

UN  **HABITAT**
FOR A BETTER URBAN FUTURE

Renewable Energy in Vietnam – Potentials for Sustainable Urban Development

ROAP HPM/CTA WORKSHOP

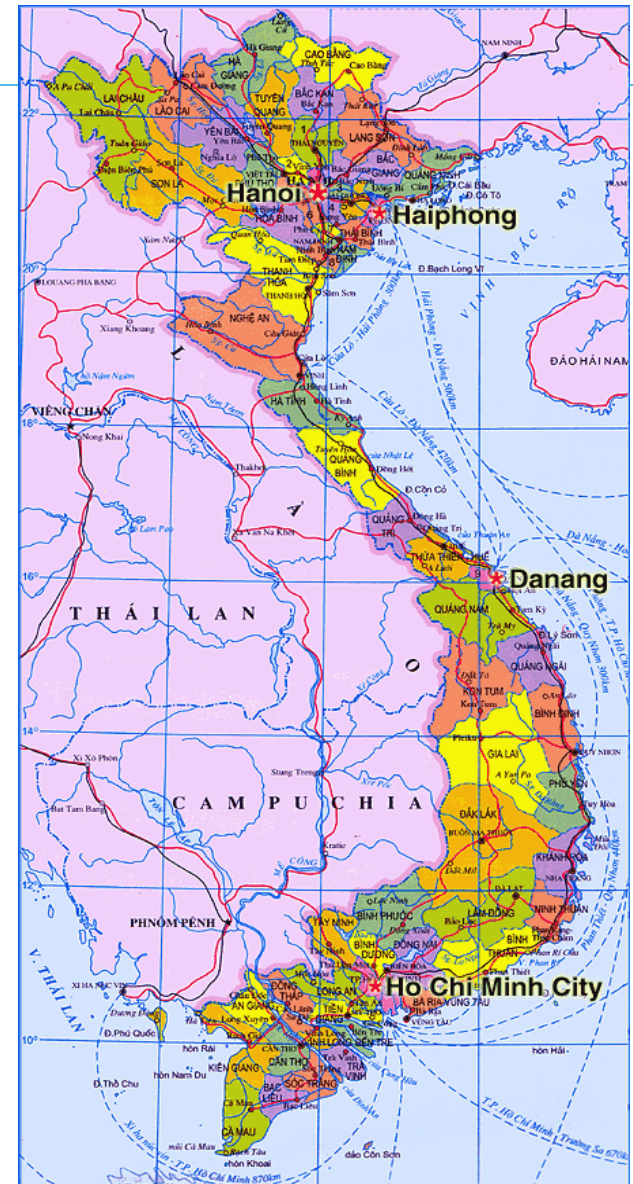
Integrating Field Experiences into Global Toolkits
and Normative Products

Fukuoka, 28 Sept – 1 Oct 2010

Presentation on Expert Group Meeting
Pham Thi Thu HUONG/CTA Vietnam

Overview

- ❑ Total population (2008): 86 millions
 - Urban: 24 millions (27.9%)
- ❑ According to orientations in the National Urban Development MP: urban size will increase 45% of the total population and 1.4% of the total area by 2020.
- ❑ Rapid urbanization/modernization process has promoted the increase of energy demand, special in mega-cities
- ❑ Commercial energy was increased by 12.4% while GDP was increased by 7.2%, annually during 1996-2006.



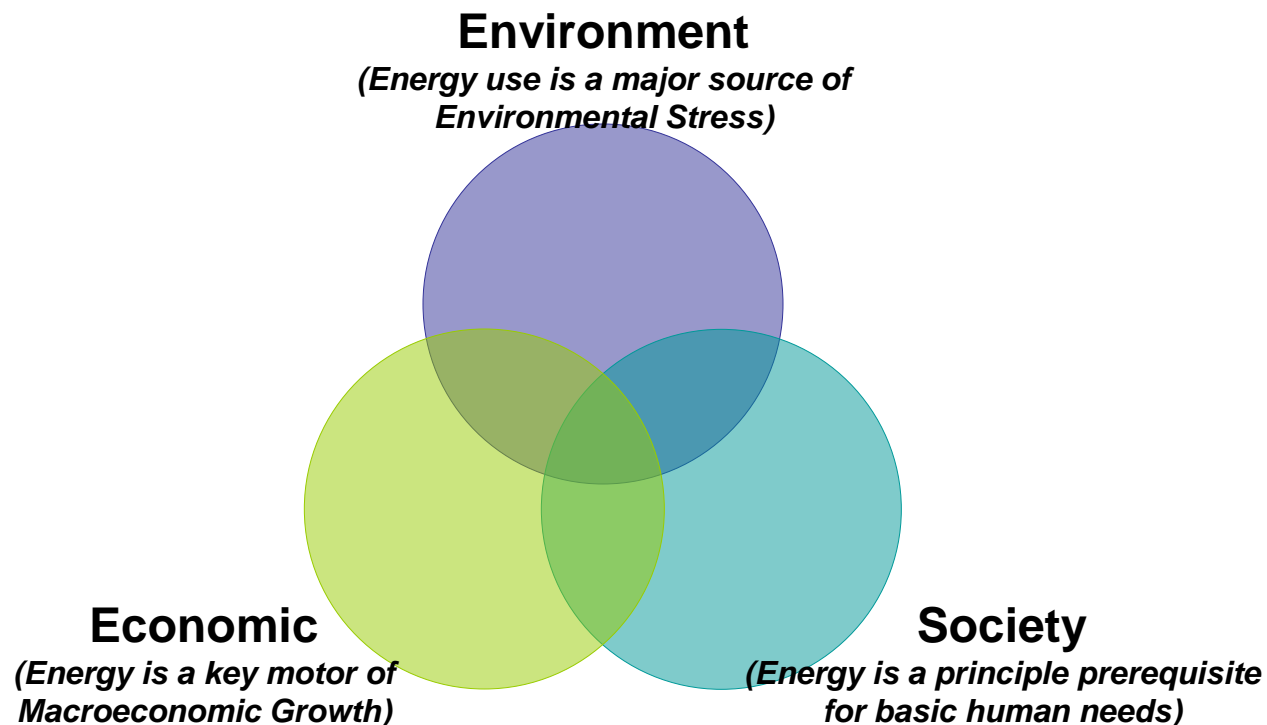
Energy use trends in Vietnam

- ❑ Energy use in the economy of Vietnam has changed from a traditional types to a model different types with four major uses of energy:
 - Industrial use for fuel
 - Industrial use of electricity
 - Use of petroleum for transport
 - Domestic use of electricity

- ❑ REMP Forecast Energy Demand by Sector by 2025:
 - Final commercial energy consumption per capita: 700-850kgOE
 - Energy consumption structure: industry (37.7%) , domestic (30.2%), transport (23.2%), services (8%), agriculture (0.9%)

Issues - Perspective

Energy and Sustainable Development: Deep linkages



Issues - Perspective

The relationship between energy extraction, processing and use with environmental quality

- Energy extraction,
- Energy processing
- Energy use

- Atmospheric pollution
- GHG emissions
- Principle source of trace heavy metals

Natural habitats
are disturbed

Challenges faced

- ❑ Shortages of natural resources
- ❑ Global economic crisis
- ❑ Climate change phenomena

Solutions

- ❑ Improvement of energy efficiency and energy savings
- ❑ Development of renewable energy source

Renewable Energy Technologies with Development in Vietnam– High Potentials

Solar water heater for households and business

Solar energy, most exploitable renewable source in Vietnam, because riches of sunshine: 1,800 – 2,600 hrs per year in average



Solar wind hybrid system for public lighting



Biogas in household's breeding-farm

Landfill gas recovery plant for power generation in large scale

Wasted sludge



Solid waste

Windy turbines in island commune



Vietnam is one of 14 most potential wind energy countries in the world. There are 10 local and international investors have registered for 12 projects on the windmill in Binh Thuan province, central region of Vietnam with total capacity more than 2.000 MW.

Thank you

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