BETTER LATE THAN NEVER: SEMARANG PATHWAY TOWARDS ENERGY EFFICIENCY AND RENEWABLE ENERGY

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Low Air Quality = High Emission..??
INDONESIAN COMMITMENT IN GHG EMISSION REDUCTION

G20-2009 - Target 2020
- 26% (usaha sendiri)
- 15% (dukungan internasional)

COP 21-2016 - Target 2030
- 29% (usaha sendiri)
- 12% (dukungan internasional)
GHG EMISSION
Total GHG emission for 2020 is 6,099,129.44 ton CO$_2$e.

Energy (transportation, industry, power plant, and domestic use) become biggest polluted sector.

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>2030 (tCO2e)</th>
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<tbody>
<tr>
<td>Energy</td>
<td>3,270,011.20</td>
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<tr>
<td>Transportation</td>
<td>331,318.40</td>
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<tr>
<td>AFOLU</td>
<td>34,500.00</td>
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<tr>
<td>Waste</td>
<td>45,943.15</td>
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<tr>
<td>Accumulated Reduction</td>
<td>3,681,762.75</td>
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<tr>
<td>Yearly BAU</td>
<td>13,842,511.12</td>
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<tr>
<td>Accumulated BAU</td>
<td>124,365,294.38</td>
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<tr>
<td>Reduction (%) to yearly BAU</td>
<td>26.60%</td>
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<tr>
<td>Reduction (%) to accumulated BAU</td>
<td>2.96%</td>
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</tbody>
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EMISSION REDUCTION
- National target (Presidential Decree) 29%
- 19 mitigation action should implemented consistantly until 2030
Trans Semarang already has 11 corridors since 2009.
Reducing Emissions in other Sectors or Buildings with the existence of Mayor Decree No. 24 of 2019 concerning Green Buildings which regulates electricity, air, energy efficiency, green open space, and renewable energy in buildings.
1. WtE Land Fill Gas (0.8 MW)
2. WtE Jatibarang (15-20 MW)
RENEWABLE ENERGY POTENTIAL IN SEMARANG

1. Waste to Energy 498 MW
2. Wind 2,6 kW / location
3. Micro/Mini Hydro 4,6 MW
4. Solar PV 18,7 MW
5. Biomass 21,3 MW

Source: Renewable Energy Research, Development Planning Agency, 2019
PROVIDE MORE URBAN GREEN OPEN SPACE \(\rightarrow\) \(\pm\) 25,000 tCO2e
IN 16 DISTRICTS (\(\pm\) 259 URBAN GREEN OPEN SPACE)
NATURAL GAS

7,500 household using natural gas directly from gas pipe (Semarang Timur and Semarang Barat).
1. Fossil-fuel energy still cheaper than renewable energy
2. Less funding resources for R n D
3. Reliability
4. Technology gap – need more effort
5. Incentive and disincentive mechanism are not clear yet
6. Electricity over supply – coal power plant