Launch of the SDG 7 Road Map for Thailand

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SDG7 Roadmap for Thailand – the journey

Inception workshop → Data collection → Modelling and analysis → Scenario consultation workshop

Launch of the roadmap ← Roadmap review ← Roadmap development
Energy Situation in 2021

Thailand’s 2021 status for the SDG 7 indicators and GHG emissions

ACCESS TO MODERN ENERGY

99.8%
Population with access to electricity in 2021

85%
Population with access to clean cooking in 2021

RENEWABLE ENERGY

11.7% of TFEC
Excluding traditional biomass usage in residential cooking and heating

ENERGY EFFICIENCY

4.3 MJ/USD
Primary energy intensity measured in terms of primary energy and GDP (PPP, 2017)

GHG EMISSIONS

222.4 MtCO₂-eq
Considering the energy sector only
Scenarios

The baseline – Business As Usual (BAU) Scenario

Assessing the gap – Current Policy Scenario (CPS)

Meeting the SDG and NDC targets – Sustainable Development Goal (SDG) Scenario

Beyond 2030 scenarios – Carbon Neutral 2050 scenario; and

Net Zero Emission 2065 scenario
Access to Clean Cooking in 2030

- Universal clean cooking is unlikely to be achieved under the current policy settings
- The gap is projected to be **7 per cent in 2030**

- NEXSTEP suggests **electric cook stoves** as the most appropriate long-term clean cooking solution. It will help in achieving Carbon Neutral 2050 and Net Zero GHG emissions 2065 targets.
# Energy Intensity (TPES MJ/USD) in 2030

<table>
<thead>
<tr>
<th>Scenario Description</th>
<th>Base Year Value</th>
<th>SDG 7.3 Target for Thailand (2010 - 2030)</th>
<th>Global Suggested Improvement Rate (UNSD, 2022)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thailand Baseline annual reduction rate (1990 - 2010)</strong></td>
<td>4.4 to 5.1</td>
<td>-2.4% annual reduction</td>
<td>-3.4%</td>
</tr>
<tr>
<td><strong>SDG 7.3 target for Thailand (2010 - 2030)</strong></td>
<td>4.3 to 3.1</td>
<td>-3.4%</td>
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<td><strong>Global Suggested Improvement rate (UNSD, 2022)</strong></td>
<td>4.3</td>
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Note: The target cannot be calculated from this increase.
Energy saving compared to BAU in 2030

-35,000
-30,000
-25,000
-20,000
-15,000
-10,000
-5,000
-0
-10,000
-15,000
-20,000
-25,000
-30,000
-35,000

B. Current Policy Scenario

C. Sustainable Development Goal Scenario

-21,146

-9,062

SDG 7.3 target achieved

Reduced energy demand

- Further enhancement of energy efficiency in the SDG scenario will reduce final energy demand
- This will reduce energy demand, requiring lesser investment in energy systems.
- Also reducing GHG emissions
Renewable Energy Capacity Addition 2030

- **Fossil fuel** 58%
- **Hydro** 5%
- **Solar** 19%
- **Wind** 8%
- **Biogas** 1%
- **Waste** 2%
- **Biomass** 6%
- **PSH** 1%
- **Renewables** 42%

**SDG Scenario**

- Hydro 5%
- Solar 19%
- Wind 8%
- Biogas 1%
- Waste 2%
- Biomass 6%
- PSH 1%

**Refers to additional compared to CPS**
Emissions in 2030

- Thailand has committed to reducing GHG emissions in the energy sector by 30 per cent unconditionally and 40 per cent conditionally.
- Thailand will be able to achieve the unconditional NDC target by 2030.
- Technically and financially possible to enhance efforts to achieve the conditional NDC target
  - by accelerating the implementation of energy saving measures in order to align with the global improvement target of 3.4 per cent
Beyond 2030

Carbon Neutrality by 2050
Net Zero Emissions by 2065
Important measures beyond 2030

- To achieve its carbon neutrality in 2050, Thailand needs to focus on reducing carbon emissions from the energy sector.
- Building on the SDG scenario and extending the timeframe to 2050, this scenario suggests some additional measures.

<table>
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<tr>
<th>Residential and commercial sectors</th>
<th>Transport sector</th>
<th>Industry and agriculture sectors</th>
<th>Power sector</th>
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<tr>
<td>• 100% electric cooking</td>
<td>• Phasing down ICE engines</td>
<td>• Efficient electrical equipment</td>
<td>• Coal phase down by 2040</td>
</tr>
<tr>
<td>• Efficient electric appliances</td>
<td>• Higher share of electric vehicle</td>
<td>• Fuel substitution to, biomass, and/or biofuel</td>
<td>• Coal phase out by 2050</td>
</tr>
<tr>
<td>• Improvement of thermal efficiency in all building types</td>
<td>• Solar pumping for irrigation</td>
<td>• Increasing share of RE capacity to 74% by 2050</td>
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<tr>
<td></td>
<td></td>
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<td>• Carbon removal technologies</td>
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To achieve its carbon neutrality in 2050, Thailand needs to focus on reducing carbon emissions from the energy sector. Building on the SDG scenario and extending the timeframe to 2050, this scenario suggests some additional measures.
GHG emissions beyond 2030

• Emissions will drop rapidly after 2040 due to
  • Phasing out coal-based power generation
  • Phasing down ICEs
  • Increasing share of EVs
  • Increasing RE in power generation
  • CCS application
Investment cost

Cumulative investment cost
- To 2030: 30.9 billion US$
- To 2050: 44.5 billion US$
- To 2065: 44.5 billion US$ (same as 2050)

Net financial return
Marginal abatement cost curve (MACC)
Policy recommendations

• Adopt electric cookstoves to close the clean cooking gap
• Further strengthen the energy efficiency in the transport and industry sectors to achieve the SDG 7 target
• Accelerate transport electrification and biofuel blending strategies to gain multi-fold benefits
• Decarbonise the power supply by 2050 to set the path for net zero emissions by 2065
Thank you