

ADDRESSING THE ISSUES OF ENERGY SUBSIDIES IN EAST & SOUTH EAST ASIAN REGION



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Presentation Outline

- Overview of energy sector in Asia
- Existing status of the subsidies
- Rationale for energy subsidies
- Effects of energy subsidies
- Overview of energy subsidies in Asia
- Important aspects of energy subsidy data
- Recent development and initiatives in the region in the context of energy subsidy reduction and removal
- Case Study on Indian electricity sector subsidies.

Overview of the Asian energy sector

- Asian energy demand is expected to grow at a faster rate compared to the other regions of the world (IEA, 2007)
- Region is the net energy importer ; Energy security is an important challenge
- Majority of the Asian developing countries are energy poor and millions of people are still without any electricity connection and deprived of modern energy facilities
- Majority of the economies are developing or least developed, hence require fiscal support for energy sector development.
- Non commercial energy sources (mainly biomass) comprise a significant portion of the total primary energy supply in Asia.
- Low environmental quality standard and high priority to economic growth.
- Increasing GHG emissions scenario due to high economic growth and use of relatively inefficient technologies.
- Rapid change in the lifestyle of the Chinese and Indian middle income population demanding more energy

Overview of existing status of energy subsidies in the Asian region (situation as of FY2000-01)

Countries	Coal	Petroleum product	Natural Gas	Electricity
<i>China</i>	Low (market based)	Medium (partially Govt. controlled)	High (fully Govt. controlled)	Medium (partially Govt. controlled)
<i>Indonesia</i>	Low (market based)	High (Fully Govt. controlled)	Medium (partially Govt. controlled)	High (fully Govt. controlled)
<i>Japan</i>	Low (market based) Mainly for the imported coal from Australia	Low (market based)	Medium (partially Govt. controlled)	Low (market based through deregulations)
<i>Korea</i>	High for domestic coal (Govt. controlled) Low for imported coal (market based)	Low (market based)	Medium (Whole sale : market based; Retail: partial price control)	High (Govt. controlled)
<i>Malaysia</i>		Medium (Govt. controlled)	Low (market based)	High (Fully Govt. controlled)
<i>Philippines</i>		Low (market based) Socially sensitive products are excluded like kerosene	Low (market based)	Low (market based through deregulation)
<i>Thailand</i>	Low (market based)	Low (market based through deregulation)	Low (market based through deregulation)	Low (market based through deregulation)
<i>Vietnam</i>	High (Govt. controlled)	High (Govt. controlled)	High (Govt. controlled)	High (Govt. controlled)
<i>India</i>	Medium (partially Govt. controlled)	Low (market based) Socially sensitive products are excluded like kerosene		Medium (partially market based through deregulation)

Source: Compiled from APEC Energy Pricing Practices, 2000

Why subsidized energy?

- To make energy available to the poor people for better quality of life.
- To achieve short term economic growth.
- To provide competitive price advantage to the domestic producers in the international market for better trade

Effects of energy subsidies in Asia (developing country scenario)

- Increasing energy demand especially for automobile fuel, electricity in the domestic and agricultural sector
- Discouraging efficiency improvement in the system - low financial and service performance of the most of the government owned energy companies in the region.
- Creating the environment of continued use of energy inefficient technologies and generating more pollution.
- Reduced fresh investment in the energy sector.
- Creating technology lock in and hindering new industries to come up.
- Hindering the growth of green and clean power in the region.
- As usual creating negative effects by generating RENT and producing welfare loss to the whole economy. Subsidy has become the legitimate claim of the recipients.

Overview of energy subsidies in Asia...(1)

- Artificially lowered energy prices are aggravating the pollution level in developing Asian countries.
- Asian energy subsidies are mainly to support low income group to avail commercial energies. But the poverty reduction purpose is faded out. While millions of people are out of commercial energy reach in Asia; subsidies have very low impact on them as a welfare measure.
- Most of the subsidies are generating 'rent' for the recipients and hard to remove them without having addition financial support to make-up the income loss. Burden is huge for the Governments hence, subsidies continue.
- Political instability is also creating the enabling environment for prolonged subsidy regime.
- Economic development might make the countries financially capable to bear the burden of subsidies. (short term perspective)

Overview of energy subsidies in Asia...(2)

- Governments' priority got changed in terms of providing subsidies. Initially the main recipients were the producers but now the consumers....could be the effect of shift in political agenda
- Expenditure on subsidy accounts got hidden in the whole public finance system.. Difficult to find the information and data on subsidies paid..
- However, process has been started to reduce and remove energy subsidies in this region but the pace of progress is not satisfactory.... Shows the evidence of Governments' willingness to act on it
- Multilateral donor agencies influenced a lot to start fiscal reform in the region by adding a clause to their loan agreements.

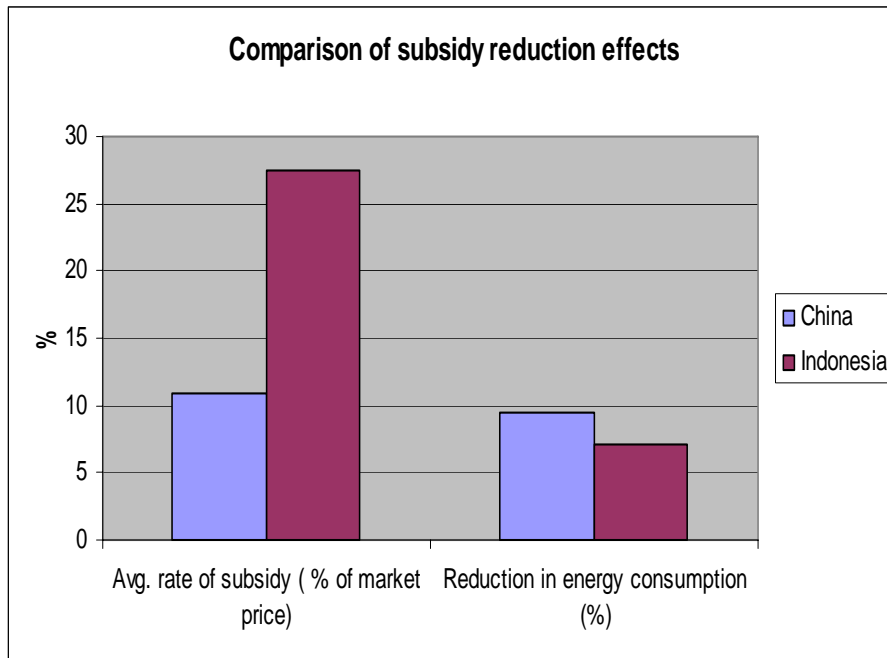
Important aspects to remember while collecting data on energy subsidies

- **Energy sector subsidies are not uniform.** Depending upon the Governments' priority which is often governed by the short term economic and political need, total subsidy amount gets allocated among the energy sub-sectors (coal, oil , natural gas and electricity).
- **Sudden rise in international energy prices** may cause government to give one time monetary support (as subsidy) to protect the domestic market from inflation. How to deal with it?
- Due to economic development in the region pattern of energy consumption is changing. Demand for electricity is increasing while the demand for other primary energies like coal and oil (mainly kerosene) are decreasing among the domestic consumers. Hence, **there is a scope of auto correction of the subsidies while shifting the priorities.**
- **Cost of subsidy management, implementation and monitoring is also very high** and in most of the cases these are not accounted under the total subsidy value. Hence, actual subsidy value is underestimated.

- Most of the Asian developing countries are now planned for heavy investment in the energy sector especially for power generation and off shore oil exploration to meet the increasing demand. New investment plans have been created with several long term fiscal benefits to attract the investors like tax rebate for 10years, import duty cut, long term PPA with guaranteed ROI etc. In many cases Governments have taken multilateral loans for very long term period with negligible interest rate to support such investment activities. Therefore, **such subsidies are not direct expenditure from the government budget.** A careful attention has to be given while considering them as energy subsidies and while estimating the economic impacts.

Differentiated Effects of subsidy reduction

Due to varied price elasticity among the different energy sources and the countries, subsidy reduction will have differentiated impacts on emissions reduction. Variation will occur among the energy sub-sectors and also within the countries. **So Asia might need sectoral approach for subsidy reduction.** Indonesia's majority of the subsidies go to oil sector while this sector has very low price elasticity. Therefore, even with reference price adjustment real oil demand reduction will be low and the corresponding emissions reduction too.



Source: IEA, 1998

Recent developments in the Asian Region

- ASEAN and East Asian regions are actively participating in various energy sector reform programs which are culminating in several action plans, declarations, policy dialogues working groups etc under the existing framework of regional cooperation.
- **Energy subsidies are not explicitly mentioned** in many cases but the target objectives are very conducive to deal with energy subsidies which are environmentally harmful and destabilizing the macro economic conditions.

Initiatives on energy subsidy relevant actions in the region

Singapore Declaration (21st Nov. 2007)

- Art 7(f) : Supporting the development and expansion of policy and measures, including innovative instrument and financing mechanism for environment management, to promote sustainable pattern of consumption and production
- Art 8(a): Working towards achieving a significant reduction in energy intensity.

2nd East Asia Summit (15th Jan, 2007)

- Art 3: Encourage the open and competitive regional and international markets geared towards providing affordable energy at all economic levels
- Art 8: Take concrete action toward improving efficiency and conservation
- Art 10: Increase capacity and reduce costs of renewable and alternative energy sources through innovative financing schemes
- Art 13: Encourage recycling of oil revenues and profits for equity investments and long term, affordable loan facilities for the developing countries in the region.
- Art 16: Regional and bilateral cooperation through research and development sharing of best practices and financing of energy products.

East Asia Summit (EAS) Energy Cooperation Task Force (ECTF) on 1st March 2007

- Plan to promote better understanding of integrated and liberalized energy markets and to launch a study to examine the state of energy markets in the EAS region

Case study on Indian electricity sector subsidies

Subsidy related policies

- **Provisions under the Electricity Act 2003**
 - **Art 61(g)** : reduction and elimination of cross subsidization within a specified period of time
 - **Art 62(3)**: subsidy can be given if the state governments feel to do so depending on case by case basis
 - **Art 65** : Should State Governments feel the need of subsidy, then that amount has to be paid in advance to the utilities

● National Tariff Policy (2005) & Electricity Policy (2006)

- Direct subsidy is better than the cross subsidization
- Raising electricity duty is an alternative to stop cross subsidization
- Only below specified level of consumption can be eligible for cross subsidized rate (maximum up to 50% of the average cost of supply)
- State Electricity Regulatory Commissions should have a road map to achieve the tariff level +/- 20% of the average cost of power supply. It will fix the band of cross subsidization between 20% up and down of the average cost of power supply in the state.
- Agricultural subsidy is allowed for the poorer farmers and for the critical geographical locations.
- Free or low cost electricity is considered harmful for the economy and growth of the country. Hence, a predetermined consumer category with a time frame should be allowed to get subsidy. Direct consumer subsidy is further encouraged rather than paying off to the utilities directly by the Government.
- Metering of the agricultural consumption is encouraged. Free power is no longer acceptable.

- **Rural Electrification Program (RGGVY)**

- Capital subsidy is allowed to reduce to cost of power supply to the rural areas
- Rs 5000 Cr. (\$1.5 Billion) capital subsidy already approved under the 10th 5 year Plan
- Additional Rs.11,000 Cr (\$ 3 Billion) capital subsidy will be given over the 11th 5 year Plan.
- There will be no discrimination in service quality between rural and urban area supply (24x7 good quality power supply target)

- **MEGA POWER Projects Development : Policy Guideline (Projects of capacity of 1000 MW and more and catering power to more than one State should be considered as a mega project)**

- Zero custom duty for importing capita equipments
- Deemed export benefits for the domestic bidders
- 15% price preference to the domestic PSU (Public Sector Undertaking) bidders
- Income tax benefits

Nature of the major subsidies

- Keeping the domestic and agricultural power price as low as possible. Majority of the subsidies provided by the Governments (State and Federal) are going directly to the utilities for making up their budget deficit due to huge under pricing.
- Rural electrification program. A significant amount of subsidy is going to support this program under various schemes like Kutir Joyti, RGGVY etc. Subsidy money is directly paid to the state owned power companies for infrastructure development.
- Unmetered agricultural load is another way of giving subsidy to the farmers. So far these are accounted under the T&D losses.
- Cross subsidization is another way to give price support to the domestic consumers at the cost of industrial consumers (**Rob Paul to Pay Peter**) .

Power Subsidies provided by the Government of Andhra Pradesh

Historical trend

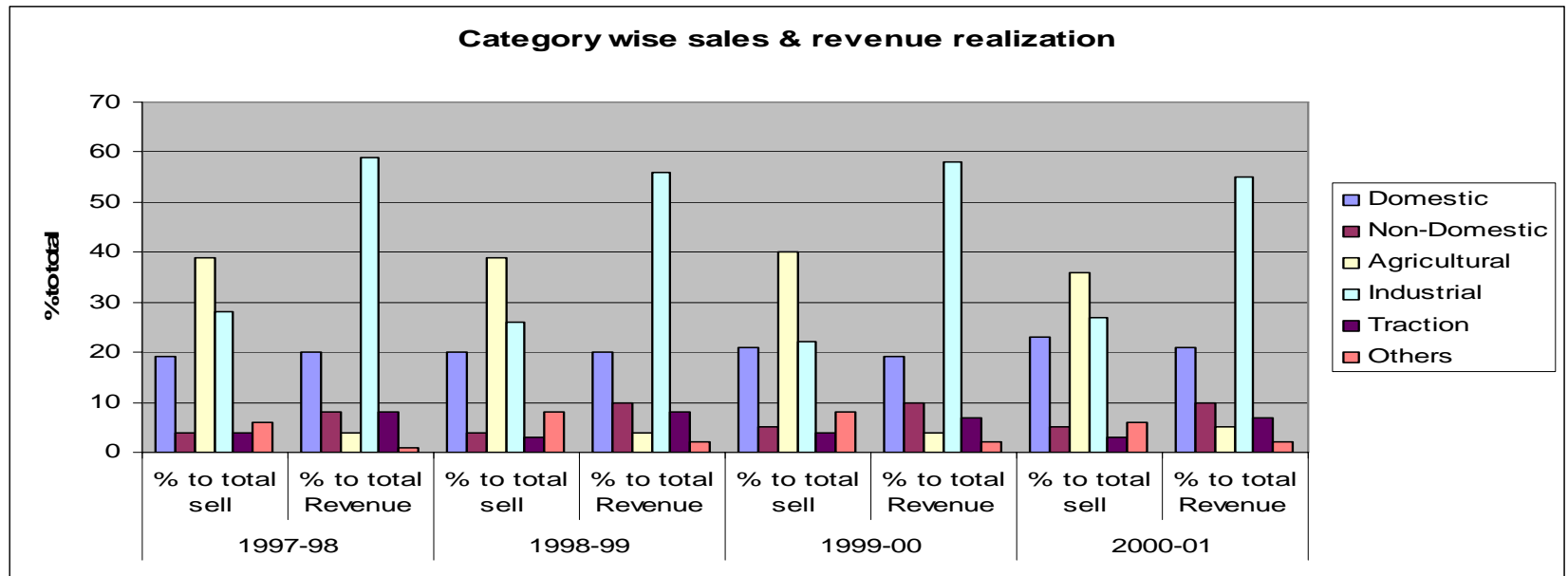
Unit: Rs. Cr

Description	199495	199596	199697	199798	199899	19992000 (Prov.)
Expenditure	3133	3572	4280	5498	7036	7375
Revenue Recovered	2276	2443	3558	4363	4629	4875
Revenue Deficit/Loss	857	1129	722	1135	2407	2500
3% ROR on Net Fixed Assets	87	130	129	122	112	172
Total Subsidy	944	1259	851	1256	2519	2672
Subsidy Paid/adjusted by GoAP	Equity written off	Adjusted against Loan	Adjusted against Loan	Rs.483 Cr. Adjusted against Loans	Cash Loan of Rs. 545 Cr., Bonds Rs.1100 Cr. Total Rs.1645 Cr.	Cash grant of Rs.105 Cr. + Bonds for Rs.3013.24 Cr. raised

Source: APERC, 2007 (<http://www.ercap.org/Reports/Apprtrstruc.doc>)

Note: Rs. 1 Cr. = \$ 250,000 (approx)

Scale of cross subsidies in AP



Consumer Categories	% of Avg Cost realized per unit (1999-00)
LT	
Domestic	57.73
Non Domestic	141.92
Industrial	126.8
Agricultural	6.19

Consumer Categories	% of Avg Cost realized per unit (1999-00)
HT	
Industrial Cat-I	150.86
Industrial Cat-II	168.73
Traction -V	147.08
Average	67.7

Source: Estimated using the Retail Tariffs published by APERC

Current status of power sector subsidies in AP

In 2003 power sector reform started in India. State owned power companies got vertically disintegrated in to three companies (generation, transmission and distribution) initially under a single holding company but gradually became independent with respective accounting system. Idea was to improve the financial condition of the power companies and the respective state governments as well. Situation improved but not at the scale of expectation. **Still GoAP is paying \$ 260 Million per annum subsidies to the distribution utilities.** Nevertheless, AP is considered one of the most progressive states in terms of power sector reform in India.

Particular	Amount (Rs. Cr.)
Domestic	178.8
Cottage Industries	0.83
LT Agriculture	712.2
Local (Public) Bodies	70.33
HT Agriculture	24.0
RESCO	61.13
Total	1047.7

Source: Estimated using the Retail Tariff Order 2007-08 issued by APERC

Current status of power sector subsidies in India (example of some selected states)

- For the state of Haryana total subsidy approved by the electricity regulatory commission = Rs. 23,711 Million (\$ 600 Million) for the FY2007-08. Govt. approved only Rs. 18,738 Million (\$468 Million). This subsidy is only for the agricultural load.
- Jharkhand: Total subsidy required for the FY 2006-07 was Rs. 101 Cr. (\$ 25 Million).
- Uttarpradesh : Total subsidy required Rs. 4281 Cr. (\$1070 Million) for the FY 2006-07

Current & future trend of Energy Subsidies in the Asian region

- Direct producers' subsidies will be reduced due to various reform activities. Indirect consumer subsidies may be increased.
- Actual beneficiaries will be the burgeoning middle class community in the Asian region. Hence, government expenditure on energy subsidy account will be increasing rather than decreasing while supporting consumer subsidies.
- Below poverty line people (even leaving under \$2 /day earning) will not get the benefits of such subsidies. LPG subsidies in India can only benefit the middle class people who can afford to buy LPG stove and can pay at least Rs.165 per 16kg bottle.
- Due to economic development in the region direct use of primary energy resources for day to day life will be reduced and secondary form (electricity) of energy use will be increased. Hence, electricity sector subsidy will be increased while other direct primary energy subsidies might get reduced as we have already observed in the previous slides.

Possible Data sources on Asian Energy Subsidies & related information (selected only)

- Asian Centre for Energy (ACE) :
<http://www.aseanenergy.org> \
- ASEAN+3 Oil Price Database
- ASEAN Energy Database
- ASEAN-JODI Database
- Electricity Regulatory Authorities in India (Tariff orders, regulations etc)
- IEE Japan Handbook of Energy & Economic Statistics,
- Korea Energy Economics Institute (KEEI) Energy Database
- Center for Energy Research Northeast Asia (CERNA), Korea

Subsidy Data Collection

Energy Sources	Production and /or Consumption	Market price support	Budgetary support	Tax expenditure	Others
Coal					
Oil					
Oil products					
Natural Gas					
Electricity					

Accounting steps of energy subsidies(Indicative)

Resource Extraction process –

Supply transportation –

Primary conversion –

Product Transportation –

Secondary conversion –

Distribution –

End Use conversion –

End use

Data Analysis Matrix to estimate the producer and consumer level subsidies for energy resources

Parameters	PRODUCTION				CONSUMPTION	
	Resource Extraction	Intermediate process including transportation	Secondary conversion and Distribution	Final production	End Use conversion	Final Consumption
PSE Analysis						
Production volume	√	√	√	√		
Value of output (production X domestic price received by the producers)				√		
Value added at each step of production		√	√	√		
Assistance to value adding factors : Land, Labour, Capital, Natural Resources like coal, oil and gas	√	√	√			
Assistance to intermediate inputs		√				
Any miscellaneous payments	√	√	√	√	√	
Price Gap Analysis						
Reference price of resource consumption						√
Actual consumer price						√

Source: Adopted from T. Morgan. Energy Subsidies: Their magnitude, How they Affect Energy Investment and Greenhouse Gas Emissions and Prospect for Reform. Menecon Consulting, June 2007, Bonn, Germany.

Thank You