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An analysis of share and purchase of power from central electricity projects by Tamilnadu electricity board

Kotteshwari M

Ph.D. Scholar, P.G & Research Department of Economics, Agurchand Manmull Jain College, Meenambakkam, Affiliated to university of Madras, India.

Abstract
The Electricity Regulatory Commissions (ERC) Act, 1998 was enacted with the objective of distancing Government from the tariff regulation. The Act provided for Electricity Regulatory Commissions at the Centre and the States for rationalization of electricity tariff, transparent policies regarding subsidies etc. The ERC Act, 1998 has since been replaced by the Electricity Act, 2003. The Central Electricity Regulatory Commission (CERC) created under the provisions of ERC Act, 1998 has been recognized as the CERC under the Electricity Act, 2003. Nuclear Power Corporation of India Limited is a public sector enterprise under the administrative control of the Department of Atomic Energy (DAE), Government of India. The company was registered as a public limited company under the companies Act, 1956 in September 1987 with the objective of operating the atomic power stations and implementing the atomic power projects for generation electricity in pursuance of the schemes and programme of the Government of India under Atomic Energy Act, 1962.The Mission of the Company is 'To develop nuclear power technology and to produce nuclear power as a safe, environmentally benign and economically viable source of electrical energy to meet the increasing electricity needs of the country.' This paper tries to study the share and purchase of power from central electricity board as well as from private sector and from other states by T.N.E.B.

Keywords: Electricity Regulatory Commissions (ERC), Nuclear Power Corporation of India Limited, Department of Atomic Energy

1. Introduction

Electricity is a primary source of energy. Hence availability of electricity to all segments of society at reasonable price and at adequate level at all times is very important for development of the economy in the state. The demand for power is mainly due to population and economic growth, which reflects growth process-taking place in the primary, secondary, and tertiary sectors. Power development is one of the key inputs for the overall economic development of a state. Nuclear Power Corporation of India Limited is a public sector enterprise under the administrative control of the Department of Atomic Energy (DAE), Government of India. The company was registered as a public limited company under the companies Act, 1956 in September 1987 with the objective of operating the atomic power stations and implementing the atomic power projects for generation electricity in pursuance of the schemes and programme of the Government of India under Atomic Energy Act, 1962.

The Mission of the Company is 'To develop nuclear power technology and to produce nuclear power as a safe, environmentally benign and economically viable source of electrical energy to meet the increasing electricity needs of the country.

The motto of the NPCIL is Safety First and Production Next. The company is currently operating 17 nuclear power units at six locations and is implementing construction of five reactors at three locations. With the total installed capacity of 4120 MW, and five reactors under construction totalling of 2660 MW capacity. Three units of Nuclear Power Corporation of India Limited (NPCIL) namely Kakrapar Atomic Power Station (KAPS-1), Kaiga Generation Station (KGS-2), and Rajasthan Atomic Power Station (RAPS-4) recorded non-stop continuous run of more than a year. In the year 2002–2003, NPCIL recorded an impressive overall 29 capacity factor of 90% for its operating units. NPCIL completed its new units namely Tarapur Atomic Power Station (TAPS-3&4) and KGS-3 with gestation periods matching international levels. NPCIL is also proud of its equity participation in BHAVINI, an organization formed for implementation for Fast Breeder Reactors programme in the country.

This paper tries to study the share and purchase of power from central electricity board as well as from private sector and from other states by T.N.E.B and this paper concludes that since 1992-93 the purchase of power from Central Electricity Board by T.N.E.B has increased till 2012-13.

2. Objectives

1. To study the share of nuclear power from central sector projects to T.N.E.B.
2. To study the share and purchase of thermal power from central sectors.
3. To study the power purchased from private sector and from other states by T.N.E.B.
4. To study the total power purchased by T.N.E.B.

3. Methodology

This paper mainly attempts to study the share of power from central power projects by T.N.E.B For this, the study mainly depended on secondary data which is collected for 20 years from 1992-93 to 2011-12 from the following sources:

1. T.N.E.B, statistics at a glance, 2008 Report
2. Statistical handbook of Tamil Nadu
3. Tamil Nadu economic appraisal
4. Directorate of statistics

4. Analysis

1. The first objective is to study the share of nuclear power from central sector projects to T.N.E.B.

Table 1: Share and purchase of nuclear power from central government by Tamilnadu electricity board

Years	Nuclear (In Million Units)
1992-93	517.663
1933-94	365.110
1994-95	658.764
1995-96	335.016
1996-97	475.649
1997-98	481.84
1998-99	609
1999-2000	596
2000-01	1260
2001-02	1458.39
2002-03	1865.392
2003-04	2482.973
2004-05	4845.637
2005-06	2559.714
2006-07	2721.534
2007-08	1628.043
2008-09	1516.00
2009-10	1979.605
2010-11	2258.285
2011-12	2775.314
2012-13	3035.833

***Source*:** Statistical Hand Book of Tamil Nadu.

The share of Nuclear power from Madras atomic power station in Tamilnadu and kaiga power station in karnataka to T.N.E.B has raisen from 517.633 in 1992-93 to 4845.637 in 2004-05 purchased from Madras Atomic power station in Tamilnadu and from Kaiga power station in karnataka. Again there was fluctuation in nuclear purchased and during 2012-13 the nuclear power purchase was 3035.833 mu which is more than its past seven years.

2. The second objective is to study the share of thermal power from central sectors.

Table 2: Share of thermal power from central sector by Tamilnadu electricity board

Years	Thermal (In Million Units)
1992-93	6738.738
1933-94	7719.861
1994-95	8369.829
1995-96	8415.377
1996-97	8611.611
1997-98	9747.33
1998-99	10066
1999-2000	14168
2000-01	11621
2001-02	10646.922
2002-03	11399.104
2003-04	13287.111
2004-05	11697.715
2005-06	18122.182
2006-07	18121.273
2007-08	19641.324
2008-09	18357
2009-10	19364.887
2010-11	18858.977
2011-12	18571.148
2012-13	18641.469

***Source*:** Statistical Hand Book of Tamil Nadu

T.N.E.B receives share from Neyveli in Tamilnadu, Ramagundam in Telunkana (Andrapradesh), kayamkulam in Tamilnadu, Manali in Tamilnadu,Talcher in odisha. From the year 1992-93 to 1999-2000 there was continous increase in thermal power share but from 2000-01 the power it started declining till the year 2004-05 and from 2005-06 to 2012-13 there was slight movement in the share received from from CEB and during the study period in 2012-13 the thermal power share was 18641.469 MU which reports more than the year 1992-93. Similar to nuclear power the thermal power purchase has also at an increasing level in 2012-13.

3. The third objective is to study the power purchased from private sector and from other states by T.N.E.B.

Table 3: Power Purchased From Private Sector, From Other States

Years	Private Purchase	Purchase from other States
1992-93	***	***
1933-94	***	***
1994-95	119.775	***
1995-96	395.815	***
1996-97	659.645	***
1997-98	761.04	8.47
1998-99	***	2356
1999-2000	1300	***
2000-01	3037	698
2001-02	5316.262	936.643
2002-03	6777.532	1417.759
2003-04	7000.363	2828.403
2004-05	9351.426	***
2005-06	9114.596	***
2006-07	12894.326	***
2007-08	16305.089	***
2008-09	18085	***
2009-10	25513.669	***
2010-11	27572.252	***
2011-12	27813.443	***
2012-13	27298.583	***

*** No purchase

***Source*:** statistical handbook of Tamilnadu

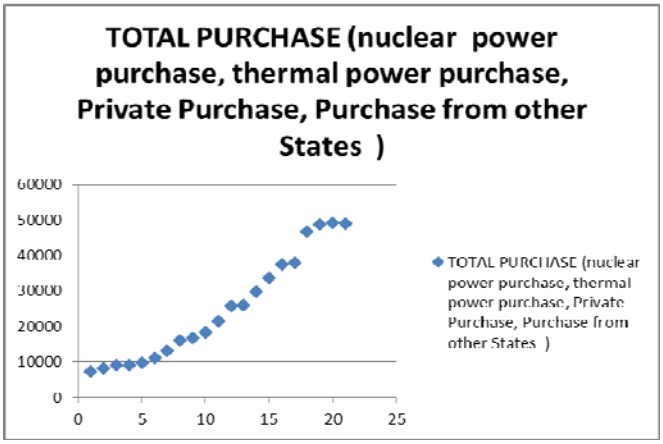
To control power deficit and to fill the demand and supply gap, the T.N.E.B purchase power from private sector namely G.M.R power corporation, samalpathy power corporation, PP Nallur power corporation, penna, Madurai power corporation, ABAM, ARKAY, STCMS, Windmill private and major captive power plant. Since 1992-93 the power purchased from the private sector was increasing continuously till the year 2012-13 except the year 2005-06 and 2011-12 because during those years slight movement is found in the power purchase. Only during 1997-98, 98-99, 2000-01, 2001-02, 2002-03, 2003-04 the power was purchased from other states currently there is no purchase from other states.

4. The final objective is to study the total power purchased by T.N.E.B.

Table 4. Total power purchased by T.N.E.B (in million units)

Years	Total purchase (nuclear power purchase, thermal power purchase, Private Purchase, Purchase from other States)
1992-93	7256.401
1933-94	8084.971
1994-95	9148.368
1995-96	9146.208
1996-97	9746.905
1997-98	10998.68
1998-99	13031
1999-2000	16064
2000-01	16616
2001-02	18358.271
2002-03	21459.787
2003-04	25598.739
2004-05	25894.778
2005-06	29796.492
2006-07	33737.133
2007-08	37574.456
2008-09	37958
2009-10	46858.161
2010-11	48689.514
2011-12	49159.905
2012-13	48975.885

***Source*:** Statistical Handbook of Tamilnadu



Total purchase includes purchase from central government, purchase from private sectors and purchase from other states. The total purchase has increased continuously from the year7256.401 in 1992-93 to 49159.905 in 2011-12 and only in 2012-13 slight change is found. To control the increasing power for demand in Tamilnadu, central purchase plays a significant role than the private purchase because central purchase has increased to a great extent in the year 2012-2013 when it is compared with the year 1992-93.

5. Findings

Since 1992-93 the purchase of nuclear power, thermal power from CEB, purchase of power from private sector and from other states has increased, finally total power purchased by T.N.E.B has increased at a great extent in the recent study periods.

6. Conclusion

T.N.E.B receives share from Central Electricity Board and purchase power from central sector and purchase power from private sources and also from other states and the purchase is increasing year by year in order to control the power deficit in Tamilnadu so instead of purchasing power from other sources hence alternate solutions are to be sought to meet the requirements so solar energy would be a suitable solution which will increase the power supply without harming the environment.

7. References

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