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New Electricity Tariff--Its Impact on Consumption, Revenue and Financial Performance

– Ishwari Karki★

Introduction:

In Nepal there are about eight enterprises running under the Government sector. The Nepal Electricity Corporation (NEC) is one of them having cent percent share contribution by the Government, i. e., the Government is the owner and controller over the various activities such as management, finance, price determination etc. The focus of this paper rests only on the pricing policy which is said to be a crucial factor in each enterprise. Strictly speaking, this is the paper which will deal with only Nepal Electricity Corporation and its tariff of electricity. Here, the attempt will be made to display the major influencing factors that had interplayed for tariff revision last time since the life–history of corporation is just fifteen years old but the tariff had been revised so many times. The headings and sub–headings are outlined as follows: The objectives, Influencing factors (supply and demand and World Bank Assistance), Introduction and Characteristics of New Electricity Tariff, Impact Evaluation of New Electricity Tariff (impact on consumption and income from sales and impact on financial performance) and Findings and Conclusion.

Objectives:

The NEC revised its old electricity tariff and the new tariff started to be effective from Jestha 2033 B.S. and the same tariff is now under operation. The objective of this paper is mainly

★ Ishwari Karki is a Research Scholar associated with Economics Instruction Committee, Tribhuvan University, Kirtipur.

focused on the impact evaluation of new electricity tariff in terms of (i) Electricity consumption, (ii) Revenue earning and (iii) Financial performance of NEC.

Influencing Factors:

Due to various circumstance the corporation felt the need to revise its existing tariff. Some points are highlighted here under.

(i) **Supply & Demand Factor**: Firstly, it was the supply factor that its power supplying capacity being limited to only 39,878 kilowatt (as installed generating capacity) which consists of 31,590 KW hydel and 8,288 diesel power respectively. This total power generating capacity of 39,878 KW had been installed in the year 2030 B.S. and no more additions could be made further. It is greatly expected that after big new power projects like Kulekhani and Devighat Hydel Projects would come into its operation, the present situation of impending power shortage will greatly be reduced.

Secondly, the demand factor had played a significant role. Unlike a stagnant supplying capacity the demand for power (peak load) was increasing by more than **20 percent**[1] in average per year. Sometimes, the corporation had to make up the deficit in supply system by adding more diesel plants which mean to make the generation cost quite expensive. Thus it was high time for the corporation to bring a proper balance between prevailing supply and demand and to correct a critical situation that may come up in future, the revision in existing tariff as an effective measure had been felt to be introduced.

(ii) **World Bank Assistance** : Thridly, about three and half years ago (i. e., in the year 2032 B.S.), the World Bank studied the financial position of the corporation including the prevailing financial constraints and opportunities. By that time the World Bank had made one of the recommendations that the HMG/N should revise the existing electricity tariff in order to improve the financial position of the corporation to improve and extend better services to its customers and for the development of power in the country's infrastructural facilities. Moreover,

1 Moreover, this peak load increasing rate of 20 percent does not reflect the demand of the whole year accurately since it suffers from the situation of suppressed consumption arising from inadequate generating capacity. Otherwise the figure of peakload would stand greater.

before signing the loan agreement2 for the execution of Kulekhani Hydel Project (63,000 kilowatt generating capacity) the World Bank rose a question that the Nepal Electricity Corporation will have to be in profit by at least two and half percent soon in terms of its assets because the World Bank terms stipulate that a project seeking a loan has to be in profit by at least that margin.

Introduction and Characteristics of New Electricity Tariff

Let the old electricity tariff revised and new tariff–sheet published into the public notice. First of all its main characteristics are highlighted below:–

Firstly, a general observation shows that the overall increment in the existing rate is quite significant. The tariff to each type of customer in terms of both minimum or demand charge (i. e., fixed charge) and unit charge (i.e. variable charge) has been increased to a greater prcentage.

Secondly, the tariff for domestic consumers has not only been increased, but also the tariff structure or set-up itself is distinct. It seems that the rate of increase is in progressive order by two ways.—The unit price increases constantly with the rise in units consumption and the minimum monthly demand charge also increases with the ratio of amper installation. So there seems to be the price discrimination between the domestic consumers of most lower, lower middle and higher income groups. This sort of new tariff policy on the part of the domestic consumers is quite appreciable too. Actually under the old tariff the richer and the cleaverer section of the society were getting more benefits. Perhaps, it is most important characteristics of new tariff that it ensures to discourage more consumption of electricity. It attempts to discourage the use of higher power consuming electrical appliances. Rather this tariff would reflect a check and balance policy for a large number of people by providing electricity for lighting purpose as the minimum

Thirdly, as in old tariff, there are not two types of tariff separately framed, i. e. one for Bagmati Zone and another for Narayani Zone. This means that there is no regional discrimination in tariff structure, which is another distinctive feature of new electricity tariff.

2 This Kulekhani Hydel Project is meant for mid-development region and NEC is supposed to supply the power generated by this project and thus its loan agreement has been of its concern,

Impact Evaluation of New Electricity Tariff

To evaluate the impact of new electricity tariff on electricity consumption (units sale) income from sale, and financial performance of the corporation is the overall objective of this paper. In order to fulfil the above said objectives, the consumers (of the homogeneous nature) have been classified into five groups, e.g. domestic, industrial, commercial, bulk supply and street lighting. With the help of statistical data of five fiscal years (three fiscal year under old tariff and two under new tariff) the analysis has been made.

(i) Impact on Electricity Consumption and Revenue Earning :

Table-I

DOMESTIC CONSUMERS (INCLUDING TEMPORARY SUPPLY)

Units Sold and Income from Sales–Increase Over

Previous Year

	UNITS SOLD		INCOME FROM SALES			
Fiscal Year	Units (in lac)	Increase Percentage	Amount (in lac)	Increase Percentage	Average income per unit (in Ps)	Number fo Consumers
Old Tariff						
2030/31	416.86	27.75	98.51	30.70	23.63	56.622
2031/32	475.07	13.96	110.83	12.51	23.33	58.296
2032/33*	520.17	9.49	134.56	21.40*	25.87	61.137
Average increase %over previous three years		17.06		21,54	24.27	
New Tariff						
2033/34	527.19	1.34	210.09	56.13	39.85	63.477
2034/35	571.69	8.44	221.28	5.33	38.71	75.638
Average increase% over two years		4.89		30.73	39.28	

Source : Nepal Electricity Corporation

*In the fiscal year 2032/33, the increment of 21 .40 percent as income from sales stands in higher percentage. It is due to the reason that the income in last two months Jestha and Ashadh ccnstitures that figure when the tariff was revised. Looking at the monthwise revenue figures in all the twelve months of f. y. 2032/33 the average monthly revenue during tn months (Old tariff) and two months (New tariff) comes to Rupees 10,10,889 and Rs. 15,60,028 respectively.

The above table clearly indicates that in all the five years both units sale and income from sales are increasing. However, the increment in income from sales in last two years (new tariff) seems comparatively higher or significant than the increment in unit sales in those years. Looking at the average figures, the average percent increase in units sale over first three years (old tariff) is rather higher than the average increase in units sale in last two years, which stands at 17.06% and 4.89% respectively. At the same time, the average increase in income seems higher in last two years than in first three years, the figure stands at 30.72% and 21.54% respectively. Looking at the per untt average income column, the average income per unit in last two years (new tariff) stands quite a handsome figure of 39.28 paisa in comparison to average income per unit of 24.27 paisa in first three years (old tariff). Besides, year to year, consumers are also adding up to the system. From the above analysis, it is found that there is no significant improvement in unit consumption or the consumption is more or less stagnant. The income from sales improved appreciably only due to higher tariff.

Table--2

INDUSTRIAL CONSUMERS

Units Sold and Income from Sales—Iucrease Over Previous Year

Fiscal Year	UNITS SOLD		INCOME FROM SALES			
	Units (in lac)	Increase Percentage	Amount (Rs. lac)	Increase Percentage	Average income per unit (in paisa)	Number of consumers
Old Tariff						
2030/31	105.65	57.48	27.06	80.28	25.61	939
2031/32	131.76	24.71	32.58	20.40	24.73	879
2032/33	182.12	48.22	46.56	42.91	25.56	973
Average increase percentage over three years		43.47		47.86	23.30	

New Tariff						
2033/34	224.64	23.35	79.75	71.28	35.50	1122
2034/35	266.70	18.72	101.54	27.32	38.07	1418
Average increase percentage over two years		21.03		49.30	36.78	

Source: Nepal Electricity Corporation

Similar with of domestic consumers the percentage increase in units sale seems higher over first three years than the percentage increase in units sale in last two years. So far as the percentage increase in income is concerned, its increare is higher in last two years rather than in first three years. In case of units sale the average increase figure over first three years and last two years stands at 43.47% and 21.03% respectively whereas the average increase in case of income over previous three years and subsequent two years comes to 47.86% and 49.30% respectively. One thing distinct from that of domestic consumers is the units sale that has been increasing very sharply over the whole five years in this case. It also means that the increase in tariff could not make any reduction in consumption rather the consumption increased every year quite significantly. Looking at the increasing tendency of demand it can be assumed that the industrial consumers cannot being a check policy of checking consumption level (specially in short sum) rather even the higher tariff would not check up or reduce the consumption level. The average income per unit over last two years seems quite higher in comparison to the average income per unit over previous three years. The figures stand at 36.78 paisa and 25.3 paisa respectively.

Table-3

COMMERCIAL CONSUMERS

Units sold Income from Sales–Increase over previous Years

Fiscal Year	UNITS SOLD Units (in lacs)	Increase Percentage	INCOME FROM SALES Amount (Rs. lac)	Increase Percentage	Average income per Unit (in paisa)	Number of Consumer
Old Tariff						
2030/31	63.94	8.19	15.97	15.39	24.97	26
2031/32	77.78	21.65	20.89	30.81	26.85	55
2032/33	89.51	15.08	27.77	32.95	31.02	58
Average increase percentage over three years		14.97		26.38	27.61	
NewTariff						
2033/34	101.34	13.22	44.91	61.72	44.32	60
2034/35	109.30	7.86	41.94	(-)6.62	38.37	84
Average increase percentage over two years		10.54		25.51	41.35	

Source: NEC

From the above table it is clearly seen that both units sale and income from sales are increasing each year side by side. However, specially in this case, we found one thing quite distinct that the income from sales in last one fiscal year 2034/35 is reduced by three hundred thousand rupees approximately or say relatively the increment over previous year 2033/34 is quite negative. It is due to the reason that the income fmrom sales under new tariff in average has been reduced otherwise the increment in income from sales in the first year 2033/34 (new tariff) is quite excellent which is 61.72%. The average income per unit over last two years is such higher i.e. 41.35 paisa in comparison to the average income per unit in previous three years which was only 27.61 paisa.

Table-4

*BULK SUBPLY

Units Sold and Income from Sales–Increase Over Previous–Year

Fiscal Year	UNITS SOLD		INCOME FROM SALES		
	Units (in lac)	Increase Percentage	Amount (Rs. lac)	Increase Percentage	Average income per unit (in paisa)
Old Tariff					
2030/31	37.02	(–)157.29	7.86	(–)61.20	20.74
2031/32	46.21	24.82	8.99	17.06	19.45
2032/33	59.40	28.54	11.56	28.59	19.46
Average increase percentage over three years		(–)12.3		(–)2.23	19.88
New Tariff					
2033/34	61.16	2.96	11.91	3.03	19.47
2034/35	64.05	4.73	24.64	6.88	38.46
Average increase percentage over two years		3.84		4.95	28.96

Source : NEC

*Bulk supply here means The Corporation supplies to boarder lines of India at the fixed price of 14 paisa per unit and at its return India supplies to boarder lines of Nepal (Tarai area) at the same price equally. It is just dual agreement between two countries.

The tariff for bulk supply has not been changed. It was 14 paisa per unit and the same price continues. Since bulk supply is one of the consumer class, the separate table and data have been presented. However, from the point of view of study of impact on new tariff, it does not make any sense. We see that over the sole five years both units also and revenue from sales are increasing, the increment seems very gradual. The average revenue per unit increased throughout the period.

Table-5

STREET LIGHITNG

Units Sold and Income from Sales–Increase

Over Previous Year

Fiscal Year	UNITS SOLD		INCOME FROM SALES		
	Units (in lac)	Increase Percentage	Amount (Rs. lac)	Increase Percentage	Average income per unit (in paisa)
Old Tariff					
2030/31	8.71	17.86	1.34	44.09	15.38
2031/32	8.85	1.60	1.45	8.21	16.38
2032/33	8.93	.90	1.56	7.59	17.46
Average increase percentage over three years		6.78		19.96	16.40
New Tariff					
2033/34	9.65	8.06	2.72	74.36	28.19
2034/35	11.50	19.17	4.25	56.25	36.95
Average increase percentage over two years		13.62		65.31	32.57

Source : NEC

Comparing the results of two period between old tariff and new tariff it is found that the average increment ratio of units consumption is just double in later case than what in previous, it is 13.62% and 6.78% respectively. Similarly, the average increment ratio of income is more than three times greater in last two years than in first three years, the figures stand as 65.31% and 19.96% respectively. The average income per unit over last two years is greatly figured as 32.57 paisa whereas it was only 16.40 paisa over the first three years in average. The table clearly reveals that the average income per unit is increasing every year. Taking the case of this consumer class, after the tariff has been increased, the consumption increased by 100%which is never found in case of other consumers. It seems that the demand in this case is enelastic or demand is not sensitive to price.

ii) Impact on Financial Performance of NEC:

Let us come to the point of finacianl performance of Nepal Electricity Corporation. Taking the case of FY 2033/34, operating revenue increased by 57.68% and operating expenditure decreased by 70.98 lacs riepresenting a decrease of 28.23% (including royalty charges) written back Rs 16.01 lacs and surcharge on royalty payable Rs 14.98 lacs. The operating revenue per unit sold increased from 32.64 paisa to 37.72 paisa and operating cost per unit sold decreased from 97.39 paisa to 27.20 paisa, the different of 10.52 paisa per unit sold being the net profit to the corporation. This might be the first time that the NEC could get so much contribution margin. The table given below provides the information about operating profit/loss in terms of assets in different years.

Table- 6

Net Operating Profit/Loss in Terms of Assets

Fiscal Year	Value of Assets (Rs.)	Not Operating Profit (Rs.)	Not Operating Loss (Rs.)	Not Operating Profit/Loss % in terms of Assets
2030/31	168576014	912659		0.54%
2031/32	310407197		18332377	(-)5.91%
2032/33	316827054		9118380	(-)2.88%
2033/34	431761000	10848000		2.5125%
2034/35*				

*The operating profit loss figure of this year not available.

The table clearly reflects the financial performance that in first year 2030/31 Nepal Electricity Corporation could earn 0.54% profit in terms of assets and continuously in two subsequent years it rather had to bear a huge loss percentage. In the f.y. 2033/34 NEC earned so much profit which figures more than crore representing 2.5125% in terms of assets. This profit figure of 2.5125% was slightly rather higher than what World Bank terms stipulated. Thus, we see that Nepal Electricity Corporation has made a sound financial performance.

Finding & Conclusion:

Coming to the overall picture of consumption, revenue throughout the whole period (five fiscal year) under this study we can visualise mainly the following phenomena:

Firstly, during the period of the initiation of new tariff, the consumption of each class of consumers in average increased, however, the increment seems insignificant.

Secondly, during the five year period the contribution of each class of consumers to revenue (income from sales) seems significant, however, their contribution after new tariff is quite appreciable.

Thirdly, looking at all the operating results of two fiscal years 2033/34 and 2034/35 the first year (of new tariff operation) 2033/34 has been found the best one in view of units consumption, level of income etc. In the last year 2034/35 those increment do not seem significant.

Fourthly, after the introduction of new electricity tariff, NEC improved its finacial health quite sharply and it is unquestionable to say that the impact or results of new lectricity tariff in this sense is quite appreciable.

Lastly, this is the situation that brings limitation specially to such a impact study. Since the consumption had been suffered from situation of suppressed demand arising from inadequate supply capacity it is difficult to evaluate and visualise the real impact of new electricity tariff. We may have to arrive to this conolusion that there is no substantial incrementin units consumption but whether it is due to higher tariff or suppressed demand situation or any other reason, is still to be carefully studied.