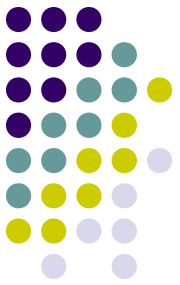
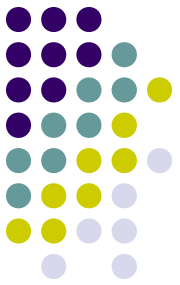


Power sector Development VS. Climate Justice
by
Witton Permpongsacharoen
Mekong Energy and Ecology Network (MEE Net)





MW

Power Demand: Projections vs. Actual 1992 – 2008

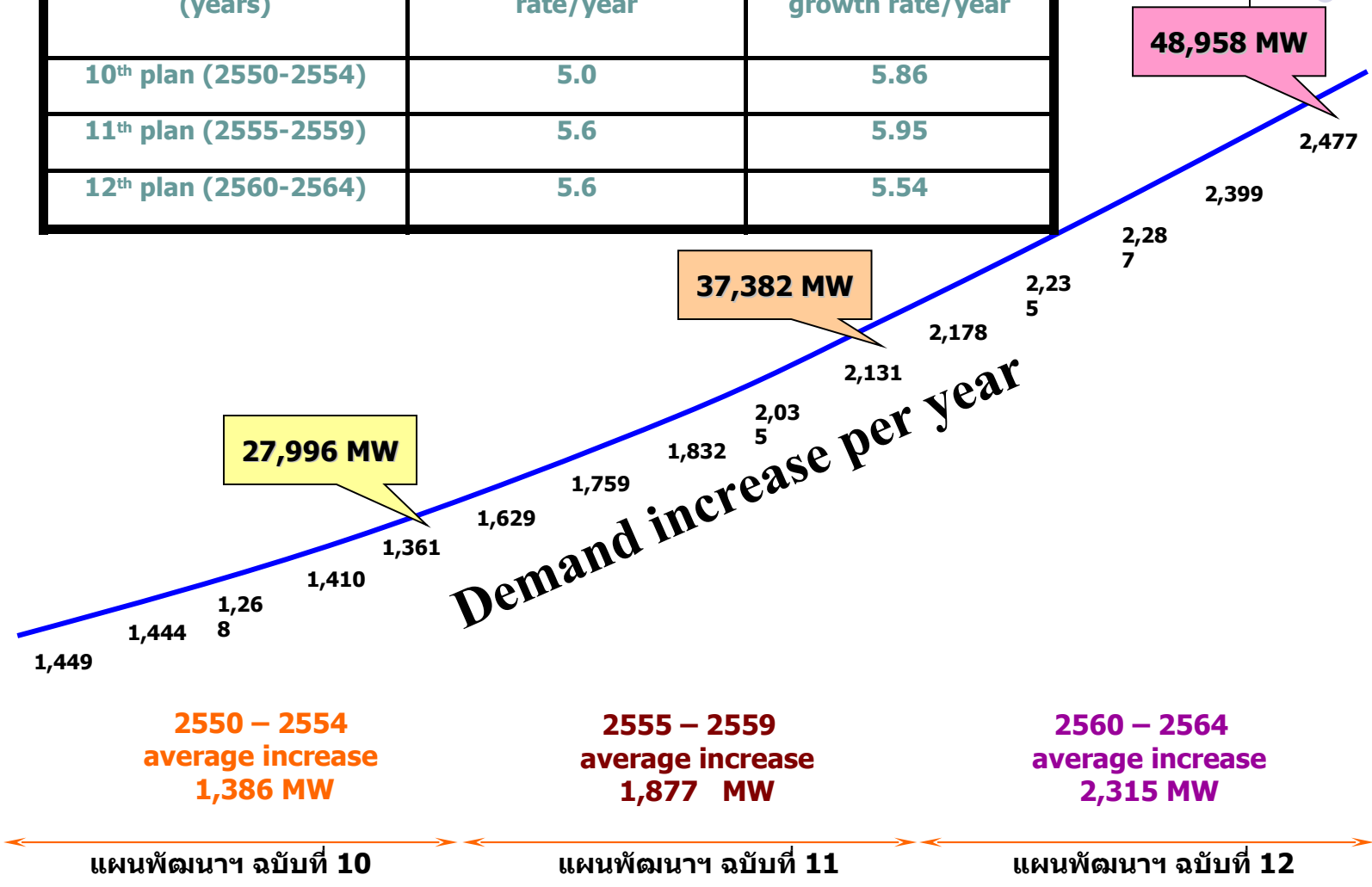
If no systemic bias, the chance of over-projecting demand 12 times in a row should be $1/4096!!$

Power demand projection Sep 2007 (PDP 2007 revision 1)



MW

Economic Development Plan (years)	Average GDP growth rate/year	Average demand growth rate/year
10 th plan (2550-2554)	5.0	5.86
11 th plan (2555-2559)	5.6	5.95
12 th plan (2560-2564)	5.6	5.54



Increases in Annual Peak Demand Actual vs. Forecast (Thailand)



Actual

Jan-07 Forecast

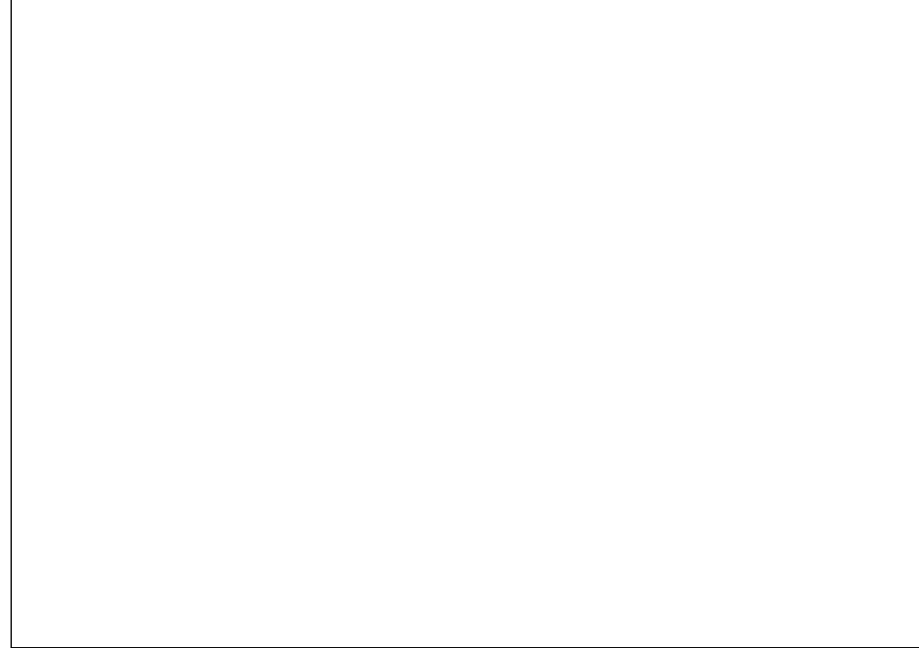
**Past averages:
20 yr = 844 MW
10 yr = 775 MW
5 yr = 988 MW**

15 yr average = 1,942 MW

15 yr average = 868 MW

Will our electricity
future look like this?
Unlimited demand?

Dam being promoted as renewable and clean energy



Mun river, Thailand

Pak Mon Dam electricity production annually since 1994-2007 (in GWh.)

Install capacity : 136 MW

Dependable capacity : 15% = 21 MW

399.26

Expected capacity

280 GWh.

Average 14 years =

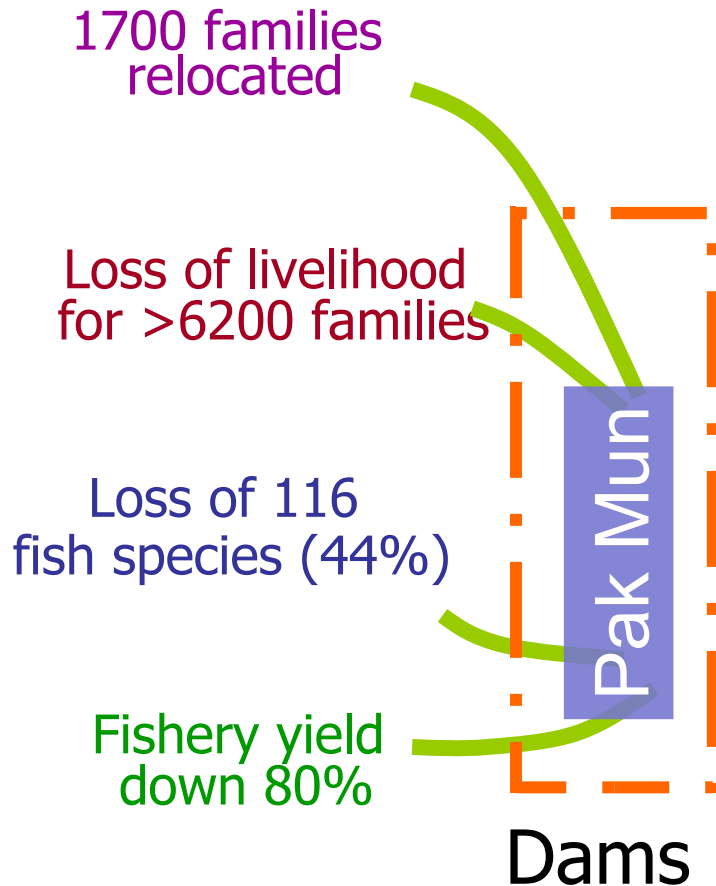
160.96 GWh

84.79

18.63

Electricity production and consumption (GWh)

Impacts of Pak Mun Dam alone



Siam Paragon

123

MBK

81

Central World

75

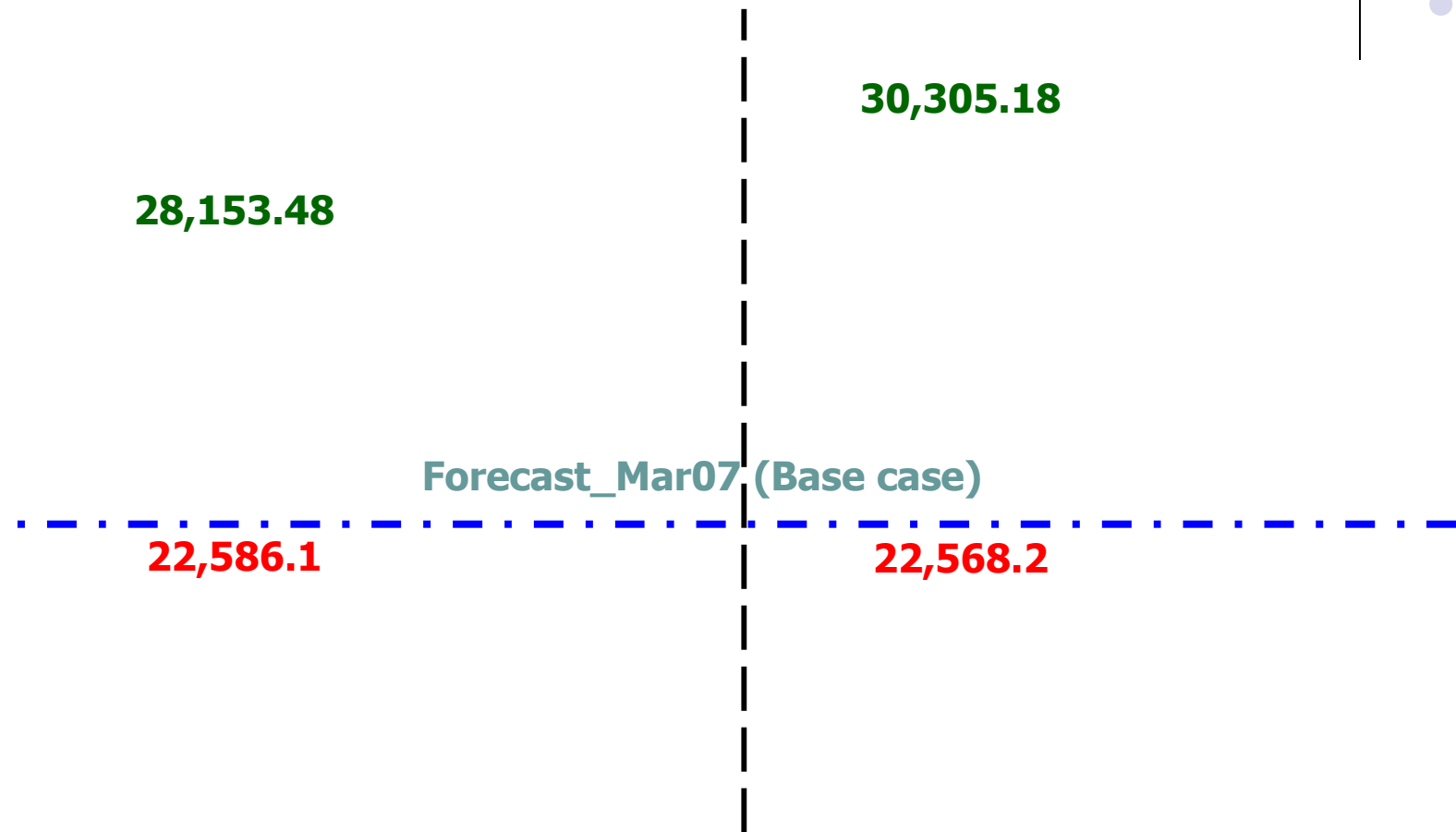
65

Malls

Province



เปรียบเทียบกำลังผลิตติดตั้ง และความต้อง ไฟฟ้าปี 2007-2008 (MW)



Cycle of (over-)expansion under the centralized monopoly system_

Deterministic planning based on demand forecast leads to over-investment in capital-intensive power projects

②

Utilities'
Profits

①

Power demand (over-)projections

③

Tariff structure that allows pass-through of unnecessary investments

Incentive structure for utilities: **the more expansion, the more profits**

- Financial criteria for utilities link profits to investments
 - Thailand uses outdated return-based regulation
 - WB's promoted financial criteria such as self financing ratio (SFR) also have similar effects
- ROIC (Return on Invested Capital) means: the more you invest, the more profits

$$\text{ROIC} = \frac{\text{Net profit after tax}}{\text{Invested capital}}$$

EGAT	8.4%
MEA	} 4.8%
PEA	

Result :

Demand forecast have systemic bias toward over-projections
Too many expensive power projects get built

Energy companies in SET

Over Time, Demand Forecasts Tend to be High (1)



← Forecast

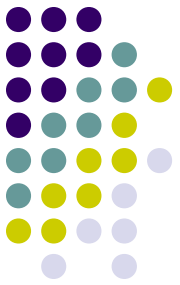
← Actual

Policy Action on Energy Efficiency Can Clearly Make a Difference (U.S. States vs. Federal)



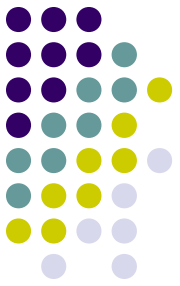
Total Electricity Use, per capita, 1960 – 2001



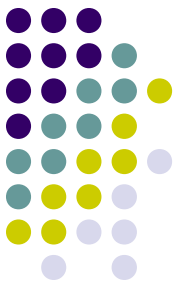


- The decision on OL3 was made at a time when new renewable, especially wind, had come of age and significant potential for growth was projected. The potentials have not been realized, largely because the power market is clogged by OL3.

Holistic view approve for energy planning



Who are the main organizations involved?



- **State actors**
 - State utilities (EGAT, EVN...)
 - Ministries responsible for energy
- **Project developers**
 - State Owned Enterprises
 - Independent Power Producers
 - Construction companies
- **Financiers**
 - Commercial banks
 - Export Credit Agencies
 - Bond and stock markets
 - Private equity
 - Others (pension funds...)
- **Consultancies**
- **Norconsult (Norwegian consultancy)**
 - Professional Associations (E8)
- **Multilateral Financial Institutions and International Organizations**
 - Asian Development Bank (ADB)
 - World Bank
 - Mekong River Commission
- **Bilateral agencies**
 - JBIC (Japanese Bank for International Cooperation)
 - AFD (Agence Francais Developpement)
 - SIDA (Swedish International Development Agency)



Thank you

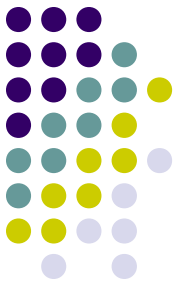
Email: witoon@terraper.org

Dams: The Wrong Response to Climate Change



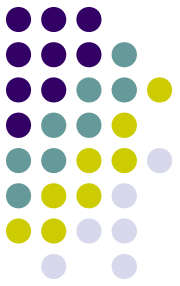
- Recent estimates suggest reservoirs may contribute a further 1/3 on top of current human-derived methane sources which is 4% of total global warming
- Dams designed on historical data of river flow – not applicable under climate change – more extreme weather events expected
- Dams social and environmental impacts should exclude their inclusion as “clean and renewable” energy – they crowd out funding for better solutions

International Comparison of Power Generation per GDP



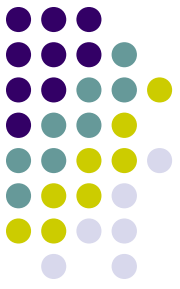
Generating prosperity ???

Changing role of electricity



- Electricity changes from a public service to a profit-making commodity
- With cross-border grid extension or regional grid, “Energy commons” (e.g. rivers w/ hydroelectric potential, natural gas) in countries surrounding Thailand are become a transnational commodity

What's wrong with the energy development model?



- High energy intensive development and consumption
- High centralize control of planning and decision making
- High priority to supply side expansion
- Highly rely on fossil fuel base technology
- High externality cost of energy investment
- High monopoly and profit making in energy business

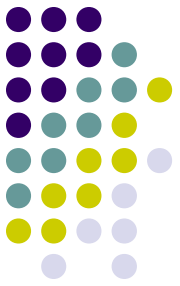
The dominant “development” model for energy in the Mekong Region needs to be reviewed.



Key points for sustainable energy

- Respect the natural limits of the environment
- Decouple economic growth from the consumption of fossil fuels
- Create greater equity in the use of resources
- Phase out dirty, unsustainable energy sources
- Implement renewable solutions, especially through decentralized energy systems

Dam business in the Mekong Region: the legacy of Cold War in the new context of the market economy



- 1992 ADB established Greater Mekong Sub-region (GMS) Program to promote regional economic integration. Revival of dam plans from Cold war.
- China plans to build 8 dam projects on the Mekong and 13 dam projects on Salween. Loa's Power Development Plan (PDP) indicates 74 projects. Thailand, Laos and Cambodia also have renewed 11 dams on the Lower Mekong mainstream.
- Chinese Dam Industry expanding over Mekong Region.
- Mekong Region has become big investment market for dam industry including Nordic France Thai Japanese Korean Russian Vietnamese and Chinese companies.
- Large dams, regional power and water grid initiatives represent a centralization of control and power.

Over Time, Demand Forecasts Tend to be High (2)



← Forecast

← Actual