Leadership Dialogue Talking Points: SDG7 in Indonesia and the Asia-Pacific

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Vice Chairman of Commission VII &
Chairman of the Green Economy Caucus
The House of Representatives of the Republic of Indonesia
Agenda

1. Renewable energy
2. Energy access
3. Energy efficiency
4. Energy and health
Renewable energy
Global RE investment trends

NEW INVESTMENT IN CLEAN ENERGY
2004-16 ($BN)

Source: Bloomberg New Energy Finance
Renewable energy
Global solar PV price trend

## Renewable energy

**Comparison of national RE targets**

<table>
<thead>
<tr>
<th>Country</th>
<th>RE target in national energy mix</th>
<th>Year</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>23%</td>
<td>2025</td>
<td>6% (2017)</td>
</tr>
<tr>
<td>Mexico</td>
<td>35%</td>
<td>2024</td>
<td>15.86% (2016)</td>
</tr>
<tr>
<td>China</td>
<td>20% (TPES)</td>
<td>2030</td>
<td>12% (2015)</td>
</tr>
<tr>
<td>India</td>
<td>175 GW (additional capacity)</td>
<td>2024</td>
<td>13.2% (Oct, 2017)</td>
</tr>
<tr>
<td>Brazil</td>
<td>28–33% (tanpa hydro power)</td>
<td>2030</td>
<td>5.3 (2015)</td>
</tr>
<tr>
<td>South Africa</td>
<td>20%</td>
<td>2030</td>
<td>5.5% (2015)</td>
</tr>
</tbody>
</table>
## Renewable energy

### Indonesia’s RE potential

<table>
<thead>
<tr>
<th>No.</th>
<th>Type of energy</th>
<th>Resources</th>
<th>Reserves</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Geothermal</td>
<td>11,997.5 MWe</td>
<td>17,546 MWe</td>
<td>29,543.5 MW</td>
</tr>
<tr>
<td>2</td>
<td>Hydro</td>
<td></td>
<td>75,000 MW</td>
<td>45,379 MW (identified resources)</td>
</tr>
<tr>
<td>3</td>
<td>Mini-micro hydro</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Biomass</td>
<td>32,654 MWe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Solar</td>
<td>4.8 kWh/m²/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Wind</td>
<td>970 MW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Uranium</td>
<td>3,000 MW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Shale Gas</td>
<td>574 TSCF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Coal-based Methane</td>
<td>456.7 TSCF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Marine current</td>
<td>1995.2 MW</td>
<td>(practical potential)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Ocean Thermal Energy Conversion</td>
<td>41,012 MW</td>
<td>(practical potential)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Tidal</td>
<td>4,800 MW</td>
<td>(practical potential)</td>
<td></td>
</tr>
</tbody>
</table>
Renewable energy
RE target for national energy mix

• The Indonesian government is pursuing policies and strategies to increase investment appetite for renewable energy and its portion in the national energy mix.

<table>
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<th></th>
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<td>55 GW</td>
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<td>443 GW</td>
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<td>&gt; 1</td>
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<td>Elec./capita/year</td>
<td>865 KWh</td>
<td>2,500 KWh</td>
<td>7,000 KWh</td>
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<tr>
<td>Electrification ratio</td>
<td>88%</td>
<td>~100%</td>
<td>~100%</td>
</tr>
</tbody>
</table>

Source: National Energy Council 2017
Indonesia ranks seventh overall out of 50 countries on the 2015 Top Markets Study (TMS) with the market for environmental technologies valued at USD 6.3 billion in 2016. (International Trade Administration, 2016)

Renewable energy
SDG 7 in Indonesian policy framework

• There are 17 specific SDGs to be achieved by 2030, elaborated into 169 targets and 241 indicators.

• SDG 13 addresses climate action, whereas SDG 7 strives to: “Ensure access to affordable, reliable, sustainable and modern energy for all”.

• The House of Rep. and the Government (including the National Development Planning Agency as national focal point for SDGs) are committed to integrate SDG7 into Indonesia’s national policy framework for RE development.

• This is in line with SDG 13 on climate action, the output of which is national commitment for cross-sectoral climate action through Indonesia’s NDC.
## Renewable energy

**SDG 7: indicators/subindicators**

<table>
<thead>
<tr>
<th>Goal</th>
<th>Description</th>
<th>Subgoal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>By 2030, ensure universal access to affordable, reliable and modern energy services</td>
<td>7.1.1</td>
<td>Proportion of population with access to electricity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.1.2</td>
<td>Proportion of population with primary reliance on clean fuels and technology</td>
</tr>
<tr>
<td>7.2</td>
<td>By 2030, increase substantially the share of renewable energy in the global energy mix</td>
<td>7.2.1</td>
<td>Renewable energy share in the total final energy consumption</td>
</tr>
<tr>
<td>7.3</td>
<td>By 2030, double the global rate of improvement in energy efficiency</td>
<td>7.3.1</td>
<td>Energy intensity measured in terms of primary energy and GDP</td>
</tr>
<tr>
<td>7.a</td>
<td>By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology</td>
<td>7.a.1</td>
<td>International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems</td>
</tr>
<tr>
<td>7.b</td>
<td>By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support</td>
<td>7.b.1</td>
<td>Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services</td>
</tr>
</tbody>
</table>
Renewable energy
SDG 7 in economic development pillar

Goal 7: Energi Bersih & Terjangkau;
Goal 8: Pekerjaan Layak & Pertumbuhan Ekonomi
Goal 9: Industri, Inovasi & Infrastruktur;
Goal 10: Berkurangnya Kesenjangan;
Goal 13: Penanganan Perubahan Iklim;
Goal 16: Perdamaian, Keadilan & Kelembagaan yang Tangguh
Renewable energy
Indonesian energy policy framework

Sumber: Bappenas 2017
### Breaking down SDG 13

**Climate-related hazards, natural disasters**

<table>
<thead>
<tr>
<th>13.1</th>
<th>Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.1.1</td>
<td>Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population</td>
</tr>
<tr>
<td>13.1.2</td>
<td>Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030</td>
</tr>
<tr>
<td>13.1.3</td>
<td>Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies</td>
</tr>
</tbody>
</table>

- Disaster management is handled by the Indonesian National Board for Disaster Management (BNPB), overseen by Commission VIII.
- Lessons learned: from September to October 2015, daily estimated GHG emissions from fires in Indonesia surpassed average daily emissions from the entire US economy (approximately 15.95 Mt CO2 per day).
- Anticipating future crises: BNPB reported that per 22 August 2017, 538 hotspots (fires) have been detected (medium to high confidence), particularly escalating in West Kalimantan (193 spots) and Papua (143 spots).
- Haze is a prime example of how climate change engenders cross-sectoral ramifications (disaster management, geopolitics, environment, forestry and land use, law enforcement, etc.), which in turn necessitates cross-sectoral action.
# Breaking down SDG 13

## National policies, strategies, planning

| 13.2 | Integrate climate change measures into national policies, strategies and planning | 13.2.1 | Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other) |

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## Outline of Indonesia’s energy policy framework

- **UU No. 30/2007**
  - Energy Law
- **UU No. 22/2001**
  - Oil and Gas Law
- **UU No. 30/2009**
  - Electricity Law
- **UU No. 4/2009**
  - Mineral and Coal Mining Law
- **UU No. 21/2014**
  - Geothermal Law
- **PP No. 79/2014**
  - National Energy Policy (KEN)
- **General Plan for National Energy**
  - (RUEN)
- **General Plan for Regional Energy**
  - (RUED)

- **Improving energy mix** → 23% renewables by 2025, 31% by 2030.
- **Energy conservation.**
- **Acceleration of power plants.**
- **Elaboration of targets of KEN.**
- **Policies and strategies to achieve KEN.**
- **Breakdown and synchronization of RUEN and KEN at regional jurisdictions and spatial plans.**
## Breaking down SDG 13
National policies, strategies, planning

### INDONESIA’S NDC

<table>
<thead>
<tr>
<th>Sector</th>
<th>GHG Emissions in 2010 (Million Tons of CO₂e)</th>
<th>GHG Emissions in 2030 (MtCO₂e)</th>
<th>GHG Emissions Reduction</th>
<th>Average Annual Growth BAU (2010–2030)</th>
<th>Average Growth 2000–2012*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BAU</td>
<td>CM1</td>
<td>CM2</td>
<td>CM1</td>
</tr>
<tr>
<td>1</td>
<td>Energy</td>
<td>453.2</td>
<td>1,669 (58.17%)</td>
<td>1,355 (66.61%)</td>
<td>1,271 (71.12%)</td>
</tr>
<tr>
<td>2</td>
<td>Waste</td>
<td>88</td>
<td>296 (10.31%)</td>
<td>285 (14.01%)</td>
<td>270 (15.10%)</td>
</tr>
<tr>
<td>3</td>
<td>IPPU</td>
<td>36 (2.69%)</td>
<td>69.6 (2.42%)</td>
<td>66.85 (3.28%)</td>
<td>66.35 (3.71%)</td>
</tr>
<tr>
<td>4</td>
<td>Agriculture</td>
<td>110.5</td>
<td>119.66 (4.17%)</td>
<td>110.39 (5.42%)</td>
<td>115.86 (6.48%)</td>
</tr>
<tr>
<td>5</td>
<td>LULUCF**</td>
<td>647 (48.50%)</td>
<td>714 (24.88%)</td>
<td>217 (10.66%)</td>
<td>64 (3.58%)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>1,334</td>
<td>2,869</td>
<td>2,034</td>
<td>1,787</td>
</tr>
</tbody>
</table>

**CM1 = Counter Measure 1 (unconditional)  CM2 = Counter Measure 2 (conditional)**

**Including peatland fire**  
* Including fugitive

**INDONESIA’S NDC 2030**  
-29% (UNCONDITIONAL)  
-41% (CONDITIONAL)

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**Breaking down SDG 13**

- National policies, strategies, planning
- **INDONESIA’S NDC**
- GHG Emissions in 2010 (Million Tons of CO₂e)
- GHG Emissions in 2030 (MtCO₂e)
- GHG Emissions Reduction (MtCO₂e)
- % of total BAU
- Average Annual Growth BAU (2010–2030)
- Average Growth 2000–2012*
Breaking down SDG 13
National policies, strategies, planning

• The Indonesian government is pursuing policies and strategies to increase investment appetite for renewable energy and its portion in the national energy mix.

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</tbody>
</table>

Source: National Energy Council 2017
Breaking down SDG 13
National policies, strategies, planning

Breakdown of electricity production costs per region

<table>
<thead>
<tr>
<th>Type of renewable energy</th>
<th>Local BPP</th>
<th>National BPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLTS, PLTB, PLTBm, PLTBg, PLTA Laut</td>
<td>85% of Local BPP</td>
<td>Based on Agreement</td>
</tr>
<tr>
<td>PLTP, PLTSA, PLTA</td>
<td>100% of Local BPP</td>
<td>Based on Agreement</td>
</tr>
</tbody>
</table>

Biaya Pokok Produksi 2016 (cUSD/kWh)

Source: Ministry of Energy and Mineral Resources
## Breaking down SDG 13
**Education, awareness, capacity**

<table>
<thead>
<tr>
<th>13.3</th>
<th>Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.3.1</td>
<td>Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula</td>
</tr>
<tr>
<td>13.3.2</td>
<td>Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions</td>
</tr>
</tbody>
</table>

- In 2012, the Ministry of Environment issued a supplement for climate change education to teachers, integrating into curriculums in science, social science, civics, and language. The supplement also outlined practical steps for climate mitigation and adaptation within the schoolyard.

- **Collaborative involvement in formal and non-formal sectors:** Hans Seidel Foundation’s “Handbook for Climate Change” for junior high school; the British Council’s C4C (Climate For Classrooms) program for primary and secondary education; the Department of Agriculture’s Climate Field School for farmers; the Meteorological, Climatological, and Geophysical Agency (BMKG)’s guideline for climate change integration into curriculums; numerous programs and curriculum additions by the Ministry of Education and Culture.
## Breaking down SDG 13

### Funding climate action

| 13.a | Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible |
| 13.a.1 | Mobilized amount of United States dollars per year between 2020 and 2025 accountable towards the $100 billion commitment |

### Objective & Period

<p>| Estimated resource envelope for emission reduction effort (per 2014) |</p>
<table>
<thead>
<tr>
<th>IDR trillion</th>
<th>US$ billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.8</td>
<td>3.7</td>
</tr>
</tbody>
</table>

### List of Available Funds

<table>
<thead>
<tr>
<th>Fund</th>
<th>Administered by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Environment Facility (GEF)</td>
<td>UNFCCC</td>
</tr>
<tr>
<td>Adaptation Fund</td>
<td>UN</td>
</tr>
<tr>
<td>Green Climate Fund (GCF)</td>
<td>UNFCCC</td>
</tr>
<tr>
<td>Clean Technology Fund (CTF)</td>
<td>The World Bank</td>
</tr>
<tr>
<td>Strategic Climate Fund (SCF)</td>
<td>The World Bank</td>
</tr>
<tr>
<td>Pilot Programme for Climate Resilience (PPCR)</td>
<td>The World Bank</td>
</tr>
<tr>
<td>Forest Investment Programme</td>
<td>The World Bank</td>
</tr>
<tr>
<td>Tropical Landscapes Finance Facility (TLFF)</td>
<td>UN</td>
</tr>
<tr>
<td>National Mitigation Actions (NAMAs)</td>
<td>UK and Germany</td>
</tr>
<tr>
<td>Indonesia Climate Change Trust Fund (ICCTF)</td>
<td>Bappenas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multilateral</td>
</tr>
<tr>
<td>Bilateral</td>
</tr>
<tr>
<td>Multi-donors National Channel</td>
</tr>
</tbody>
</table>
### Breaking down SDG 13

**Funding climate action**

| 13.a | Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible |
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- **Parliamentary pushback:** conditions for international financial support should not be rigidly performance-based, but should include provisions for closely monitored and supervised up-front assistance.
- Lessons learned from ICCTF (multi-donors national channel): operationalization much slower than expected, very little international funding.
- Newest member on the block: Tropical Landscapes Finance Facility (TLFF) → TLFF Secretariat supported by UNEP/ICRAF.
  - US$ 1–5 billion loan fund (TLLF) → long-term loans for **energy access to rural households & land restoration**.
  - US$ 100 million grant fund (TLGF) → technical support & early stage costs for **renewable energy & sustainable agriculture**.
## Breaking down SDG 13
### Funding climate action

| 13.a | Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible |
| 13.a.1 | Mobilized amount of United States dollars per year between 2020 and 2025 accountable towards the $100 billion commitment |

- **Estimation of NDC funding demand:**
  - **Project-based:**
    Estimation of demand based on the roadmap for GHG emissions reduction at the project level, without factoring interconnectivity between sectors.
  - **Sectoral-based:**
    Estimation of demand taking into account interconnectivity between sectors.

- **Options for NDC funding:**
  - State National/Regional Budget
  - Grants (bilateral/multilateral)
  - Other legitimate sources (philanthropy, CSR)
Breaking down SDG 13
Women, youth, local, marginalized

<table>
<thead>
<tr>
<th>13.b</th>
<th>Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.b.1</td>
<td>Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities</td>
</tr>
</tbody>
</table>

- Indonesia’s NDC indicators are still being revised in order to adequately identify, involve, and mobilize small and medium enterprises as well as the informal sector for climate change adaptation and mitigation → currently too focused on large-scale industries.

- Illustration: the plastic recycling industry employs 300,000 people, outside of the hundreds of thousands of scavengers; 134 member enterprises of the Indonesian Plastic Recycling Association (ADUPI) are able to recycle 400,000 tons of plastic annually for domestic demand as well as export → the government should capitalize, connect, and build capacity for climate action.

- A circular economy (reuse, refurbish, remanufacture, recycle → zero waste) should replace the prevailing linear economy (take, make, dispose → wasteful).
In 2017, the Institute for Essential Services Reform (IESR) interviewed Indonesian RE associations and developers and received among others the following insight:

- Lack of dialogue between government and developers to synchronize perspectives on cheap electricity and conducive RE investment climate in Indonesia
- Bankability and return of investment are still primary issues for investors in RE development
- Interest rates offered by local banks to developers (12%) are much higher than that offered by foreign banks (3%)
- Lack of support and initiatives from PLN as SOE in charge of national electricity provision → developers feel it difficult to develop RE for outlying regions and industry
Renewable energy
Legislative outlook

• RE is currently 7% of national energy mix, and RE growth is still low (0.4% per year –IESR)
• Downside of RE regulation:
  – Unpredictable changes in regulation for RE purchasing guidelines (Permen ESDM No. 12/2017 jo No. 48/2017; Permen ESDM No. 50/2017)
  – Discontinuation of RE incentive: Feed in Tariff (FiT)
• Upside of RE investment: 68 RE Power Purchase Agreement (PPA) contracts between PLN and private developers (total capacity 700 MW) and 3 Letters of Intent (LoI) with foreign developers
• There must be a strengthening of roles:
  – Government: policy innovation, provide R&D, synergy between ministries/bodies
  – Financial institutions: RE funding, lower local interest rates
  – Developers: competitive tariffs, increased quality of power infrastructure
  – PLN: better cooperation with private sector, Public Service Obligation (PSO)
Renewable energy
Legislative intervention

• In 2016, Commission VII proposed a 1.1 trillion rupiah subsidy for renewable energy (around 80 million USD) but was overturned by the Budget Committee.

• Commission VII is in the process of drafting a Renewable Energy Law to fill in currently existing regulational gaps.

• AirQualityAsia in collaboration with the Green Economy Caucus is planning a Renewable Energy Business Leaders Roundtable hosted at the Indonesian House of Representatives.
Energy access
Electrification ratio and forecast

• Electrification ratio targets (RUPTL 2017–2026): 92.75% (2017) → 96.6% (2019) → 99.7% (2025)

• Electrification ratio targets for 6 easternmost provinces (Nusa Tenggara Barat, Nusa Tenggara Timur, Maluku, Maluku Utara, Papua, Papua Barat): ± 90% by 2020

• Electricity consumption per capita (996.83 kWh/capita) is still 80% of the 2019 National Midterm Development Plan target (1,250 kWh/capita)
Energy and health
Overview

- Land transportation contributes around 12% of total national CO₂ emissions, and almost 90% of urban air pollution (CO, HC, NOₓ, SOₓ, PM, O₃)

- 90% of transportation emissions comes from road transportation

- 70% of city pollution comes from the transportation sector

- Government’s burden on fuel subsidy (data for revised state budget 2017):
  - National consumption of subsidized fuels is 16.11 million KL for gasoline; 15.5 million KL for diesel; 0.61 million KL for kerosene

- IEA 2016: Indonesia is ranked third globally for premature deaths due to air pollution
Majority of air pollution in Jakarta (below) is from vehicle emissions

**Major Sources of Air Pollution in Jakarta (2015-2040)**

- **SO₂**
  - 21% (Vehicle)
  - 7% (Industry)
  - 2% (Domestic)
  - 72% (Total)

- **NOₓ**
  - 26% (Vehicle)
  - 4% (Industry)
  - 3% (Domestic)
  - 71% (Total)

- **PM₁₀**
  - 25% (Vehicle)
  - 1% (Industry)
  - 71% (Total)

- **SO₂**
  - 21% (Vehicle)
  - 7% (Industry)
  - 2% (Domestic)
  - 72% (Total)

**Energy and Health Comparison: SE Asia & Jakarta**

[Graph showing energy consumption and health implications in SE Asia and Jakarta]
Energy and health
Comparison of air pollution mortality rate

Source: IEA 2016
The population of Jakarta is 9,607,787 (2010) and 57.8% of the population suffers from various air pollution-related diseases:

- 1,210,581 people suffer from asthmatic bronchiale (compare with 500,000 people from Ostro’s research in 1994)
- 173,487 people with bronchopneumonia
- 2,449,986 people with ARI
- 336,273 people with pneumonia
- 153,724 people with COPD
- 1,246,130 people with coronary artery diseases

**Total health cost:** IDR38.5 trillion / USD54 billion (compare with USD220 million in 1989 -> Resosudarmo & Napitupulu 2004)
Energy and health
Outdoor & household exposure

Outdoor air pollution in cities in Jakarta, Indonesia, annual mean PM$_{2.5}$ ($\mu$g/m$^3$) 2010

In 2010, Jakarta had an annual mean PM$_{2.5}$ level that was above the WHO guideline value of 10 $\mu$g/m$^3$.

Percentage of Deaths From Ischaemic Heart Disease, Stroke, Lung Cancer, COPD, ARI (2012)

- 29% (164,314 out of total 566,600) Attributable to Household Air Pollution

In Indonesia, about 45% percent of an estimated 25,300 child deaths due to acute lower respiratory infections is attributable to household air pollution.

Source: WHO 2015
Energy and health
Adoption of Euro 4 standard

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- Intensive dialogue about Roadmap Fuel Economy - Vehicle Emission Standard - Euro 4:
  - A variety of multi-stakeholder consultation meetings and consignment
  - Policy Dialogue "readiness refinery in implementing the Euro 4 standard in 2016":
    - Jakarta
    - Balongan refinery
    - Balikpapan refinery
- Preparation of NA Vehicle Emissions Standard - Euro 4
- Implementation of Vehicle Emission Standard - Euro 4 in 2016 gradually:
  - Modifications Balongan and Balikpapan refinery to supply fuel berstandard Euro 4 in several major cities.
  - The Ministry of Finance and the House of Representatives to discuss alternative financing / funding up grade / modification Refinery.
  - Donor agencies to help alternative financing / funding up grade / modification Refinery.
  - Breathe Easy Jakarta Program tentang penerapan Vehicle Emission Standard Euro 4 di Jakarta dengan menggunakan BBG.
- Adoption of Euro 5 nationally in 2025.
The Green Economy Caucus
Promoting green legislation, collaboration

The GEC consists of members from 3 Parliamentary Commissions (Commission VII, Commission XI, and Commission I) and 5 different parties (Golkar, PDIP, Gerindra, HANURA and PAN).

COP 21:
Parliamentary Forum at Pavilion Indonesia;
SSE Leaders Luncheon on Climate Change;
Parliamentary Meeting with Nordic States

Bali Clean Energy Forum 2016

Dialogue Series: Paris Agreement and the Way Forward for Indonesia

National Waste Day

Innovative Finance Forum: Sustaining Indonesia’s Tropical Landscape

GLOBE 1st Climate Change Summit, London

Climate Parliament Gathering, Shanghai, China

Climate Asia Report Launch

REDD+ Workshop with UNORCID: Capacity Building for Legislative Staff Members (4 batches)
The Green Economy Caucus
Promoting green legislation, collaboration

On February 21 2014, the Green Economy Caucus signed an MoU with GLOBE International.

The GEC with Andrew Mitchell (Global Canopy Programme), Pavan Sukhdev (GIST Advisory), and Setya Novanto (Chair of the Golkar Party Parliamentary Faction).

GEC members, Dewi Coryati and Mercy Barends, elaborate during a legislative Q&A session.

GEC members, Aryo Djojohadikusumo and Satya Widya Yudha at the Parliamentary Forum in Pavilion Indonesia, COP 21.
The Green Economy Caucus
Promoting green legislation, collaboration

Chairmen of Commission VII and Chairman of the GEC ratify the Paris Agreement along with heads of various state ministries in a public session at the House of Representatives.

The GEC at the launching of the Tropical Landscapes Finance Facility (TLFF) with UN body leaders, government, parliament, key sector players. (left)

The GEC in collaboration with AirQualityAsia at inaugural meeting on air quality. (right)
THANK YOU

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