

**ACCELERATING  
DEPLOYMENT OF  
CLEAN ENERGY  
TECHNOLOGIES**

S L RAO

MANILA

28<sup>TH</sup> JUNE 2007

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## Issues

1. Post Kyoto
2. Alternatives
3. Costs, Tariffs, Fiscal
4. Collaboration
5. Regulatory

## Post Kyoto

1. Inevitability of economic, energy, coal growth
2. Local need for clean environment
3. Not enough to satisfy developed countries
4. Ensure universal access and affordability

## Alternatives

- Renovation & Modernization of old plants to improve efficiency-more power for same emission?
- Hydro & mini-hydro-maximize capacity and generation but limited potential
- Nuclear-Lower cost Technology;High Power costs; Safety; nuclear waste; uranium availability and future costs

## Alternatives (2)

- Renewables: Wind- Padding of Costs? Of Capital Cost; unreliability for base load, equipment availability
- Coal: Existing technologies expensive in capital costs , efficiency losses, higher tariffs; Need to optimize
- Energy Efficiency in Buildings, Pump sets, etc.  
Thailand aims by 2011 at Energy growth to GDP growth of 0.85:1 vs. present 1.2:1

## Collaboration

- Regional Grid
- Buyer Cartel
- Standardize energy using equipment
- Standardize power units
- Exchange experiences in R & M
- Maximize Plant efficiencies
- Common standards for legal and technical information
- Joint R & D; Asia can well afford it; have local centres as well as main research centre

## Costs, Tariffs, Subsidies

- Tax Rebates on Equipment
- Taxation to encourage/discourage usage; e.g., CNG for transport
- Subsidies: identify targets; minimize distribution costs-e.g., 40% of subsidized kerosene in India diverted to adulterate diesel
- Encourage banks to lend on long tenures for energy efficiency

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## Regulatory Issues

- Independent Regulation of all energy
- Targets for subsidies
- Distribution Costs
- Coordination on all energy including fuel costs
- Domestic Gas usage and pricing for power
- Impose improved plant and distribution efficiencies