



## Challenges To Agriculture: A Note on Power Supply To Agriculture in Tamil Nadu

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### ABSTRACT

Tamil Nadu has ensured agricultural consumers a free but unmetered electricity supply. It has been marketed as a policy for increasing agricultural yields, ensuring food security and reducing rural poverty. Electricity pricing rapidly emerged as a powerful political tool and stake as for as Tamil Nadu is concerned. In a pure macro economic framework the public utilities are supposed to function efficiently. They may not earn profit but at least operate on a no-profit – no – loss basis. Hence abolishing the free power policy may be desirable from the perspective of improving the financial status of Tamil Nadu state, improving the quality of the electricity supply and of the environment. Yet it may also render the agricultural sector more vulnerable and may reduce food production. This call for a need to create win- win situation, where both the state and farmers gain while reducing the consumption of electricity and ground water. This paper makes a modes attempt to propose a win- win situation.

### KEYWORDS :

Society	Over use of ground water leading to depletion of a limited resource. Growing inequalities in groundwater access leading to social conflicts. Long hours of power cuts due to low electricity production and energy inefficiency.
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Source : Swain Ashwini (2012)

### Introduction

Like most Indian states Tamil Nadu has ensured agricultural consumers a free but unmetered electricity supply. It has been marketed as a policy for increasing agricultural yields, ensuring food security and reducing rural poverty. electricity pricing rapidly emerged as a powerful political tool and stake as for as Tamil Nadu is concerned. During 1990s Tamil Nadu was a power surplus state. The situation has turned on its head during 2000 due to increased industrialization. However, the price agriculturalists pay for power on an all - India basis about 27 per cent of what domestic consumers pay. While in Gujarat it is 42 per cent, in Bihar it is 21 per cent, those in Haryana and Andhra Pradesh pay 8 per cent. At the same time in Punjab and Tamil Nadu, it is free. What's even more remarkable in Tamil Nadu is that the free power isn't metered.

### Research Issue

In a pure macro economic framework the public utilities are supposed to function efficiently. They may not earn profit but at least operate on a no-profit – no – loss basis. However, when they are forced to involve themselves in a “free” regime, then all hell is broke out and they are plunged into a “Sick unit syndrome”. Hence, a re-look into such policies is warranted.

### Economics of Free Power Supply

policy of free electricity for agriculture has been criticized. That is, more than its stated advantages all the major four stakeholders namely the farmers, the Electricity Board, State Government and the society stand to lose as briefly given in table 1.

**Table 1 Economic Consequences of Free Power Supply to Agricultural sector**

Actors	Economic Consequences
Farmer	Poor quality of supply and service. Low water – use efficiency. Inefficient irrigation. Competitive well dependency, resulting in high initial investment.
Electricity Board	Lower revenue, hence limited interest in serving agricultural consumers. Shortage of human resource leading to poor maintenance. Political pressure to retain free power. Low awareness and motivation of energy efficiency.
State Government	Burden on the State's financial condition. Political obstacle in abolishing this policy.

Hence abolishing the free power policy may be desirable from the perspective of improving the financial status of Tamil Nadu state, improving the quality of the electricity supply and of the environment. Yet it may also render the agricultural sector more vulnerable and may reduce food production. This call for a need to create win- win situation, where both the state and farmers gain while reducing the consumption of electricity and ground water. This paper makes a modes attempt to propose a win- win situation.

### Objectives of the Study

To analyze the power supply position, demand for power consumption of electricity by the agricultural sector in Tamil Nadu.

To identify areas in which Tamil Nadu can improve under the scheme of free electricity.

### Data

The study covered a period of 15 years (i.e from 2000-01 to 2014-15). The study was based on secondary data. The required data were collected from the annual reports of the Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO). annual growth rate and compound growth rate were computed to analyse the data.

### Demand for Power in Tamil Nadu

The demand for power has increased from 7131 MW in 2000-01 to 13594 MW in 2014-15. That is, within 15 years the demand has doubled. The Annual Growth rate of demand for power was very high in the year 2013-14 (13.13 %). The calculated CGR for demand for power in Tamil Nadu was 4.62 per cent.

**Table 1 Demand for Power in Tamil Nadu**

Year	Demand (MW)	AGR
2000-01	7131	-
2001-02	7158	0.38
2002-03	6942	-3.02
2003-04	7455	7.39
2004-05	7647	2.58
2005-06	8209	7.35
2006-07	8803	7.24
2007-08	8969	1.89
2008-09	9459	5.46

2009-10	10046	6.21
2010-11	10670	6.21
2011-12	10713	0.40
2012-13	11283	5.32
2013-14	12764	13.13
2014-15	13594	6.50
CGR	4.62	

**Source: Tamil Nadu Electricity Board (TNEB)**

**Supply and Deficit of Power in Tamil Nadu**

The data for the study period revealed that the electricity requirement is high but the availability is low, so Tamil nadu is facing electricity deficits.

**Table 4 Supply of Power in Tamil Nadu**

Year	Supply Required (MU)	AGR	Supply Available(MU)	AGR	Deficit (MU)	%
2000-01	46702	-	39462	-	7240	14.58
2001-02	46232	-1.01	42951	8.84	3281	6.61
2002-03	42130	-8.87	39395	-8.28	2735	5.51
2003-04	45665	8.39	45042	14.33	623	1.25
2004-05	47872	4.83	47570	5.61	302	0.61
2005-06	47872	0.00	47570	0.00	302	0.61
2006-07	54194	13.21	53853	13.21	341	0.69
2007-08	61499	13.48	60445	12.24	1054	2.12
2008-09	65780	6.96	63954	5.81	1826	3.68
2009-10	69668	5.91	64208	0.40	5460	10.99
2010-11	76293	9.51	71568	11.46	4725	9.51
2011-12	80314	5.27	75101	4.94	5213	10.50
2012-13	85685	6.69	76705	2.14	8980	18.08
2013-14	86163	0.56	81275	5.96	4888	9.84
2014-15	86256	0.11	83559	2.81	2697	5.43
CGR	4.39		5.39			100.00

**Source: Tamil Nadu Electricity Board. (TNEB)**

The compound growth rate (5.39%) of available electricity supply was found as impressive compared to the CGR (4.39%) of required electric power supply. Nevertheless the deficit was more than 2000 MU during nine out of 15 years. The percentage of deficit reflected this : it was more than 5 per cent during 9 out of 15 years though for a period of three years it was less than one per cent.

**Power Consumption by Agricultural Sector**

In this scenario the available data for the years 2000 – 01 to 2014-15 revealed that there is a continuous increase in the consumption of power by the agricultural sector. It was observed from table 3 that there was only a mild negative trend during two years 2002-2003 and 2008-09, and for the rest of the years it has shown an increasing trend in the power consumption by agricultural sector

**Table 3 Power Consumption by Agricultural Sector**

Year	Agriculture	AGR
2000-01	5.57	-

2001-02	5.75	3.23
2002-03	5.4	-6.09
2003-04	5.61	3.89
2004-05	5.84	4.10
2005-06	5.94	1.71
2006-07	6.19	4.21
2007-08	6.41	3.55
2008-09	6.3	-1.72
2009-10	7.15	13.49
2010-11	7.55	5.59
2011-12	7.72	2.25
2012-13	7.93	2.72
2013-14	8.2	3.40
2014-15	8.46	3.17
CGR	2.97	

**Source: Tamil Nadu Electricity Board (TNEB)**

The compound growth rate of three per cent implies a significant improvement in the consumption of power by agricultural sector.

**Areas that need to be addressed**

Wherever power for agriculture has been free, it has an impact on the overall financial viability of the state utility. Some sort of cross subsidization is acceptable, but when it is totally free there is no economics and optimal utilization. So to achieve a win-win situation the following points are to be taken into consideration, by the TNEB as well as the state government.

**Rationality :** uninterrupted 8 hours electricity should be ensured to the agriculture sector. Quality pumps can be provided and the use of quality pumps will result in the low consumption of electricity.

**Efficiency in Cultivation :** Those who are producing more than expected can be awarded excess subsidy according to their performance.

Only Marginal (less than one hectare – 65% in India) and small (less than 2 hectares – 18% in India) farmers can be provided free electricity. Slap rate can be fixed for electricity consumption by the medium and large farmers.

Adoption of Drip Irrigation on a large scale will consume less water (less power consumption) and productivity will be more.

For a long metering of electricity consumption by the farmers has been advocated but the government has not taken any steps fearing an hostile attitude from the farmers. This is purely a political decision leading to economic loss.

To practically bring the Win-Win situation happen a two pronged approach is a must.

The produces of the farmers – be it food grains or vegetables or commercial crops – must get a fair and remunerative price. This requires policy initiatives and a fool proof institutional framework (e.g. regulated markets) which really delivers.

By metering and adopting a slab system in the power supplied to agriculture factor, the poor farmers will get benefit the benefits and the large and big farmers are made to contribute according to the amount of power consumption. It will help TNEB on three counts

exact amount of power consumption by the agricultural sector will be known. Misuse, power theft and Transmission and Distribution (T & D) losses can be reduced.

its revenue will increase enabling it to reduce the cost of investment as it borrows heavily.

long term planning will become possible as financial health of TNEB/TNGDC improves.

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