



# เส้นทางสู่นวัตกรรมสีเขียว

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## POWER DEVELOPMENT PLANS, PDP, in MW

Renewable Resource/PDP Period	2007	Projected 2022	Feasible Potential
Bio-mass/gas	1,650	9,720	possible
Hydro-power	56	770	much larger
Solar power	32	650+	too expensive
Wind power	1	1,290	10,000+

Adders, in Baht/kWh	Grid	Stand-alone	Remark
Bio-mass	0.50	1.50	too small
Hydro-power	0.80	1.80	too small
Solar power	8.00	9.50	too large
Wind power	3.50	4.50	suitable

## Bio-Diesel:

- Major problem of palm oil: energy v.s. food
- Alternative: Jatropha, GMO required to increase oil yield

**Spent Energy Conservation & Alternative Energy Development Fund:  
more than 50,000 M Baht**



## Inter-Disciplinary Knowledge for Policy & Planning

Energy = f (Economics, Environment), known as 3Es

Bio-Energy = f (Economics, Environment, Food, Water)



## Water Resources Management

### Stake-holders:

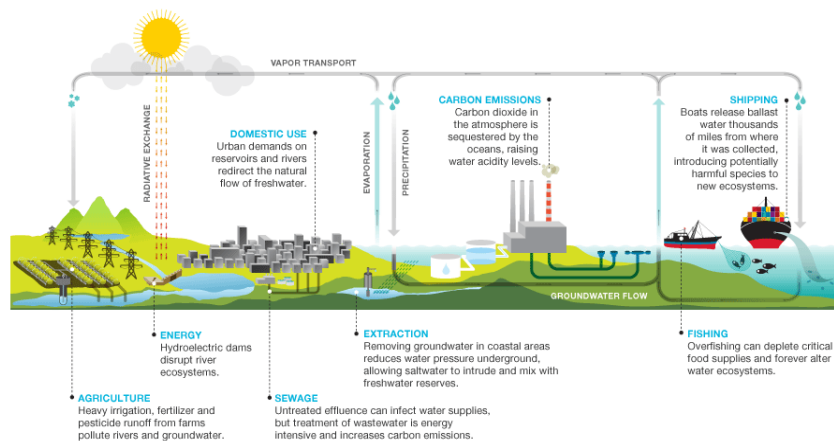
- Agriculture
  - Fisheries
  - Households
  - Town & rural areas
- Etc.

## River Basins Management

- Clear needs of stake-holders are first required.
- Universities along the river basins have closer contacts to the stake-holders

### 6.5 billion drops in the bucket

The hydrologic cycle has moved water around the world for thousands of years. But man's increasing interaction with that cycle has added several layers of complexity and consequence.



## NESDB co-ordinates Min. of

- Energy
- Environment & natural resources
- Finance
- Industry
- Agriculture
- etc.?

## INDEPENDENT

### Green Energy Research & Technology Development Fund

- Approx 0.1 % of revenues of all energy companies
- Indirect pollution taxes, especially CO2
- CSR
- Board of directors:

Representatives of contributors

Government representatives e.g. NESDB, MoF

Academics

### Successful Examples:

- EPRI, USA
- CRIEPRI, Japan





## Climate Change

- Increase of rain water
- Increase of sea level  
1 m within 30 years  
3 m within 50 years
- Floods mitigation measures

