>Chaos scenario</strong></td>
</tr>
<tr>
<td>KP2:</td>
<td>LCA scenario:</td>
<td>• No commitment for using the multilateral market on the near future</td>
</tr>
<tr>
<td>• Continuation of CDM and JI</td>
<td>• New market mechanism based on NAMA’s crediting, REDD</td>
<td>• The developed country will used bilateral and regional market to fulfill their target</td>
</tr>
<tr>
<td>• Deep cut</td>
<td>• PoA the only CDM that can be continued</td>
<td>• More than 5 years lack for the multilateral carbon market</td>
</tr>
<tr>
<td>• Linking between 1(^{st}) Commitment Period and 2(^{nd}) Commitment Period</td>
<td>• Some possibilities of linkages between 1(^{st}) and 2(^{nd}) commitment</td>
<td></td>
</tr>
<tr>
<td>• No lack between 1(^{st}) and 2(^{nd}) commitment</td>
<td>• 3-5 years of lack between 1(^{st}) and 2(^{nd}) commitment</td>
<td></td>
</tr>
</tbody>
</table>
What Indonesia will do?

- Indonesia finds that whatever the scenario will be, it is very important to prepare market readiness.
- Indonesia will explore any relevant experiences as to carbon market development initiatives, such as EU and New Zealand ETS, domestic market in Japan and Korea and in other countries.
- Market readiness activities would go along with the UNFCCC progress especially on legally binding commitment of developed countries to reducing emissions and market mechanisms for mitigation.
- However, no decisions are made yet as to the type of market mechanism Indonesia intends to prioritize.
- At this point, strengthening carbon market fundamentals while participating in shaping the global market would best suit Indonesia.
- Some carbon market initiatives that already done are:
  - Partnership for Market Readiness (10 donor countries with World bank as a coordinator/operator)
  - Carbon market regional initiatives (with Australia, Asia Pacific, Japan, etc)
  - Bilateral offset credit mechanism discussion (Japan proposal)
  - Capacity building for new possibilities carbon market (with IGES).
With PMR support Indonesia continues to prepare building blocks to develop readiness for next possible carbon markets.

The proposal will comprise a series of activities covering readiness on technical, policy, and institutional/legal elements.

Focus on energy, industry, and transportation sectors with an objective to prepare and strengthen carbon market fundamentals.

The next possible carbon markets include domestic, regional, and global market under or outside UNFCCC mechanisms.
Terima kasih
Thank you