

Thailand

ECONOMIC MONITOR

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*Boosting Energy Efficiency
for Sustainable Growth*

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outline

Boosting energy efficiency – producing more with less (energy).

- ① Thailand has actively adopted policy measures for energy efficiency.
- ① But energy intensity has been increasing over the past decade.
- ① The government is committed to reducing energy intensity under the EEDP.
- ① Energy efficiency continues to face major challenges in Thailand.
- ① Harvesting the remaining potential of energy efficiency requires
 - strengthening EE regulations
 - increasing use of fiscal measures
 - developing and implementing innovative financing mechanisms, and
 - reforming institutional arrangements



Thailand has actively adopted policy measures for energy efficiency.

⦿ **Regulatory Measures**

- Energy Conservation and Promotion Act (ENCON Act)
- Energy manager programs (mandatory)
- Building codes (started in 1995 and improved in 2010)
- Appliance standards

⦿ **Fiscal Measures**

- Fuel tax and oil fund levy
- Tax incentives
- Energy conservation fund

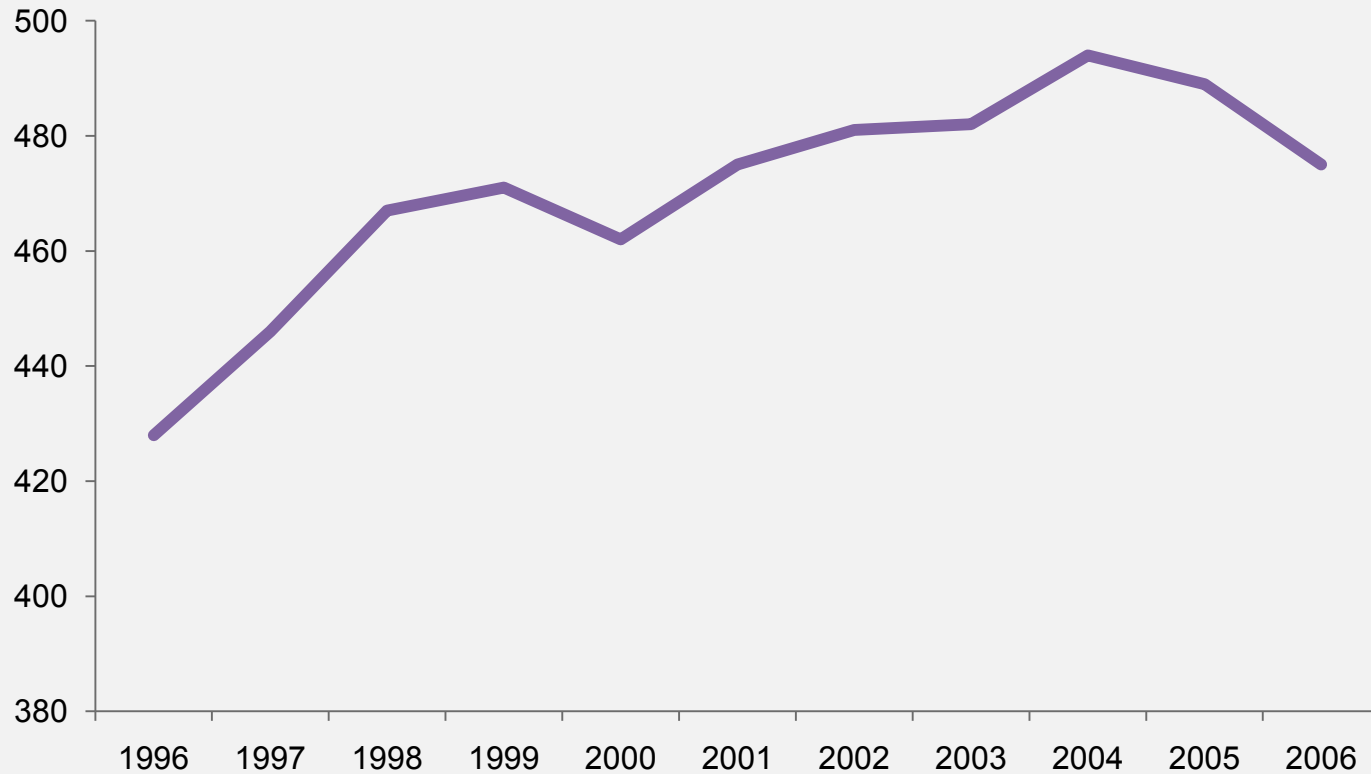
⦿ **Other measures such as utility EE/DSM program, R&D, technology transfer, and public education.**



current policy environment

However, energy intensity has been increasing over the past decade.

Ton of oil equivalent/\$M GDP



Source: Wang and others 2010.

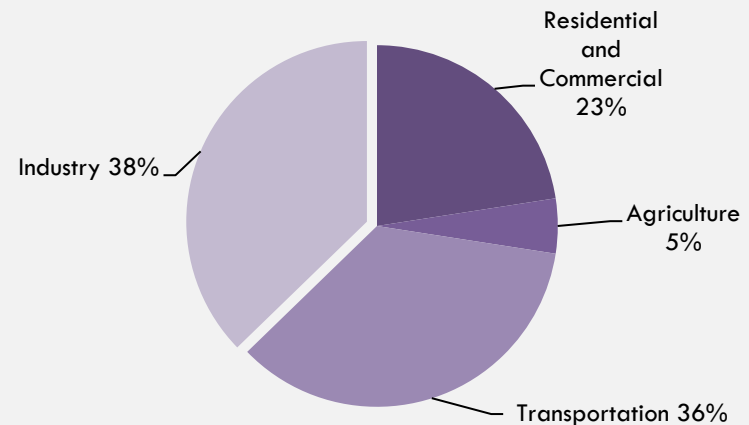


current policy environment

The government is committed to reducing energy intensity.

- ⦿ EE Target in Energy Efficiency Development Plan (EEDP): Reduce energy intensity by 25 percent from 2005 to 2030.
- ⦿ The transport sector presents the largest energy savings, followed by the industrial and building sectors.
 - **Transport sector:**
 - Improving fuel efficiency of vehicles (e.g. fuel economy standard, car labelling, eco driving)
 - Modal shift to public transport.
 - **Industry sector:** non-metal and food industries are estimated to have the largest potentials.
 - **Building sector:** 1/3 of the potential energy savings could come from reduction in electricity use in large and medium-sized commercial buildings.

Final Energy Consumption by Sector in 2009



Source: Department of Alternative Energy Development and Efficiency (DEDE)



Efforts to increase energy efficiency continue to face major challenges.

- ◎ EE market barriers and failures
 - Low or underpriced energy
 - A lack of institutional champion and weak institutional capacity
 - Absent or misplaced incentives
 - Consumer preferences, limited awareness, and information
 - Higher up-front costs, financing barriers and high transaction costs
- ◎ Specific barriers in Thailand
 - The need for effective mandatory regulations
 - Difficulties in access to financing, particularly to SME and ESCOs
 - Institutional fragmentation
- ◎ Harvesting the remaining potential of energy efficiency requires strengthening EE regulations, increasing use of fiscal measures, developing and implementing innovative financing mechanisms, and reforming institutional arrangement.



Improving Energy Efficiency in the Transport Sector.

○ Implement Fuel Economy Standards

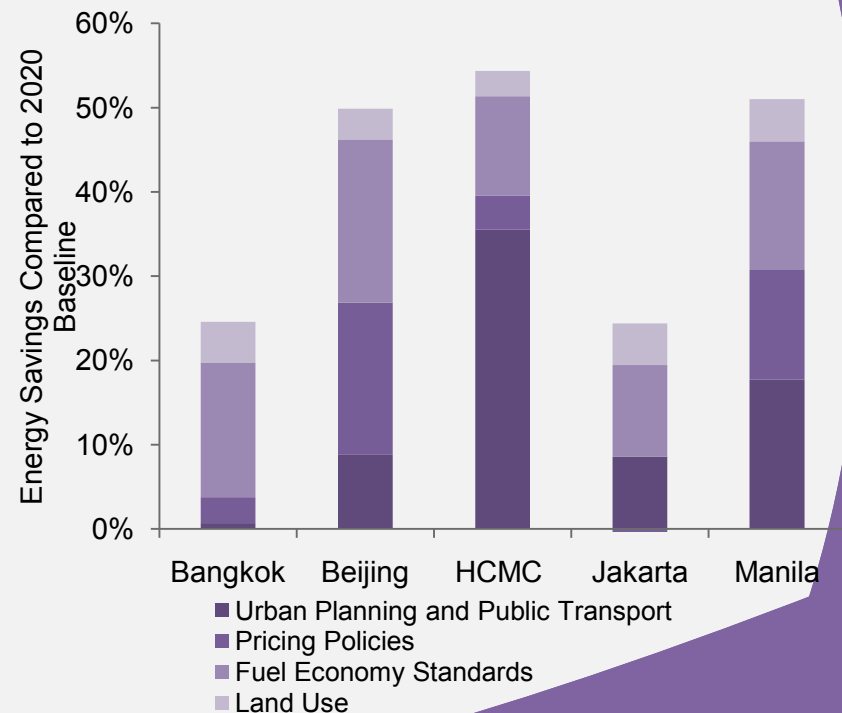
- Improving automobile fuel economy standards to the current EU level could make the biggest difference, contributing to more than 60 percent of energy savings in the transport sector in Bangkok.

○ Increase Fuel Tax and Road Pricing

- Powerful fiscal instruments to reduce energy consumption in the transport sector.

○ Expand Public Transport

- Expand the role of rail in freight transport and long-distance passenger services.
- Expand Mass Rail Transit and improve its integration with bus services.
- Increase the speed and quality of bus services.



Source: Wang and others 2010.



the way forward

Improving EE in the Industrial and Building Sectors: Strengthening regulations and increasing use of fiscal measures.

- ◎ Mandating Industrial Energy Performance Targets
 - EE responsibility contracts between the government and the key energy-intensive industries.
 - Linking financial incentives/disincentives with EE performances.
 - A performance-based approach, rather than an input-based approach (e.g. energy manager program).
- ◎ Improving building code enforcement
 - Ensure closer coordination among relevant agencies and provide sufficient resources to government agencies for enforcement.
 - Accredite third party to verify that the code was in fact followed when the building is designed, constructed, and operated.
 - Publicize building compliance and EE performance with the names of building owners, operators and designers.
 - Provide training and financial incentives to key stakeholders.



Developing and Implementing Innovative Financing Mechanisms.

- ⦿ Leverage the EE Revolving Fund by targeting it at medium and large-scale industrial enterprises and tying financing to industrial energy performance standards.
- ⦿ Adopting **standard offer** approach that can be managed by competitively selected performance-based **Energy Efficiency Utility**.
 - **Standard Offer:** A mechanism for acquiring demand-side resources (energy efficiency and load management) under which a utility or a public agency “purchases” energy and/or demand savings using a pre-determined and pre-published rate (THB/kWh and/or THB/kW).
 - **Energy Efficiency Utility:** The government can competitively select a fund manager, sign a time-bound performance-based contract with them, and require them to target at a specific market segment.
- ⦿ Provide partial risk guarantee for ESCOs.



Reforming institutional arrangements.

◎ International Experience

- Given the fragmented nature of EE measures, a national institutional champion with clear mandates, necessary authorities, and sufficient resources is essential for effective coordination and implementation.
- The sector and provincial/local levels need to be assigned with clear responsibilities with incentives and penalties to ensure effective implementation.

◎ Recommendations

- More frequent meetings of the National Energy Policy Committee (NEPC) and a strengthened role for DEDE could help enhance coordination.
- It is important to strengthen EE policy coordination and implementation at the sector and local levels.



Scaling up renewable energy.

- ◎ The Renewable Energy Development Plan (REDP) sets a target to reach 20% of final energy demand to be met by RE by 2022.
- ◎ RE for power and heat is on track.
 - The RE adder program has been instrumental to stimulate investment in RE for power.
 - Implementation support may be needed to realize the signed contracts from SPPs/VSPs.
- ◎ Alternative fuels for transport is lagging.
 - Policies need to be flexible and REDP targets need to be adjusted to mitigate the impacts on food security.
 - Biofuel policies should proceed with caution and be part of a portfolio of policy measures to reduce oil consumption in the transport sector.



conclusions

Policy coordination remains a key challenge to achieve greater energy efficiency in Thailand

- ⦿ **Transport sector:**
 - Increase fuel economy standards,
 - Increase use of fuel tax and road pricing, and
 - Improve public transport
- ⦿ **Industry: Mandate industrial energy performance targets**
- ⦿ **Building: Improve building codes enforcement**
- ⦿ **Implementing innovative financing mechanisms**
 - Use revolving EE fund for large & medium enterprises
 - Adopt standard offer approach managed by competitively selected performance-based Energy Efficiency Utility
 - Provide partial risk guarantee for ESCOs
- ⦿ **Reforming institutional arrangement**
 - Strengthen NEPC function and the role of DEDE.
 - Improve EE policy coordination and implementation at the sector and local levels
- ⦿ **Beyond EE: Scaling up RE**





Thank you!

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