



# *Policy Studies on Energy and Environment*

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# *Policy Studies on Energy and Environment*

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- Energy situation in Thailand
- Thailand energy policy
- Energy and environmental policies
- Policy studies on energy consumption efficiency
- Policy studies on renewable energy development
- Chulalongkorn University's postgraduate program initiative on environment, development and sustainability (EDS) study



# *Energy situation in Thailand*

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- Very limited reserve of oil, gas and coal
- >65% total energy consumption from imported energy, mostly fossil fuels, mainly crude oil.
- Final energy consumption growth high during 2002-4, declining in 2005.
- Transportation and manufacturing are the 2 sectors with highest energy consumption
- Energy consumption value: 15% of GDP in 2004 and 16.8% of GDP in 2005



# *Thailand Energy Policy*

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- Based on 2 concepts
  - Energy security
  - Balance of energy supply and energy demand



# *Thailand Energy Policy*

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- Promote energy usage efficiency, energy saving, development and usage of alternative energy
- Promote development of sources of energy and the use of clean energy
- Promote research on alternative and renewable energy



# *Energy and environmental policies*

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- Green house gas reduction through increase in energy consumption efficiency and renewable energy development
- Good opportunity on Clean Development Mechanism (CDM) through many energy conservation and renewable energy development projects, e.g. biomass, biogas, municipal solid waste projects.



# *Energy and environmental strategy long term goals*

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- Increase energy efficiency by decreasing energy elasticity, measured by ratio of energy usage growth to economic growth, from 1.4:1.0 in 2004 to 1.0:1.0 in 2011
- Increase share of renewable energy usage from 0.5% of commercial primary energy in 2003 to 8% by 2011



# *Energy and Environmental Research units at Chulalongkorn University*

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- Institute of Energy Research
- Institute of Environmental Research
- Institute of Transportation
- Petroleum and Petrochemical College
- Faculty of Engineering
- Faculty of Science
- A few other Center of Excellence and Research Units, e.g. CE on solar energy



# *Collaborations with other government agencies*

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- Ministry of Energy
- Ministry of Natural Resources and Environment
- Ministry of Science and Technology
- Ministry of Industry
- NSTDA



# *Policy studies on energy consumption efficiency*

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- Increase efficiency in consumption in transportation and industrial sectors
- Campaign and promote efficient energy usage to the public
- Build stability of energy reserve
- Improve energy management and integration



## *Policy studies on increasing efficiency in transportation energy consumption-- examples*

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- Changing transportation modes, e.g. from car to track?
- Energy conservation car?
- Mass transit systems?
- Cargo transport systems?
- Tax measures?



# *Policy studies on renewable energy development*

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- Gasohol: increase ethanol production from tapioca and sugar industry for gasohol
- Bio-diesel: increase oil palm plantation for bio-diesel production
- Mini-Hydro: small sized electricity generator at irrigation reservoir
- Waste to energy: developing electricity generation from municipal waste



## *Policy studies on renewable energy development (cont.)*

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- Small power producer: electricity generation from renewable energy sources, e.g. biomass, biogas, wind energy, solar energy
- Very small power producer: electricity generation at max. 10 MW from renewable energy sources, connecting to distribution grid



## *Policy studies on renewable energy development (cont.)*

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- Promote renewable energy use as thermal energy: encourage agriculture industries to use biomass and biogas for heat generation in production process, e.g. biomass cogeneration plant in sugar and palm oil industries, biogas use in starch, palm oil and food industries



*Graduate School of Chulalongkorn University  
International Post-Graduate Program (M.A. and Ph.D.)  
“Environment, Development and Sustainability (EDS)”*

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A consortium among teaching and research units of the university concerning policy aspects of energy and environment

- Environmental Research Institute
- Energy Research Institute
- Social Research Institute
- Faculty of Political Science
- Faculty of Economics
- Faculty of Architecture
- Faculty of Communication Arts
- Global Change System for Analysis, Research and Training (START) Regional Center



# *International Post-Graduate Program*

## *“Environment, Development and Sustainability (EDS)”*

### *Focuses and general description*

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- Climate and atmospheric changes mitigation and adaptation
- Sustainable energy development and policy
- Integrated area planning and management
- Multisectoral resource management
- Vulnerability science and adaptive policy framework



# *International Post-Graduate Program*

*“Environment, Development and Sustainability (EDS)”*

*Needs and career path of our graduates*

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- Environment and natural resource policy analyses
- Social and community developments and sustainability
- Policy communication and extension
- Developmental policy legislation and governance
- Environmental and resource uses conflict resolution