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Some State-wise analysis of benefits from foreign collaborated energy sector in India

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ABSTRACT:
Energy is emerging as key driver of the world economic growth. The entire fabric of developmental goals is webbed around a successful energy strategy. Government is committed towards sustainable development and rapid expansion of the physical infrastructure in general and energy sector in particular. Given the fact that other renewable energies have yet to become cost effective, apart from having limited potential, fossil fuels have naturally emerged as a mainstay in energizing the growth requirements of the developing country like India.
The significance of energy availability and its role in the development process is well recognized. Availability of affordable energy resources is critical to meet the development aspirations of an economy. In India, diversified resource base and differential geographical settings call for region and sector-specific energy resource planning. In this context, the policy focus needs to be on reliably meeting the overall demand for energy in the Indian economy. The issue relating to energy and infrastructure thus form the core of any development strategy.

Key words: energy, infrastructure, resource planning.

INTRODUCTION:

The proceeding paper of this work was devoted to the study of foreign collaboration and the development of energy sectors in India, and it was found that presently India has substantially benefitted in terms of economic infrastructure inevitable for her attempts towards speedily industrialization and economic development of the Indian economy. This paper attempts to study the state-wise analysis of benefits from foreign collaborated energy sectors in India. We now proceed to state-wise analyze and benefit from foreign collaboration in the development of various states in India. In Andhra Pradesh, foreign collaborated energy sectors are Upper Sileru, Lower Sileru, Tungabhadra Dam, Nagarjunasagar and Ramagundam, Kothgudam and Vijayawada. These above energy sector installed capacity have 1912 Megawatts. State's prestigious energy sector, Sri sailam hydroelectric project is under construction. When completed, it would not only cater to the ever growing industrial and agriculture demand for energy in Andhra Pradesh but also spare energy to the neighbor states. In addition 26882 villages had been electrified and 10.43 lakh pump sets energized. Assam foreign collaborated energy sectors generate only one percent of the total energy output in the country.

Five thermal energy sectors and four hydro-energy sectors was build with foreign assistance in Bihar. Total installed capacity of these projects is 2965 megawatts. These projects helped a long way developing coal mining, heavy engineering, and several medium and small-scale industries in Bihar.
In Gujarat, foreign collaborated three thermal energy sectors and two hydro energy sectors are presently supplying energy to the industrial complex with the increase in energy availability numerous medium and large scale industries have came up in Gujarat. Over the years many villages have been electrified and irrigation pump sets energized. Foreign countries has also collaborated four hydroelectrically energy sectors in Himachal Pradesh and Punjab. These projects have contributed and continue to contribute a lot to the growth of industry in Punjab and Himachal Pradesh. Chandigarh gets 3.5 percent share of the total energy generation from Bhakra Complex. All the 22 villages of Punjab have been electrified and provided with street light. In Himachal Pradesh, work on the prestigious Nathpa-Jhakri (1500 MW) and KOI dam

(600 MW) projects has also began. The state achieved almost cent percent rural electrification.

In Karnataka, seven energy sectors with aggregate generating capacity of 1975 MW were constructed with foreign assistance. It is the first state in the country to have generated electricity at Gokak Falls in 1887. Total installed energy capacity of foreign collaborated energy sectors were 1975 megawatts. Due to the availability of energy, chemicals, fertilizer factories have been setup in-this state. Number of electrified villages including hamlets was 34242 and pump sets energized numbered 2592 lakh by March 2013. On Kerala not only in its speedier industrialization for increased employment but also irrigates of agricultural land for increases agricultural production.

As a result of foreign collaboration, 5479 megawatt of energy generating capacity was added to Maharashtra to feed the growing industrial and agricultural needs of the state. In all 139413 towns and villages of Maharashtra were electrified and 113.34 lakh pump sets energies as at the end of March, 2013.

In Madhya Pradesh, foreign countries rendered economic and technical assistance for the construction of three hydro-energy and five thermal energy sectors. These projects improved the energy shortage situation not only in the state of Madhya Pradesh but also in the entire Western region, including the states of Maharashtra and Gujarat. The foreign collaborated energy sectors are supplying energy to the major industries in Madhya Pradesh.

In accordance with the Government of India's efforts towards raising the standards of living of hill people in India's north-east region, Canada and Japan provided financial assistance in respect to Hydro Energy sectors of 108 megawatts capacity. These hydro energy sectors provide irrigation to agricultural farms in Meghalaya and supply energy to a fruit canning and preserving industry.

In Rajasthan, two hydro-electric energy sectors were built with Canada Collaboration. These hydro-electric energy sectors have given Rajasthan harness its hydro electric potential in order to supplement the pace of industrialization in the state. In view of uneven rainfall constituting major limitation Rajasthan hydro-energy resources, the Government of India decided to construct Atomic Energy Station near Kota in Rajasthan. Besides generation of 2465 crore units of energy from its own resources the state purchase 1397.2 crore units of energy from neighboring states to meet the requirement number of villages electrified and that of wells energized as on 31st March, 2013 was 124882 and 33.18 lakh respectively. Efforts were also being made exploit solar and wind energy.

Tamil Nadu has a number of hydro-electric stations and thermal stations. The atomic energy plant at Kalpakkam in Chengalpttu district was commissioned in 1983. Several energy sectors were constructed with foreign assistance. The foreign collaborated energy sectors supply energy to brown coal open-cut pits, a fertilizer plant, coal-brick factory and a porcelain clay works. The projects also supply electricity to the neighboring state of Tamil Nadu. The fact that there a now a stable energy supply bas made it possible to start the electrification of railways and launch and accelerated industrialization and restricting of the backward economy of India's Southern States.

In Uttar Pradesh, the foreign collaborated energy sectors are playing an important role in integrated operation of energy system in Northern and Eastern region and have given impetus to the emergence of new industrial enterprise in public and private sectors. Installed capacity of foreign collaborated energy sectors are 17385 megawatts. As many as 178749 villages and 145699 harijan bastis were electrified and 1587713 private tube walls were energies.

In West Bengal, foreign collaboration in the development of energy sectors dates back to 1951 when foreign countries offered technical know-how and financial assistance for the construction different energy sectors in West Bengal. The projects supply energy to industries in West Bengal and Bihar. The construction of many hydro-electric energy sectors, besides controlling the disasters arising out of foods, has facilitated irrigation of farm land in West Bengal and Bihar.

It is evident from the various tables that foreign collaborated energy sectors hold a lion's share in Uttar Pradesh and Madhya Pradesh. They made available to India 13557.5 m.w. electricity or 27.07 per cent of the entire foreign collaborated energy sectors in India. The foreign collaborated energy sectors install capacity in India is 50082 megawatts. The total foreign collaboration in the development of energy sectors in states is Rs. 178863.17 million.

Table-1 : India : State wise distribution of Foreign Collaboration Energy sectors

Name of Project	Installed Capacity (M.W.)	Name of Collaborating Country/Institution along with the respective amounts of financial assistance (million Rupees)	Total Foreign Assistance (Million Rupees)
KERALA			
1. Idikki Hydel Power Project	780	Canada (Rs. 837.85	837.85
2. Kerala Power Project	-	IBRD (Rs. 2153.76 million)	2153.76
3. Kuttiyadi Hydel Power Project	75	Japan (Rs. 90.5 million)	90.50
4. Kayamkulam Thermal Power Project	420	USSR	NA
5. Parambikulam Hydel Power Project	185	USA (Rs. 86 million)	86.00
6. Sabarigiri Hydel Power Project	300	USA (Rs.306.8 million)	306.80
7. Sholayar Hydel Power Project	54	Yoguslavia (Rs. 9.3 million)	9.30
Total	1814		3484.21
MADHYA PRADESH			
1. Bhusawal Thermal Power Project	478	Pland (Rs. 121.4 million)	121.40
2. Chandrapur Thermal Power Project	1000	Japan (Rs. 160.46 million)	160.46
3. Jaikwati Hydel Power Project	12	Japan (Rs. 129.61 million)	129.61
4. Koyna Hydel Power Project	880	IBRD (Rs. 119.05 million), IDA (Rs. 131.3 million)	455.45
		USA (Rs. 205.1 million)	
5. Koradi Thermal Power Project	1080	Poland (Rs. 92.9 million)	92.90
6. Maharashtra Power Project	-	IBRD (Rs. 6284 million)	6284.80
7. Nasik Thermal Power Project	280	France (Rs. 209.73 million)	209.73
8. Paras Thermal Power Project	78	Poland (Rs. 43.0 million)	43.00
9. Trombay Thermal Power Project	1330	IBRD (Rs. 9352.50 million), USA (Rs. 85.2 million) West Germany (Rs. 850 million)	10287.77
10. Tarapur Atomic Power Project	320	USA (Rs. 357.1 million)	357.10
11. Ujjant Hydro-Electric Project	12	Japan (Rs. 169.5 million)	169.50
12. Vir Hydel Power Project	9	Hundgary (Rs. 13.3 million)	13.30
MAGHALAYA			
1. Umium Hyder Power Project	54	Japan (Rs. 65.2 million)	65.2
2. Umtru Hydel Power Project	54	Canada (Rs. 11 million)	11.0
ORISSA			
1. Balamela Hydel Power	360	USSR (Rs. 178.5 million)	178.50

Project			
2. Hirakund Hydel Power Project	270	USA (Rs. 87.5 million), USSR (Rs. 445.1 million), Japan (Rs. 169.5 million)	701.10
3. Talcher Thermal Power Project	1000	USA (Rs. 344.5 million,) France (Rs. 822.45 million), IBRRD (Rs. 4862.25 million)	6029.20
4. Upper Indra-Sarovar Hydel Electric	600	IDA (Rs.113.0 million)	1613.00
RAJASTHAN			
1. Chambel Dam Hydel Power Project	263	USA (Rs. 340.7 million)	340.70
2. Jawahar Sagar Hydel Power Project	99	Canada (Rs. 24.70 million)	24.70
3. Rana Pratap Sagar Hydel Power Project	172	Canada (Rs. 35.20 million)	35.20
4. Rajasthan Atomic Power Project	440	Canada (Rs. 499.60 million)	499.60
GUJARAT			
1. Ahmedabad Electricity Co. (Thermal)	80	USA (Rs. 18.6 million)	18.60
2. Cambay Thermal Power Project	NA	USA (Rs. 158.00 million)	158.00
3. Dhuvaran Thermal Power Project	534	USA (Rs. 441.0 million)	441.00
4. Kadana Hydro-Electric Power Project	60	Czechoslovkia (Rs. 52.2 million)	52.20
5. Sardar Sarovar Dam & Power Project	1450	IBRD (Rs. 2447.00 million), Japan (Rs. 332.05 million)	2769.00
HIMACHAL PRADESH/PUNJAB			
1. Bhakra Nangal Hydel Power Project	900	USSR (Rs. 595.3 million)	595.30
2. Beas Hydel Power Project	900	USA (Rs. 157.1 million), IDA (Rs. 268.6 million)	425.70
3. Chamera Hydel Power Project	540	Canada (Rs. 374.30 million)	374.30
4. Nathpa Jhakri Hydel Power Project	1500	IBRD (Rs. 7624.68 million)	7624.5
TAMIL NADU			
1. Basin Bridge Thermal Power Project	90	Yugosilavia (Rs. 70 million)	70.00
2. Ennore Thermal Power Project	450	Czechasiovakia (Rs. 133.5 million)	133.50
3. Kundah Hydel Power Project	555	USA (Rs. 76.3 million), Canada (Rs. 586.60 million)	662.90
4. Lower Metter Hydel Power Project	240	Japan (Rs. 858.8 million)	858.80
5. Micro-Hydel Power Project	33	Japan (Rs. 226 million)	226.00
6. Mettur Hydel Power Project	240	USSR (Rs. 443.9 million)	443.90
7. North Madras Thermal	630	ADB (Rs. 1916.7 million)	1916.70

Power Project			
8. Neyveli Thermal Power Project	600	USSR (Rs. 119.1 million)	119.10
9. Nuclear Power Project	1000	USSR (Rs. 5800 million)	5800.00
10. Veriyar Hydel Power Project	140	Yugoslavia (Rs. 24.0 million)	24.10
UTTAR PRADESH			
1. Anpara Thermal Power Project	1000	Japan (Rs. 4338.6 million)	4338.60
2. Dadri Combined Cycle Power Project	840	West Germany (Rs. 1299.5 million)	1299.50
3. Kanpur Thermal Power Project	95	USA (Rs. 16.6 million)	16.60
4. Harduaganj Thermal Power Project	100	USSR (Rs. 55.6 million)	55.90
5. Mataila Hydel Power Project	30	Yugoslavia (Rs. 23.4 million)	23.90
6. Obra Thermal Power Project	250	USSR (Rs. 443.9 million)	443.90
6. Halikwati Hydel Power Project	27	Japan (Rs. 129.61 million)	129.61
7. Kolaghat Thermal Power Project	420	UK (Rs. 902.3 million)	902.30
8. Mayurkshi Hydel Power Project	4	Canada (Rs. 83 million)	83.00
9. Teesta Canaal Hydel Power Project	22.50	Japan (Rs. 906.82 million)	906.82
10. Titagarh Thermal Power Project	240	UK (Rs. 58.0 million)	58.00

CONCLUSIONS:

India is emerging, as a leading and dynamic player among the first five economies of the world in the next three decades. This inevitably has implications for its energy policy. The acceleration in the pace of the economy is bound to change its energy profile. The new energy demand is likely to be so huge that it has to engage itself at a much wider scale with the world energy market. It is precisely to meet the growing needs that today it conducts energy transactions with as many as 47 countries. These countries are far and near, from all the continents of Asia, Africa, Europe, South and North America. Its energy trade is increasingly becoming dynamic. Though a net importer of hydrocarbon, India exports petro-products It is planning to gear up its oil-refining capacity to earn from exports of petroleum products to meet its import bill. It has the refining capacity to process the range of crude. India has doubled its refining capacity in the last six years and is expected to rise to 140 MTPA, or about 2.8 mb/d, by 2012 and to 3.6 mb/d by 2013.

India should also make concerted efforts to increasingly develop and expend the domestic productive capacities of energy generation, transmission and distribution machinery and equipment, mining and other related equipment for the development of many more energy sectors in the country without depending much on imported ones. These, for the sake of import-substitution, which would ultimately improve and strengthen the debt servicing capacity of India and ease strains on her balance of payments, attempts should continue to be made to attract foreign private capital and technology in the related capital and technology intensive industries on terms and conditions which are in national interest. Although the present policy of import-substitution has neither resulted in reduced dependence on external resources nor helped India in securing self-reliance, it can be hoped that well-conceived long-term import substitution policy backed by foreign collaboration in the related technology-intensive industries can lead to reduction in India's dependence on foreign assistance and a high rate of saving and investment.

REFERENCES:

1. Agarwal Ramgopal (2013). "Towards the Global Impact for Managing Climate Change", Paper presented at the Harvard Project or International Climate Agreements.
2. CRISIL (2013), Hindustan Petroleum Corporation Limited: Debt Instruments and Bank Facilities, January
3. Cropper, M. (2014), "Public Transport and Affordability in Mumbai, India", World Bank Working Papers
4. De man R (2012). "United Kingdom Energy Policy and Forecasting: Technocratic Conflict Resolution" in T Baumgartner, A Midthum (eds.), The Politics of Energy Forecasting ,Clarendon Press Oxford, pp. 110- 134.
5. Dhungel Kamal Raj (2008). "A Causal Relationship between Energy Consumption and Economic Growth in Nepal", Asia-Pacific Development Journal. Vol. 15, No. 1, pp. 137-150.
6. FACTS Global Energy (2009), Asia-Pacific Oil Product Balances, Oil Data book III, Volume 1, April.
7. Government of India, The Parikh Committee (2010), Report of the Expert Group on a Viable and Sustainable System of Pricing Petroleum Products, February.
8. Government of India, Ministry of Finance (2009), Union Budget, Key Excerpts, July.
9. Government of India, Petroleum Planning and Analysis Cell (2009, 2010), Oil Prices and Taxes, available at www.ppac.org.in.
10. Government of India, Planning Commission (2007), "Petroleum and Natural Gas Chapter", Eleventh Five-Year Plan.
11. Morgan, T. (2007), Energy Subsidies: Their Magnitude, How they Affect Energy Investment and Greenhouse Gas Emissions, and Prospects for Reform, June.
12. Wall Street Journal (2014), "Giant Oil Refinery in India Shows Forces Roiling Industry", 29 August.
13. APM Gas Price Hike: A Positive for the Development of the Domestic Gas Market, ICRA Rating, 2013.