

THE ELECTRICITY CONSUMER GRID

A quarterly information bulletin

Volume VII, No. 2 of 2007

April - June, 2007

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- *The GOA Policy for development of Small Hydropower (SHP), 2007*

And More.....



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PREFACE

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Fuel crisis for power generation is not a new phenomenon. Also, concerns about global warming and rising prices of the depleting fossil fuels have brought the focus on renewable sources. Most of the SERCs have made it mandatory for the states to obtain a specified amount of energy from renewable sources if they are available. Until recently, there was hardly any regard for this sector as it was seen as an unviable option. Assam has immense hydel, biomass and solar potential but these have remained grossly unexploited. This edition of Consumer Grid focuses on the Clean Development Mechanism for financing electrical projects with less carbon emissions and the opportunities it offers to investors.

Power tariff is determined based on its availability, source type and capacity. An interesting article on how drought affects power tariff is included in this edition. Also, articles on few tips to save power, how/why consumers should contribute to reducing power thefts and safety in handling of electrical equipments by consumers are included in this edition.

The Consumer Advocacy Cell has received feedback that one of its empanelled members, an NGO called “SCORPION” from Guwahati had organized a three day awareness camp on the occasion of National Science day. The camp focused on the need for conservation of power and use of CFLs to save power. We call upon all empanelled groups of the Cell to take similar initiatives and create awareness among the public in their areas of operation. We hope that active participation of the electricity users, NGOs and cooperation from the utilities in using power efficient technologies will go a long way in overcoming power shortage in the state.

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"Without books the development of civilization would have been impossible. They are the engines of change, windows on the world, 'Lighthouses' as the poet said 'erected in the sea of time.' They are companions, teachers, magicians, bankers of the treasures of the mind, Books are humanity in print" – Arthur Schopenhauer 1788-1860, German Philosopher.

"Every experience in life, everything with which we have come in contact in life, is a chisel which has been cutting away at our life statue, molding, modifying, shaping it. We are part of all we have met. Everything we have seen, heard, felt or thought has had its hand in molding us, shaping us." – Orison Swett Marden 1850-1924, American Author, Founder of Success Magazine

FROM THE CHAIRPERSON'S DESK

The Electricity Act, 2003 requires the Regulatory Commissions to fix a minimum quantum of renewable energy generation in the portfolio of electricity resources. The purpose behind this is to encourage tapping of these sources for production of electricity against the growing perception that the traditional sources of fossil fuels are fast depleting as also the need to explore all avenues to meet the tremendous gap between demand and production. Availability of identified viable sources and willingness of investors with appropriate technological expertise at their disposal to take up such projects will largely determine the extent to which renewable sources are commercially exploited. The experiences of different states are therefore likely to be different. There will however be a commonality of interest in specifying certain relevant parameters through Regulation for clarity and convenience of investors and licensees alike. The Assam Electricity Regulatory Commission has started the process of framing a Regulation for this purpose.

The renewable electricity generating sources generally refer to small hydel project upto 25MW capacity, wind, solar, biomass, urban/municipal and industrial waste etc. which has immense potentiality for Power generation. Realising the importance Govt. of Assam has notified a Policy for development of small Hydro power in March 2007 which is a welcome step.

The share of energy generation from renewable sources is still meagre in our country. The commercial cost of such generation is of course generally higher than that for conventionally produced electricity.

Success in this sector of energy production will be of help to mitigate the power shortfall to a considerable extent. Already responses have been received from some investors. We look forward hopefully to successful electricity generation from renewable sources through viable projects.

Sd/-

(P.K. Bora)

News Briefs

NTPC to set up 750 mw plant in State*(Source: The Assam Tribune, June 1 2007)*

There may be some respite in store from power woes, with Assam Government and National Thermal Power Corporation (NTPC) inking a tripartite agreement paving the way for transfer of all assets belonging to Bongaigaon Thermal Power Station (BTPS) to the Central public Sector undertaking. The formal signing ceremony attended by Chief Minister, Tarun Gogoi, State Power Minister, Pradyut Bordoloi, Union Power Secretary, Anil Razdan, CMD of NTPC, D Shankarlingam, State Chief Secretary, PC Sarma, besides top officials of Central Government and State Government, was held at Assam Bhavan. As many as three agreements were signed among Assam Government, APGCL and NTPC. Agreements included a power purchase agreement. The 750 MW Project is envisaged to be completed during the 11th Plan period. First two units are projected to be completed in 2010-2011, while the third unit is scheduled to be commissioned by 2011-2012.

PM Manmohan Singh asks power ministry to set up mechanism to involve key states in hydro policy making*(Source: The Energyline.com, June 4 2007)*

PM Manmohan Singh has asked the power ministry to set up a Task Force -- that should also comprise states with significant hydro generation potential -- to facilitate coordination among key stakeholders in policy-making for hydro power projects. The task force will be tasked with identifying serious legal and regulatory bottlenecks hampering harnessing of the country's hydro generation potential at an optimum pace.

Power ministry advises utilities to implement additional measures for improving project management*(Source: The Energyline.com, June 19 2007)*

The power ministry has advised utilities to implement additional measures for improving their project management in order to achieve quicker execution of generation capacity addition envisaged by them during the current Plan period. These include mandatory introduction of an IT-based monitoring mechanism by these developers to ensure effective management control in project implementation. Besides, developers will also be required to put in place measures to ensure preparation and timely

upgradation of project evaluation and review technique (PERT) chart for their projects. The power ministry has also asked key domestic power sector civil and equipment supply contractors to commensurately ramp up their technical workforce for carrying out three-shift implementation work on a daily basis similar to Chinese vendors. That will, in turn, help further compressing implementation time for these projects.

NEEPCO reports highest shortfall in power generation from its hydro-based capacity during March 2007

(Source: The Energyline.com, May 15 2007)

NEEPCO has reported a generation shortfall of some 53% from its hydro power plants vis-a-vis the target envisaged by the power ministry for March 2007. NEEPCO's hydro power plants generated some 74 MU of energy as against the target of 159 MU set by the power ministry for the month. Meanwhile, the Bhakra Byas Management Board, another key hydro generator, has fallen short by 5.3% of its generation target for the month. As a group, private hydro power plants reported an overall energy generation shortfall of 26.7% against target during the month. In the thermal power generation segment, Damodar Valley Corporation (DVC) has reported a generation shortfall of 10% with respect to the target envisaged by the power ministry for it during March 2007. The central utility generated 1,254 MU of energy only against the envisaged target of 1,394 MU for the month. The overall shortfall in generation by state thermal power plants during the period was pegged at 9%. Private thermal power projects also failed to meet their generation target for the month, reporting an overall shortfall of 11% in electricity generation.

Tripura urges restoration of its 25 MW curtailed power

(Source: The Energyline.com, April 27 2007)

The state of Tripura has requested the power ministry to restore its 25 MW share of power from NTPC's eastern region projects. The allotment was suddenly discontinued on November 17, 2006 following which the state had undergone acute power crisis. In a recent communication, the state said that it is currently running a deficit of 40 MW against the peak demand of about 150 MW, as a result of which it is resorting to more than one and a half hour of load shedding during the peak hours. In the light of this, the state has requested the power secretary Shri Anil Razdan to expeditiously take concrete action so that the power situation in the state can be improved.

REDUCE YOUR ELECTRICITY BILLS

1. In summer, for most of us electricity consumption increases. Switching off electrical appliances when not in use will reduce consumption.
2. Use tubelights or energy saving lamps, such as CFL (Compact Fluorescent lamp). The initial cost will be recovered by you through savings in electricity bills.
3. Use of electronic chokes with tubelights and electronic regulators with ceiling fans reduces consumption of electricity and amount of electricity bills.
4. Leakage in old /frayed wiring causes unnecessary consumption and may lead to electrical shock or other hazards, especially during rainy season.
5. Frequent opening of refrigerator door should be avoided. Position your refrigerator, television set, etc. in an airy space for better ventilation.

During 24 hours in a day, the demand for power changes over various time periods. It usually reaches the peak during the evenings (5 PM to 11 PM) when the lighting load is added to other loads. It is observed that to curtail demand during peak hours, the utilities often resort to load shedding. Also, it is observed that during peak hours the voltage fluctuations are quite high. *The simplest way of managing peak demand in the evenings is to control the use of high consumption electrical equipments. Consumers can help avoid shortage of power considerably by restricting the use of air-conditioner, geysers and other heating appliances, pumps wherever possible and other high power consuming electrical gadgets during the evening.*

SAY “NO” TO POWER THEFTS

1. How does power theft affects us?

- a) It results in overloading and damage to costly equipment, leading to breakdowns.
- b) It also causes deterioration of quality of supply resulting in voltage fluctuations and drops.
- c) When load exceeds normal levels, the distribution system breaks down and interrupts power supply. Thus power failure is sometimes the fallout of power theft.

- d) There are several cases of loss of life and property arising out of accidents caused due to power theft.
- e) The loss of power due to theft is termed as commercial loss and this loss within a certain limit is loaded into the overall tariff for electricity supply. As a result the tariff increases and the honest consumer have to pay a price for the dishonest ones.

2. What are the legal implications of power theft?

The Assam Electricity Regulatory Commission has made amendment of the AERC (Supply Code and Related Matters) Regulations 2004 for the purpose of specific incorporation of provisions dealing with the theft of electricity. A new chapter, Chapter 5 exclusively dealing with power thefts has been included after giving previous notice of 21 days inviting suggestions/objections etc from all stakeholders.

In the meantime, the Electricity Act 2003 had also been amended vide notification dated 28 May 2007.

1. Section 135: (i) In sub-section (1) the definition of theft of electricity has been widened to include usage of electricity through a tampered meter and usage of electricity for purposes other than authorized. Some of the legal implications of power theft according to these new provisions are as under:

- (ii) A new provision has been added providing that in case of a second and subsequent conviction of a person where the load abstracted exceeds 10 KW he/she will be debarred from getting any supply of electricity for a period which may be from three months to two years and shall also be debarred from getting any supply from any other source or generating station.
- (iii) A new section 1A has been added to allow the licensee to immediately disconnect supply in cases of theft of electricity is detected.
- (iv) Another new provision provides that a complaint with the police station shall be lodged within 24 hours from such disconnection.
- (v) A new provision provides that on payment of the assessed amount of electricity charges the supply line of electricity shall be restored within 48 hours of payment regardless of the lodging of complaint.
- (vi) Sub-section (2) has been amended to elaborate who the officer authorized by Government of the licensee for the purpose of entering, inspecting, breaking open and searching the premises being used for unauthorized use of electricity

2. Section 150: Relates to provision for cancellation of licence or certificate of competency issued to an electrical contractor if he is found guilty of abetting theft of electricity.

3. Section 151: Relates to making cognizable and non-bailable all offences related to the theft of electricity and electricity wire/equipment etc.
4. Two new sections as 151(A) and (B) has been inserted empowering the investigating police officer all the powers as provided in Chapter XII of the Code of Criminal Procedure, 1973 and an offence punishable under 135 to 140 or section 150 cognizable and non bailable.

3. What role can the consumer play to stop theft of power?

- a) Ensure safety and security of the service installations, including the meters and seals thereon. Any tempering of these equipments is punishable.
- b) Only designated Discom personnel are authorized to check the meter and undertake any jobs related to power supply. In case of any doubt, the person's identity card may be checked. For safety and security reasons only licensed contractors should handle any addition, alteration or rectification of your electrical wiring.
- c) Never allow unauthorized power supply to anyone within your premises or outside, more so when the recipients' line has been disconnected for pilferage or for non-payment of dues.
- d) Report any theft of power in your locality to the concerned authorities.

STEPS FOR INSTALLATION OF AIR-CONDITIONER/HEAVY POWER CONSUMING GADGETS AT HOME

You may be aware that the capacities of meters and other equipment for supplying electricity to a consumer are based on the connected load applied for by the consumer. Consumers are to inform the licensee if there is any change in their connected load. This is more important in case the load is increased. In such cases, if the existing meters and associated equipment are not sufficient capacity, this may not only lead to hazards to life and property, but also cause faults and breakdowns of the distribution network and outage of electricity supply. In order to avoid this, the following steps may be taken:

- a) Get your internal wiring checked by a licensed electrical contractor before installing on air conditioner or other gadgets drawing high load.
- b) Contact the concerned Engineer of your locality and apprise him of the intended increase in load.

Safe Practices for Electrical Handling

Electricity is a most faithful slave for a good master but may become dangerous for a bad master. Numerous electrical accidents takes place some of which are reported in newspapers and others remain unreported. From the statistics available it is found that most of the accidents occurred inside consumer premises due to wrong handling by users. Considering the importance of safe handling of electricity, some guidelines for “Safe Practices for Electrical Handling” are listed for the knowledge of different consumers.

1. Before replacing blown out fuse, switch off main switch first.
2. Use correct size of fuse while replacing.
3. Never temper with any electrical equipment, unless you are authorized to handle it.
4. While handling any home appliances, see that it is disconnected from supply, switch “off” is not enough. Leakage in the line can give serious shock.
5. Before replacing lamps, tube or shifting home or office appliances from one place to other, switch “OFF” the appliances.
6. If any equipment is giving mild shock check the earthing wire for properly earthed.
7. Always maintain earth connection in satisfactory condition. Safety depends upon good earthing.
8. Take care of live wire or conductors bare or insulated.
9. Be sure that all connections are tight and may not get loose due to vibration.
10. In case of fire disconnect the supply immediately and use recommended fire extinguisher, **never use water.**
11. Make sure that all safety precautions are taken and you are accompanied by a second person competent to render First aid and artificial respiration.
12. Do not open or close switches or fuse slowly or hesitantly, do it quickly and positively.
13. Do not attempt to disengage person in contact with a live apparatus which you can't switch off immediately. Insulate yourself from earth by standing on rubber mat or dry board, before attempting to clear. Don't touch his body; push him clear with a piece of dry wood.
14. Do not test the circuit with bare fingers.

What is Electric Shock?

When a person accidentally comes in contact with live electrical conductor or touches electrical equipment with frayed insulation or broken live conductor touching the metal frame, she/ he experience an electrical shock. During electric shock, current passes through the breathing centre at the base of the brain and causes this centre to stop sending out the nerve impulse which act upon the muscles responsible for breathing as a consequence breathing stops abruptly. If the shock is not severe, the breathing centre recovers after some times and resumes its vital function. Under the condition the victim become unconscious but heart action and blood circulation continue. Recovery depends upon prompt and effective lung ventilation until normal respiration is restored. At times the current may paralyze the breathing centre and it may require several hours for recovery. Such severe shock may prove fatal.

(More information on this subject in following issues)

Contributed by: Shri M.K. Adhikary,

Joint Director (Tariff), AERC.

MYT Tariff Petitions filed by ASEB and its Successor Companies for FY 07-08 to FY 09-10 at a glance

Assam State Electricity Board (ASEB) and its five successor entities submitted petition for Annual Revenue Requirements (ARR) for FY 2007-08 to FY 2009-10 along with tariff proposals for FY2007-08 to meet the additional revenue requirements before the Assam Electricity Regulatory Commission (AERC) as per provisions of the Electricity Act, 2003 and regulations made under the Act.

As per the provisions of Assam Electricity Reform Final Transfer Scheme, 2005, notified by the State Government as per the provision of the Electricity Act vide PEL.151/2003/Pt/349 dated 16th August, 2005, the ASEB is carrying out the function of bulk purchaser and bulk supplier. Accordingly, ASEB has filed petition before the Commission for Bulk Supply Tariff applicable for distribution companies.

The Annual Revenue Requirements (ARR) for ASEB submitted are as below:

Annual Revenue Requirements (ARR) of ASEB as Trader

Rs Cr

	FY 07-08	FY 08-09	FY 09-10
Sale of Power (MU)	4,127.43	4,579.47	5,147.44
INCOME			
Revenue from tariffs & Miscell. Charges	825.80	896.59	1,025.73
Total	825.80	896.59	1,025.73
Expenditure			
Power Purchase	798.80	866.98	992.39
Trans charges	-	-	-
Trans charges for PGCIL	-	-	-
R&M Expense	-	-	-
Employee Expenses	0.53	0.68	0.75
A&G Expense	1.07	1.14	1.21
Depreciation	-	-	-
Interest & Finance Charges	13.37	14.46	16.47
Less: Interest & other expenses capitalised	-	-	-
Other Debits	11.21	12.46	14.33
Extraordinary Items			
Other (Misc.)-net prior period credit			
Total	824.98	895.72	1,025.16
ROE 14%			
Less: Other Income	0.47	0.48	0.48
Add Provision for taxes	0.43	0.45	0.36
Annual Revenue Requirement	824.94	895.70	1,025.03

Salient Features of Tariff Petition for FY 2007-08

ARR Element	Filed (Rs. Crores)			
	LAEDCL	CAEDCL	UAEDCL	Weighted Average
BST rate per unit (Differential)- Rs./per unit	2.21	1.63	2.46	2.13

In the ARR submitted for ASEB as a Bulk Purchaser and Supplier, the ARR requirements of APGCL & AEGCL are included as below:

Annual Revenue Requirements (ARR) of APGCL

Rs. crores

	FY 07-08	FY 08-09	FY 09-10
Power Generation			
Energy generated (MU)	1,535.00	1,819.27	2,119.08
Sale of Power (MU)	1,476.34	1,747.03	2,037.35
Aux Consumption Loss %	3.8%	4.0%	3.9%
NCOME			
Revenue from tariffs & Miscell. Charges	329.26	394.41	464.02
EXPENDITURE			
Generation Cost	154.59	171.14	158.15
R&M Expense	8.04	8.52	9.03
Employee Expenses	48.41	61.26	71.52
A&G Expense	3.63	3.84	4.08
Depreciation	40.78	69.43	100.27
Interest & Finance Charges	61.59	77.79	116.80
Less: Interest & other expenses capitalised	12.31	29.41	55.68
Other Debits (incl. Prov for Bad debts, int on wk d)	1.23	9.67	8.63
Extraordinary Items	-	-	-
Other (Misc.)-net prior period credit	-	-	-
Total	315.95	372.25	412.79
ROE	20.21	23.88	41.45
Less: Other Income	5.20	5.22	5.24
Add: Provision for taxes	6.23	9.22	19.01
Annual Revenue Requirement	337.19	400.13	468.01

Salient Features of Tariff Petitions for FY 2007-08

- (a) Anticipated Gross Generation: 1535.00 MU
 (b) Anticipated net generation 1476.34 MU

(c)	Annual Fixed Cost	Rs 174.66 Cr
(d)	Annual Variable Charge	Rs 162.53 Cr
(e)	Average Tariff	Rs. 2.2839 / Kwh

A. Annual Revenue Requirements (ARR) of AEGCL

Rs Crores

	FY 07-08	FY 08-09	FY 09-10
Energy Available at interface point (MU)	4,127.43	4,579.47	5,292.35
Sale of Power (MU)	3,875.65	4,312.94	4,984.86
Loss %	6.10%	5.82%	5.81%
INCOME			
Revenue from tariffs & Miscell. Charges	300.91	289.01	325.76
EXPENDITURE			
PGCIL Charges & NERLDC charges	109.52	111.06	125.49
Repairs & Maintenance Expenses	9.97	10.57	11.20
Employee Expenses	127.35	100.16	112.14
Administration & General Expenses	1.98	2.09	2.22
Depreciation	24.54	33.15	34.57
Interest & Finance Charges	34.35	44.11	64.21
Less: Interest & other expenses capitalised	1.48	7.09	11.85
Other Debits	0.86	-	-
Extraordinary Items	-	-	-
Other (Misc.)-net prior period credit	-	-	-
Total	307.08	294.05	337.98
Return on Equity	13.99	13.99	13.99
Less: Other Income	25.68	26.12	26.58
Add: Provision for taxes	6.38	7.10	4.84
Annual Revenue Requirement	301.96	289.01	330.23

B. Annual Revenue Requirements (ARR) of SLDC

Fixed charges	Rs Crores		
Operations & Maintenance	07-08	08-09	09-10
Employees cost	1.27	1.00	1.12
Repairs & maintenance	0.10	0.11	0.11
Administrative & General Expenses	0.02	0.02	0.02
Depreciation	0.50	0.81	0.81
ULDC /NERLDC	5.16	5.16	5.16
Interest and Financing Charges	0.50	0.50	0.49
Taxes on Income	0.16	0.19	0.17
TOTAL	7.71	7.79	7.88
Less: Other Income	0.15	0.15	0.15
ARR of SLDC	7.57	7.64	7.74

Salient Features of Tariff Petition for FY 2007-08

The salient features of the petitions of AEGCL are:

- (a) Total Annual Revenue requirements Rs. 301.96 Cr
- (b) Anticipated transmission of energy 3875.65 MU
- (c) Transmission loss 6.10 %
- (d) Average transmission charge Rs. 0.78 / kwh

The salient features of the petitions of SLDC are:

SLDC charges Rs /MW/per day Rs 203.68

The ARR of Distribution Companies are submitted including Bulk Supply Tariff proposed by ASEB.

The Assam Electricity Regulatory Commission (AERC) after receipt of the petition directed ASEB and its successor entities to publish the ARRs and Tariff Proposals of all distribution companies along with projected energy sale proposals as below:

	LAEDCL	FY 07-08 CAEDCL	UAEDCL	LAEDCL	FY 08-09 CAEDCL	UAEDCL	LAEDCL	FY 09-10 CAEDCL	UAEDCL
Power Purchase									
Energy Available at interface point (MU)	1,614.01	1,060.02	1,201.63	1,796.12	1,179.62	1,337.21	2,019.10	1,326.06	1,503.22
Sale of Power (MU)	1,265.38	778.58	860.97	1,426.12	898.87	998.23	1,623.36	1,040.30	1,155.97
Loss %	21.60%	26.55%	28.35%	20.60%	23.80%	25.35%	19.60%	21.55%	23.10%
INCOME									
Revenue from tariffs & Miscell. Charges	649.00	364.74	447.90	799.78	452.82	547.02	977.35	541.31	659.19
EXPENDITURE									
Power Purchase	482.70	255.18	389.41	508.38	266.75	411.10	579.57	303.83	468.80
R&M Expense	6.71	6.51	7.87	7.11	6.90	8.34	7.54	7.31	8.84
Employee Expenses	113.54	88.30	77.39	147.60	114.79	100.60	162.36	126.27	110.66
A&G Expense	6.44	3.65	3.48	6.82	3.87	3.68	7.22	4.09	3.89
Depreciation	23.80	24.10	17.85	30.95	29.95	25.45	45.48	37.76	42.11
Interest & Finance Charges	35.16	31.37	28.75	52.28	37.31	44.64	64.97	42.02	55.25
Less: Interest & other expenses capitalised	1.32	0.37	1.46	4.40	1.60	4.45	0.48	0.03	0.01
Other Debits (incl. Prov for Bad debts)	15.06	9.08	23.26	30.12	9.97	34.42	35.21	9.22	44.17
Extraordinary Items	-	-	-	-	-	-	-	-	-
Other (Misc.)-net prior period credit	-	-	-	-	-	-	-	-	-
Total	682.10	417.83	546.54	778.87	467.93	623.79	901.88	530.48	733.71
ROE	0.79	7.67	0.75	0.79	7.67	0.75	0.79	7.67	0.75
Other Income	66.46	45.70	51.19	32.87	23.65	26.19	27.07	19.84	21.88
Provision for taxes	11.23	-	-	18.11	-	-	34.53	-	-
Annual Revenue Requirement	627.66	379.80	496.10	764.90	451.95	598.35	910.12	518.31	712.59

Tariff Proposals with existing Tariffs

LT CATEGORY		Existing in Rs.		Proposed in Rs.	
I	Jeevan Dhara	2.15	15/ connection	2.25	15/ connection
II	Domestic A upto 5 KVA				
	0-30kwh /month				
	0-120kwh /month /31-120kwh	2.75	30.00	3.00	30.00

LT CATEGORY		Existing in Rs.		Proposed in Rs.	
	/month				
	121-240/month	3.80	30.00	4.00	30.00
	Balance	4.50	30.00	4.75	30.00
III	Domestic B 5 kw to 20 kw	4.10	30.00	4.25	30.00
IV	Commercial upto 20 kw	4.50	110.00	4.75	110.00
V	General Purpose upto 20 kw	3.85	125.00	4.10	125.00
VI	Public lighting	4.20	120.00	4.40	120.00
VII	Agriculture upto 7.5 hp	2.25	30.00	2.50	30.00
VIII	Small Industries upto 25 kva				
	i) Rural	2.30	30.00	2.75	30.00
	ii) Urban	2.55	40.00	3.00	40.00
IX	Temporary Supply upto 20 kw (minimum charge)				
	i) Domestic	5.50	75.00/kw/day	5.80	75.00/kw/day
	ii) Non Domestic	6.50	120.00/kw/day	6.80	120.00/kw/day
HT CATEGORY					
I	HT Domestic above 25 kva	3.90	30.00	4.10	30.00
II	HT commercial above 25 kva	4.20	115.00	4.50	115.00
III	Public Water Works	4.05	125.00	4.30	125.00
IV	Bulk Supply				
	i) Government educational Institution	3.75	110.00	4.00	110.00
	ii) Others	4.05	145.00	4.50	145.00
V(a)	Small Industries 25 to 50 kva	2.75	40.00	3.20	50.00
V(b)	HT Industries-I ; 50 to 150 KVA	3.50	100.00	4.00	120.00
	TOD Tariff				
	0600 hrs to 1700 hrs	3.50		4.00	
	1700 hrs to 2200 hrs	5.50		6.30	
	2200 hrs to 0600 hrs	2.85		3.35	
V(c)	HT Industry-II (above 150 KVA)	3.60	140.00	4.00	150.00
		2.90	270.00	3.20	280.00
	TOD Tariff				
	0600 hrs to 1700 hrs	3.60		4.00	
	1700 hrs to 2200 hrs	4.80		5.30	
	2200 hrs to 0600 hrs	3.10		3.50	
VI	Tea, Coffee and Rubber (Season)	3.95	230.00	4.30	240.00
	TOD Tariff				
	0600 hrs to 1700 hrs	3.95		4.30	
	1700 hrs to 2200 hrs	5.50		6.00	
	2200 hrs to 0600 hrs	3.70		4.05	
	Off Season	3.95	40% of contract demand of season	4.30	40% of contract demand of season
VII	Oil and Coal	4.00	270.00	4.30	280.00
	TOD Tariff				

LT CATEGORY		Existing in Rs.		Proposed in Rs.	
	0600 hrs to 1700 hrs	4.00		4.30	
	1700 hrs to 2200 hrs	5.50		6.00	
	2200 hrs to 0600 hrs	3.85		4.15	
VIII	Irrigation	3.20	40.00	3.50	40.00

Salient Features of Tariff Petitions for FY 2007-08

	LAEDCL	CAEDCL	UAEDCL	Total
MU Purchase	1614.01	1060.02	1201.63	3875.66
MU Sales	1265.38	778.58	860.97	2904.93
% Loss	21.60	26.55	28.35	
BST rate per unit (Differential)- Rs./per unit	2.21	1.63	2.46	2.13
Average Tariff (Rs / kwh)	5.20	5.20	5.20	5.20

The handout is published as per the directives of the Assam Electricity Regulatory Commission to the petitioners namely Assam State Electricity Board (ASEB), Assam Power Generation Company Ltd. (APGCL), Assam Electricity Grid Corporation Ltd. (AEGCL), Lower Assam Electricity Distribution Company Ltd. (LAEDCL), Central Assam Electricity Distribution Company Ltd. (CAEDCL) and Upper Assam Electricity Distribution Company Ltd. (UAEDCL).

N.B: *The figures above are as per the proposals made in the tariff petition by the Companies. The Commission will decide on the new tariff after hearing all objections and suggestions from respondents/consumers.*

The Commission notified the last date for admitting objection petitions as June 21, 2007 which has been extended to July 10, 2007. The date for hearing has been fixed at 20th July 2007.

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BRAIN TEASERS

1. Pirate Pete was captured by a Spanish general and sentenced to death by his 50-man firing squad.

Pete cringed, as he knew their reputation for being the worst firing squad in the Spanish military. They were such bad shots that they would often all miss their targets and simply maim their victims, leaving them to bleed to death, as the general's tradition was to only allow one shot per man to save on ammunition. The thought of a slow painful death made Pete beg for mercy. "Very well, I have some compassion. You may choose where the men stand when they shoot you and I will add 50 extra men to the squad to ensure someone will at least hit you. Perhaps if they stand closer they will kill you quicker, if you're lucky," said the general. "Oh, and just so you don't get any funny ideas, they can't stand more than 20 ft away, they must be facing you, and you must remain tied to the post in the middle of the yard. And to show I'm not totally heartless, if you aren't dead by sundown I'll release you so you can die peacefully outside the compound. I must go now but will return tomorrow and see to it that you are buried in a nice spot, though with 100 men, I doubt there will be much left of you to bury." After giving his instructions the general left. Upon his return the next day, he found that Pete had been set free alive and well. "How could this be?" demanded the general. "It was where Pete had us stand," explained the captain of the squad. Where did Pete tell them to stand?

2. Two boys and a man need to cross a river. They can only use the canoe. It will hold only the man OR the two boys' weight. How can they all get across safely?

Answers

1. Pete told them to form a circle around him. All the squad was facing in at Pete, ready to shoot, when they realized that everyone who missed would likely end up shooting another squad member. So no one dared to fire, knowing the risk. Thus at sundown he was released.
2. The two boys go across. One of them gets out. The other one goes back. He gets out and the man gets in. Man goes across. Then the man gets out and the other boy gets in and goes across. Then the boy that was left gets in and now they both go across together.

Draught & Its Effect on Power Tariff

----- **M.K. Adhikary**

The North Eastern Region experienced draught like situation during 2006-07. As per the metrological data the overall shortage of rainfall in the region was in the order of 36%. The shortfall in rain largely affected the power generation from the predominantly hydro stations of the region. Out of total allocated capacity of generating stations of 560 MW the total hydro capacity is 350 MW. As such, shortfall in rain results in severe shortage of energy in the state which was experienced during last year.

Most of the hydro stations are executed under Central Agencies like NEEPCO & NHPC, the tariff of which is governed by regulations of CERC as per the provisions of The Electricity Act 2003.

On the other hand, the loss of availability from the generating stations does not relieve the power utilities ASEB/Discoms from making payment to the generating companies due to the tariff mechanism envisaged for the hydro generating station. Prior to Sept 2003, the power tariffs from the stations were in single part basis Rs/ KWH - where dues for payment was proportionate to energy supplied by the stations to the beneficiary utilities. However, after implementation of Two Part Tariff and Availability Base Tariff (ABT) for the generating stations, the beneficiary utilities (ASEB/Discoms) are bound to pay the annual dues in the event of failure to generate power for non availability of rainfall in case the stations are ready in all other aspects. This mechanism of tariff was design to safeguard the generating station investor from the vagaries of nature by insulating them from external uncertainty. However the resultant effect of such mechanism on the utilities and to the ultimate consumers is a matter to be discussed. The following table shows the allocated energy from different hydro stations of the region to the state of Assam along with liability to pay to the generating companies during 2006-07.

Station & agency	Energy (MU)	Amount payable Rs Cr	Av rate Rs/ KWH at the generating station
200 MW Kopili-1 Neepeco	481.819	25.717	
25 MW Kopili-11 Neepeco	42.155	5.215	
50 MW Khangdong Neepeco	145.657	10.160	
405 MW Ranganadi Neepeco	687.798	93.2	

Station & agency	Energy (MU)	Amount payable Rs Cr	Av rate Rs/ KWH at the generating station
75 MW Doyang Neepco	104.385	23.441	
105 MW Loktok NHPC	141.971	15.874	
Total	1603.784	173.608	1.08

Due to draught like situation during 2006-07, the energy available from different stations are reduced almost to an extent of 30% as shown in the table below:

Station & agency	Energy (MU)	% Deficit	Amount Due Rs Cr	% Reduction of dues	Av Rate
200 MW Kopili-1 Neepco	353.514	27.363	25.09	2.439	
25 MW Kopili-11 Neepco	44.651	+4.863	4.710	9.688	
50 MW Khangdong Neepco	77.792	47.126	10.170	+0.097	
405 MW Ranganadi Neepco	431.560	37.882	88.73	4.796	
75 MW Doyang Neepco	79.619	23.898	24.9	+6.223	
105 MW Loktok NHPC	148.856	+3.813	16.25	+2.37	
Total	1135.993	29.16	169.85	2.16	1.49

From the above, it may be seen that while the deficit in energy availability is 467.79 MU or 29.16% the reduction of dues is only Rs 3.758 Cr or 2.16%. This has resulted in the increase of average rate from Rs 1.08 / kwh to Rs 1.49 /kwh. (41 paise/kwh), with a burden of (Rs 46.57-Rs 3.758 Cr) = Rs 42.81 Cr annually (Rs 46.57 Cr being the additional liability to these hydro stations for less availability i.e. 0.41×113.5993). This increase in average rate of power purchased is caused by factors which are beyond the control of the utility. The deficit of energy compelled the utility to resort to load shedding which resulted in loss of revenue for the utilities.

In such circumstances, the utility may find alternative sources of power to mitigate the shortfall and may purchase power from trader as an option. There are licensed traders who arrange energy from different sources from different state/ central or private utilities to supply power to the needy state/utility. Generally rate of such power are determined by market forces. With the prevailing deficit scenario in the entire country, the rate is considerably higher with differential rate for peak hour and off-peak hour. Naturally, such arrangement will further increase burden on the utility over and above the liabilities to pay to the allotted generators. Considering Rs 4.00/kwh is rate for power purchase to mitigate the shortfall, additional financial burden to purchase the shortfall energy of 467.79 MU will be Rs 187.116 Cr. As such total additional burden to maintain the energy supply at the original level of 1603.784 MU from allocated hydro stations among others to the consumers will be Rs 187.116 + Rs 42.81 = Rs 229.928 Cr.

Considering approx 2500 MU of estimated annual sale of energy, the overall effect of increase on consumer tariff will be Rs 0.92/ kwh. In the event no power is purchased to mitigate the shortfall, the sale will reduce by 70% of shortfall 467.79 MU = 327.45 MU (Considering 30% T&D Loss). The estimated sale will be (2500-327.45) = 2172.55 MU. In this case, the increase of tariff will be $(42.81 \times 10 / 2172.55) = \text{Rs } 0.197$ say 20 paise per kwh.

The above analysis reveals that draught which is a natural calamity have affected the overall financial position of power supply utilities. While the Generating Companies under Government of India is protected by the mechanism of tariff, the distribution utilities are affected without any fault on their part. To protect the distribution utility the ultimate consumer will have to bear the brunt of nature by way of paying higher tariff of 20 paise/ unit with 20% load shedding or 92 paise with optimum supply by the distribution utilities in a most fare way of fixing tariff for power utility.

Alternatively, to relieve electricity consumers from the brunt of natural calamity like drought, the State may come forward to assist the distribution utility by providing financial support to mitigate the crisis from natural calamity relief fund. The State Government may also plead before the Government of India to assist the state in line with assistance for drought relief.

(The writer is Joint Director (Tariff), Assam Electricity Regulatory Commission.

Disclaimer: The above views are those of the writer only and not the views of the Commission).

CLEAN DEVELOPMENT MECHANISM AND FINANCING OF ELECTRICAL PROJECTS.

GREEN HOUSE GASES (GHG), GLOBAL WARMING AND KYOTO PROTOCOL:

Gases like carbon dioxide, methane, nitrous oxide etc are termed as green house gases (GHG) as they absorb and re-emit some of the infrared radiation warming the earth's surface and the atmosphere. Any change in the quantity of these gases in the earth's atmosphere can change the earth's temperature and climate. Between 1860 AD and 2000 AD, the average global surface temperature has increased by about 0.3⁰C to 0.6⁰C. The increase in concentration of green house gases in the atmosphere has been attributed to the human activities like burning of fossil fuels, deforestation, agricultural practices and manufacturing of industrial products. The enhanced green house effects are likely to increase the frequency and intensity of storms, hurricanes, change in vegetation and rise in sea level reducing land area and threatening marine lives etc.

Developing countries especially the poor ones are more vulnerable to these changes due to high dependence on natural resources and their limited financial and institutional capacity to adapt to extreme events.

Keeping in mind the adverse effects of the increase in green house gas emissions to the atmosphere, the developed countries and the economies in transition at the Third Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) in 1997 in Kyoto Japan, agreed to reduce the GHG emissions by at least 5% less than the benchmark year 1990. This protocol is known globally as the Kyoto Protocol.

The Kyoto Protocol demands the developed nations to reduce their carbon emissions at least by 5.2% less than that of the year 2012 – the commitment period starting from 2008. The Protocol also defines Clean Development Mechanism (CDM) to facilitate the developed nations to achieve the objective.

CLEAN DEVELOPMENT MECHANISM (CDM):

CDM offers opportunities to developed nations to undertake Clean Energy Programs in Developing Nations and take credit of such emission reduction to their account, and comply with the protocol. Thus carbon has become a tradable commodity. In other words, the Clean Development Mechanism (CDM) is an arrangement under the Kyoto Protocol allowing industrialised countries with a greenhouse gas reduction commitment (so-called Annex 1 countries) to invest in emission reducing projects in developing countries as an alternative to what is generally considered more costly emission reductions in their own countries.

Carbon emission – a major cause of global warming, is primarily due to use of fossil fuels such as coal and petroleum in thermal power plants, and automobiles. Therefore any project undertaken to improve the energy efficiency in the utilities, or renewable sources of energy or clean energy projects supporting emission reduction, qualify for carbon credit.

VALUE OF CARBON:

As a result of the Kyoto Protocol, carbon has become a tradable commodity with an associated value. One tonne of CO₂ reduced through a CDM activity, when certified by a designated entity, is known as CER (certified emission reduction), which can be traded.

Revenue from CERs can form part of a project's annual cash inflow, equity and debt.

At present, carbon is traded at around Euro 8 to 10 per CER, and the prices can be expected to rise as the dead line for meeting the Protocol targets draws nearer. And so, the countries/companies save carbon credits to meet strict targets in the future.

CDM project process

Outline of the project process

An industrialised country that wishes to get credits from a CDM project must obtain the consent of the developing country hosting the project that it will contribute to sustainable development. Then, using methodologies approved by the CDM Executive Board (EB), the applicant (the industrialised country) must make the case that the project would not have happened anyway (establishing additionality), and must establish a baseline estimating the future emissions in absence of the registered project. The case is then validated by a third party agency, a so-called Designated Operational Entity (DOE) to ensure the project results in real, measurable, and long-term emission reductions. The EB then decides whether or not to register (approve) the project. If a project is registered and implemented, the EB issues credits, so-called Certified Emission Reductions; CERs (one CER being equivalent to one metric tonne of CO₂ reduction), to project participants based on the monitored difference between the baseline and the actual emissions, verified by an external party called a DOE.

A potential CDM project therefore undergoes the following steps:

- i) **Project Identification and Preparation of Project Design Document (PDD):** The first step is to undertake a preliminary assessment of projects and identify projects with GHG

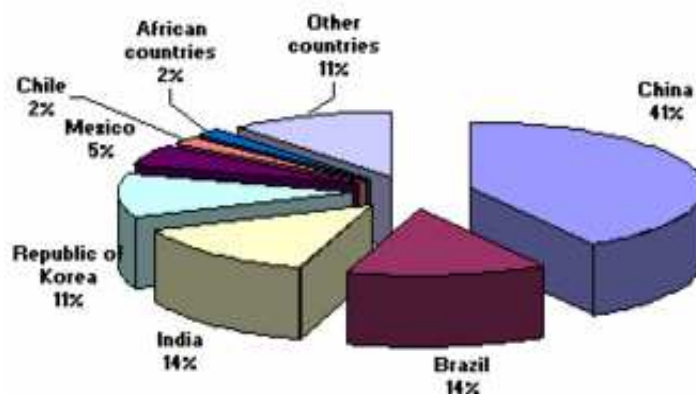
abatement potential. Upon identifying an eligible project, the project developer has to prepare a Project Design Document in the prescribed format. This entails demonstrating and estimating the GHG abatement potential of the project using an appropriate baseline, to determine actual ER credits generated by the project

- ii) **Approval by Designated National Authority:** The second step relates to project submission of the PDD to the Designated National Authority (in our case the Ministry of Environment and Forest).
- iii) **Validation and registration:** The project design document developed in (ii) is validated by an independent accredited entity or Designated Operational Entity (DOE) and submitted for registration to the CDM Executive Board. There are a few DOEs in India like DNV, TUV, JQA and SGS.
- iv) **Monitoring, verification and certification of ER credits:** During the operation of the project, the ERs generated are measured according to the monitoring and verification plan and verified by an independent and accredited designated operational entity (DOE).
- v) **Issuance of ER credits:** The CDM Executive Board certifies the verified ERs that can be transferred to the buyer in case of an existing purchase agreement or traded in the ER market at prevailing prices.

Possible Eligible CDM project activities:

Possible eligible project of RE/EE Programs would include:

1. Wind turbine generators – for captive consumption/grid connected
2. Improvement of energy efficiency at the Utilities
3. Waste heat recovery programs
4. Fuel switching from fossil fuel to Bio fuel
5. Biomass Power Generation.
6. Biomass Gasification.
7. Biomethanation
8. Biofuel oil.
9. Small Hydro Projects.

CDM projects to date

Distribution of CDM emission reductions, by country.

A lot of developments have been taking place in the last few years to reduce the use of fossil fuel in generation of power to arrest the pollution level from further increasing and also to ensure sustainable development of the nation through long term energy security. The awareness about these new technologies and mechanisms among the public is of utmost importance in any democratic process. The “Consumer Grid” will focus on the new developments in the power sector in its future editions.

(Data Source: Electrical India – May 2007 and the internet)

GOVERNMENT OF ASSAM
POWER (ELECT) MINES & MINERALS DEPARTMENT
ORDERS BY THE GOVERNOR OF ASSAM
NOTIFICATION

Dated: Dispur, the 19th March/2007

No. PEL.196/2002/199:- The Governor of Assam is pleased to notify the Policy for development of Small Hydropower (SHP) 2007 as below:-

1. SCOPE FOR SMALL HYDRO POWER DEVELOPMENT IN ASSAM

Assam has a Hydro power potential of the order of 541 MW against which only about 2.00 MW has been harnessed so far from the Bordikharu Small Hydro Project (that remains inoperative since April'1991 due to Technical snag). The Government of Assam (GOA) has decided to encourage generation of power through small hydropower (SHP) sources of energy and has framed a policy so that the development of this sector serves as an engine to achieve the objective of promoting the all-round development of the region by including private participation.

This policy shall be in operation from the date of its publication as notified Order of Govt. of Assam. All projects awarded within this period under this policy will be governed by this policy for their entire duration.

All Hydropower projects/stations with an installed capacity of up to 25 MW are eligible under this policy. The identified potential at present for development of Small Hydro Power (SHP) Projects is about 148.90 M at about 90 identified locations as at Annexure 'A'. The policy further allows the development of any other new SHP sites identified by Independent Power Producer (IPP)/ Agencies/ Users societies.

2. PARTICIPATION & PREQUALIFICATION :

The state of Assam invites any qualified interested IPP/Users societies to bid for identified projects for the development of this sector. There shall be a prequalification by the GOA of the bidders for the projects in the state. The prequalification shall be based on the balance sheets, annual reports and other reported evidence of past experience, financial and technical capacity etc. The weightage to be given on financial capacity, technical capacity, past experience and other relevant attributes of the applicants. The guidelines for evaluation and passing score required for prequalification shall be specified in the bid documents inviting bids for prequalification, A merit list will be prepared by the GOA or its authorized representative based on prequalification criteria of the applicants who qualified to bid for the identified project conforming to clause-4.

3. PROJECTS:

3.1 The list at Annexure identified projects is available for development with indications of estimated capacities and for which preparation of Pre-feasibility Reports (PFR) or Detailed Project Report (DPR) is in progress. The Assam State Electricity Board (ASEB)/ GENCO or any other IPPs / Users societies nominated by the Govt. of Assam (GoA) will undertake to prepare the PFR/DPR in a time bound manner. Any feasible SHP potential site that has not been listed in the annexure may also be identified by the IPPs/ Users societies and prepare the PFR/DPR. The evacuation requirements including details of nearest sub-station will be specified in the DPR or pre-feasibility studies conforming to Para-8.

3.2. The projects shall be offered for a period of 35 (thirty-five) years from the date of award at the end of which they shall revert to the GOA. Further extension beyond 35 years shall be considered on mutually agreed terms, as per the decision of the GOA.

4. PROCESS OF ALLOTMENT:

4.1 The allotment of the project may be on the basis of competitive bidding and direct allotment to pre-qualified IPPs/users societies depending on the preparedness of the site,

4.2 The projects for which PFRs/DPRs is available shall be put on competitive bidding.

4.2.1 The projects shall be advertised in order to seek bids. Applications in response to the advertisement should be accompanied by a non-refundable draft of Rs, 0.25 Lakh for the projects of capacity below 1 MW, Rs 1.00 lakh for 1 to 5 MW and Rs,2.00 lakhs for projects above 5 MW payable to ASEB/GENCO or as may be decided by the Power Deptt.GOA.

4.2.2 All bidders will be subject to prequalification as provided in Paragraph-2.

4.2.3 All pre-qualified bidders will be provided with the PFRs/ DPRs prepared by the ASEB/GENCO or any other IPPS/ Users societies nominated by the Power Deptt. GOA,

4.2.4. Bids shall be invited for premium payable upfront to the Government of Assam per MW in the case of each project/site subject to a minimum threshold premium of Rs, 1.00 lakh per MW installed capacity and part thereof. Bids received below the threshold premium will be summarily rejected.

4.2.5 Projects will be allotted to the bidders making the highest bids, The successful bidder shall be required to deposit the premium amount due within 2 months or any other specified period of receiving intimation regarding his bid being successful. The successful bidder may be permitted to provide 50% of the bid amount in excess of the threshold as a bank guarantee encashable at the time of actual or

scheduled financial closure, whichever is earlier. However the bidder is to deposit full amount over and above the threshold amount at the time of actual or schedule financial closure whichever is earlier.

4.2.6 If more than one bidder bids the identical premium per MW for any site/station, a gradation list based on pre-qualification criteria described above shall be the basis for allotment.

4.3 The projects for which PFRs/DPRs are not available shall be allotted to the pre-qualification Bidders,

4.3.1 The projects shall be advertised in order to seek bids. Applications in response to the advertisement should be accompanied by a non-refundable draft of Rs 0.25 lac for the projects of capacity below 1 MW, Rs. 1 lac for 1 to 5 MW projects and Rs 2 lacs for projects above 5 M project payable to ASEB/successor Company.

4.3.2 All bidders will be subject to pre-qualification as provided in Paragraph-2.

4.3.2 The merit list of the bidders shall be prepared according to the prequalification criterion and the projects allotted to the bidders.

4.4. Any feasible SHP potential site that has not been listed in the annexure may also be identified by the in society and propose to the GOA for allotment along w self prepared verifiable feasible PFR/DPR.

4.5. The application fee and bid amount shall be payable as per paragraph 4.2.1 and 4.2.4

4.6 These projects shall be allotted on first cum basis.

5. FACILITATION TO BE PROVIDED BY THE GOVERNMENT

5.1 For efficient interaction with other Government department, the State Government shall declare ASEB/Successor Company as the Nodal agency and subsequently ASEB/GENCO shall constitute a technical body & a nodal officer for clearing of project proposals after detail scrutiny of technical aspects.

5.2 Application shall be disposed of within a period of 60 days from the date of application.

5.3 IPPs/Users Society are required to obtain clearance from the Departments of Forests, Irrigation, Geology & Mining, Revenue, Environment, District Administration, Police, Public Work Department (PWD), Aviation as the case may be. Where ever required techno-economic clearance of the central Electricity Authority shall be obtained by IPPs/Users Society.

However, all documentation and required paper as clarifications should be submitted by the IPPs/users society to the Nodal officer who shall forward the same to the concerned departments for their consideration and conveying their consent/clearance or comments if any within 30 days. If any

department fails to respond within the stipulated time, the necessary clearance to the project will be deemed to be granted.

5.4. Allotment of Land: Optimum requirement of land for implementation of a particular project shall be allotted sold at a premium/ lease to be decided case wise and shall constitute as a part of the bid document.

5.5 The matter of concerns for the projects/ clearances etc., will be put up by the Nodal Officer before the steering committee and high powered committee regularly, who will be empowered by the GOA to resolve all project related matters.

5.6 Nodal Agency shall also monitor the progress of the work, including investment vis-a-vis the state of work regularly.

5.7 A Steering Committee comprising of Secretary (Power), Secretary (Forest) or his representative, Secretary (Irrigation) or his representative, Secretary (Revenue) or his representative, CMD-ASEB/ Successor company shall be constitute by GOA to provide single window clearance for the projects under this policy. Nodal Officer will be convener of the committee.

5.8 High Powered Committee under the Chairmanship of chief Secretary and Secretary (Forest), Secretary (PWD), Secretary (Industry), Secretary (Revenue), Secretary (Irrigation), Secretary (Water Resources), CMD (ASEB/Successor company) and Secretary {Power) as members shall be constituted by GOA for redressal of problems and policy matters for the projects under this policy. Secretary (Power) shall be convener of the committee.

6. SALE OF POWER

The IPP/Users society can contract to sell power to any HT consumer within Assam (only up to and below 5 mw capacity), to local rural grids within Assam, which are not connected to ASEB's /successor Company's main grid to rural power distribution entities (i.e. those which sell power to predominantly rural areas), to any consumer outside the state, or to the ASEB/Successor company. Sales to the ASEB/ Successor Company will be mutually negotiated. All sales will be approved, as may be required, by the Assam Electricity Regulatory Commission (AERC).

In case of power supply to any rural interior areas, where SHP project may come up IPPs / Users Society can make suitable arrangement for sale of power to a group of rural consumers in a stand-alone generation and distribution system subject to fulfillment of requirement of AERC.

7. WHEELING CHARGES

7.1. The infrastructure and facilities of ASEB/Discoms/Transco as may be available will be made available to all IPPs/Users society for wheeling the generated energy.

7.2 Wheeling charges for wheeling the generated energy to bulk purchaser/third party consumers inside or outside the State will be as determined by the Assam Electricity Regulatory Commission (AERC).

7.3 No wheeling charges are applicable in cases of sales to the ASEB/Successor company in case power is supplied directly to ASEB/ DISCOMs

7.4 The ASEB/DISCOMs/TRANCO will prepare a standard wheeling and banking agreement draft consistent with this policy statement. This will be made available prior to any bidding for projects where applicable.

8. EVACUATION OF POWER

ASEB/GENCO will determine the specifications of the evacuation facilities required including the interconnection point and voltage and the same would be specified in the project information document provided in the application form. The ASEB/GENCO will carry out the implementation of evacuation facilities at charges to be mutually negotiated. The cost of transmission lines in excess of 5 km shall be borne by the IPPs/Users society and ASEB/GENCO on mutually agreed terms and conditions. If generating company draw its own transmission line for the independent power generation and transmission system, It will be subjected to regulatory action as a transmission licensee.

9 BANKING

Developers can avail of the facility of banking of energy within fixed period spans of 6 months, All terms and conditions of the banking shall be incorporated in banking agreement to be drawn with the IPPs/users society. This shall be approved, as may be required, by the regulator.

10. DESPATCH

Priority will be accorded for despatch into the grid by these IPPS/Users society ahead of merit order and any other sources of supply, subject to any overall restrictions on the proportion of power that may be bought from such sources which may be imposed by the Government/Regulator in the interest of keeping the overall cost of power purchase within reasonable limits.

11. ROYALTY/DUTY/TAXES

11.1 On all projects governed under this policy.

(a) For project up to 5 MW, there will be no royalty, provided entire energy generated is sold within the state of Assam.

(b) For above 5 MW, a royalty @Rs. 0.25 per unit of net energy generated will be paid to GOA by IPPs/users society. It may be reviewed after 5 years.

(c) For power project on irrigation canal fall/barrages/dams, a water cess @ Rs. 0.05 per kwh per year shall be payable by IPPs/ users society to the irrigation department or otherwise as specified by the GOA for maintenance of the existing irrigation structures/facilities owned and operated by the irrigation department.

11.2 Electricity duty as per law will apply.

11.3 No further levies, taxes, charges other than those stipulated in this policy would be levied by the state Government and its IPPs/users society or the Regulator on the IPPs/users society governed by this policy, for a period of 10 (ten) years from the date of this policy.

12. INCENTIVE BY THE CENTRAL/STATE GOVERNMENT

12.1 No entry tax will be levied by the state government on the power generation, transmission equipments, except on building materials for projects.

12.2 The financial/ fiscal incentives for the small hydropower development available from the Ministry of Non-Conventional Energy Sources, Govt. of India shall be facilitated/extended to IPPs/Users society.

13. TRANSFER OF ALLOTMENT

Free transfer of shares will be permitted in the companies allotted projects as per the Procedure laid down in this document.

14. TIME LIMIT FOR EXECUTING THE PROJECT

14.1 IPP shall sign a Memorandum of Understanding (MoU) with Nodal Agency for the development of the project within a month of the issue of allotment letter by GOA.

14.2 The IPPs/users society shall make necessary application for obtaining the statutory clearance of the project and approval of the concerned authorities as described in CI.5 Sub CI.5 after carrying out the confirmatory survey and investigation. The IPPs/Users society shall be responsible for completeness of all submissions within 6 months from the date of allotment or any other period deemed fit by the GOA, Failure to do so within the stipulated time frame shall be treated as noncompliance with the requirement stipulated in this paragraph.

14.3 Nodal Agency shall accord the approval of the DPR/application within 2 months from the submission. IPP shall enter into an implementation agreement with the nodal agency within one month from the date of approval of the project.

14.4 The IPPs/Users society shall achieve the financial closure within 12 months from the date of receipt of all statutory approvals and clearances given by the State and central Government. Financial closure would imply firm commitments for financing the entire project, with all pre-disbursement conditions having been fulfilled and the loan documentation being complete.

14.5 The project should be made operational within 36 months from the date of receipt of all statutory approvals and clearance by the IPPs/Users society.

14.6 The failure to reach any of the two milestones in time mentioned in 14.1 & 14.2 above will result in automatic cancellation of the allotment of the site, and, forfeiture of upfront premium amounts. No compensation would be payable to the IPPs/users society in such instance.

14.7 The failure to reach the mile stone in time as in 14.3 above would result in a liability to pay penalty by the IPPs/Users society to GOA, computed at the equivalent royalty revenue that would have been payable to the GOA had the project met the milestone. In case the project enjoys an exemption from royalty in the initial years, the duration of royalty exemption would be reduced by the period of delay.

14.8 The IPPs/users society may surrender the allotment back to GOA if on completion of the DPR within stipulated time frames; it has grounds to establish that the project is not techno-economically viable. On such surrender, the GOA would refund any premium amount paid in excess of the threshold premium to the IPPs/Users society.

15. ROLE OF ASEB/GENCO/DISCOMs/TRANSCO

15.1 The ASEB/GENCO/DISCOMs/TRANSCO will be responsible for preparing the standard wheeling and banking agreement draft (paragraph 7), determination of evacuation requirements (para 8), and overseeing banking, dispatch, and royalty arrangements (Paragraph 9,10,11), The same shall be drawn before six months of commission of a SHP as per aforesaid para.

15.2 The ASEB/GENCO will be responsible for preparation of PFRs/ DPRs (para 3.1) carrying out the bidding process (Para 4) and monitoring of the development of allotted project delivery as per time schedules (Para 5 & 14).

15.3 The ASEB/GENCO will not participate in the bidding process. However, after allotment, upon request from the IPP/users society, the ASEB/GENCO may consider participating as a minority partner or perform certain tasks for the bidder on a consultancy basis. Such participation would

be independently negotiated between ASEB/GENCO with the IPP/users society is not mandatory on the part of ASEB/ GENCO.

16. ROLE OF IRRIGATION DEPARTMENT, GOVT. OF ASSAM.

16.1 The discharge available in the canals of irrigation schemes/ projects will be let out by the Irrigation Department, GOA based on availability of water in irrigation canals/Rivers only. The release of water in canals will be under sole control of the Irrigation department GOA and no claims for compensation on this account will be considered.

16.2 IPPs/Users society will be allowed to utilize acquired canal land (subject to availability) for setting up infrastructure for power generation on lease as per terms and conditions set forth by the Irrigation Department. Initial lease period will be of 35 years. In case of non-availability of Government land, the Govt. at the IPPs request at acquisition cost will acquire by the IPP/Users society or private lands.

16.3 IPP/Users society shall obtain consent from Irrigation department GOA for the design of works, which shall have the bearings on safety and operation of the canals.

16.4 The cost of Remodeling / Improvement works of existing Irrigation Schemes/ Projects due to the SHP shall be borne by the IPP/Users society that may be necessary for setting up of S (utilizing canal discharge).

17. REGULATORY ACTION

Aspects of this policy that require regulatory approvals from the concerned Regulatory Commission would be subject to such approvals being given and would apply in the manner approved by the Regulator.

18. DUE DILIGENCE

The applicant/IPP/Users society shall be responsible for carrying out due diligence with regard to his compliance responsibilities under various applicable Central/State/other laws, rules and regulation and ensure compliance with the same.

19. POWER TO RESOLVE DIFFICULTIES

In the event of a dispute, the interpretation of these guidelines made by the GOA shall be final. In all such matters, to the extent practicable, an opportunity shall be given to affected stakeholders to be heard before the Government takes any decision.

20, RENOVATION, MODERNISATION AND MANAGEMENT OF EXISTING POWER PLANTS

20.1 Small hydro power stations in Assam have outlived their optimal life span and some of them are working at sub optimum level and have become defunct in the absence of due attention required to schedule maintenance renovation and modernization. This has resulted in unplanned outages and frequent breakdowns. As a result Availability Factor and the Plant Load factor of number of plants are below satisfactory level. It is proposed to increase the operating efficiency of the existing power plants through introduction of professional management and renovation and modernization programmes. The process of renovation and modernization involves substantial investment. The state propose to throw open the renovation and modernization of some of the existing SHP plants to private sector (joint sector) or NGOs or cooperative participation which can help in bringing in more efficient management practices leading to greater availability of power. Many existing stations are in standalone mode and are encouraged to connect to the grid to increase Plant load factor and its financial viability. However, the priority to supply electricity to local area during peak hours (0600—0900 and 1600— 2200 hours) will be there.

20.2 GOA will encourage the renovation and modernization of those existing hydro plant owned by ASEB/CENCO/any other IPP/Users society, which are technically conforming to the conditions of extension of operative life by more than 20 years at a fraction on of the cost of New Plants. GOA will decide to introduce the Private Sector, or NGOs or Cooperative Societies or any other Power Development Societies on case-to-case and merit basis.

20.3 Private Sector, or NGOs or Cooperative will be allowed to operate/ manage the plants wherever necessary. Such participation by the private sector or NGOs or cooperative may follow the following routes.

- a) Lease, Rehabilitate, Operate and Transfer (LROT)
- b) Joint ventures with ASEB/ Successor Company.
- c) Sale of existing plants to private sector or to any joint sector venture

Sd/- (J • P. MEENA, IAS)

COMMISSIONER & SECY. TO THE GOVT. OF
ASSAM, POWER (ELECT) DEPARTMENT.

Annexure: List of identified Small Hydro Power Project in Assam.

Sl. No.	Name of Scheme	Stream	District	Head	Proposed Installed Capacity (MW)
				(M)	
1	Bordikharu	Bordikharu	Karbi Anglong	180	2
2	Dhansiri	Dhansiri	Darrang	9	20
3	Lungnit-1	Lungnit	Karbi Anglong	50	3
4	Lungnit-2	Lungnit	Karbi Anglong	44	3
5	Dalaima	Dalaima	North Cachar	79	6
6	Jamuna	Jamuna	Karbi Anglong	140	2
7	Myntriang-1	Myntriang	Karbi Anglong	200	6
8	Myntriang-2	Myntriang	Karbi Anglong	80	3
9	Kalanga	Kalanga	Karbi Anglong	80	4
10	Disaidam	Disai	Sivasagar	27	15
11	Janghangri	Janghangri	Karbi Anglong	120	2
12	Klarang	Lungnit	Karbi Anglong	80	4
13	Patradisa	Patradisa	Karbi Anglong	80	1
14	Dere	Dere	North Cachar	140	1
15	UM-MAT	UM-MAT	Karbi Anglong	60	2
16	Amphi	Amphi	Karbi Anglong	80	6
17	Sunani	Sunani	Karbi Anglong	80	2
18	Jenum-1	Jenum	North Cachar	80	4
19	Jenum-2	Jenum	North Cachar	180	4
20	Jiri	Jiri	North Cachar	60	1.5
21	Chapanala	Chapanala	Nagaon		0.75
22	Kaliani	Kaliani	Karbi Anglong	66	1.5
23	Amring	Amring	Karbi Anglong	79	20
24	Thar nala	Thar nala	North Cachar	100	1.5
25	PaishaNala	PaishaNala	North Cachar	120	1.5
26	Chiku nala	Chiku nala	North Cachar	80	1.5
27	Upper Borjuri	Upper Borjuri	Nagaon	100	1.5
28	Ddipun Nala	Selohi Dung	Cachar	240	2
29	Bordikarai-1	Bordikarai-Canal	Sonitpur		1.5
30	Bordikarai-2	Bordikarai-Canal	Sonitpur		1.5
31	Bordikarai-3	Bordikarai-Canal	Sonitpur		1.05
32	Dinar	Dinar nala	Karbi Anglong	40	0.5
33	Kohra	Kohra nala	Karbi Anglong	60	0.75
34	Umjaring	Umjaring	Karbi Anglong	100	1
35	Umjaring	Umjaring	Karbi Anglong	100	0.75
36	Umjaring	Umjaring	Karbi Anglong	60	0.9
37	Riambatarai	Riambatarai	North Cachar	60	0.55

38	Dalu	Apang	Cachar	40	0.5
39	Panbari	Panbari	Darrang	10	0.2
40	Janguan	Janguan	Dibrugarh	20	0.5
41	Manmaijon	Manmuar	Dibrugarh	20	0.5
42	Namdong	Namdong M	Dibrugarh	10	0.2
43	Khetri	Khetri	Kamrup	60	0.75
44	Bagijan	Bagijan	Karbi Anglong	5	0.1
45	Chelabour	Chelabour	Karbi Anglong	20	0.4
46	Danglangso	Danglangso	Karbi Anglong	20	0.4
47	Diphu	Diphu	Karbi Anglong	4	0.1
48	Diphu 2	Diphu nala	Karbi Anglong	20	0.2
49	Diphu 3	Kikrengiem	Karbi Anglong	20	0.3
50	Dirik Chiring	Dirik Chiring	Karbi Anglong	20	0.2
51	Horu Horgali	Horu Horgali	Karbi Anglong	20	0.4
52	Horu Nala	Horu	Karbi Anglong	20	0.3
53	Kagironga	Bodiphunadi	Karbi Anglong	20	0.4
54	Komeranggnan	Komeranggnan	Karbi Anglong	20	0.2
55	Langcham	Langcham	Karbi Anglong	15	0.2
56	Langsomepi	Langsomepi	Karbi Anglong	10	0.1
57	Lankhipam	Lankhipam	Karbi Anglong	40	0.75
58	Morjengnala	Morjengnala	Karbi Anglong	20	0.3
59	Paklangso	Paklangso	Karbi Anglong		0.3
60	Patradisa	Patradisa	Karbi Anglong	20	0.3
61	The dong	The dong	Karbi Anglong	20	0.2
62	Un Ju	Un Ju	Karbi Anglong	20	0.2
63	Um Pani	Um Pani	Karbi Anglong	8	0.3
64	Um Sares	Um Sares	Karbi Anglong	20	0.4
65	Um Ser	Um Ser	Karbi Anglong		0.3
66	Langkldang	Langkldang	Nagaon	20	0.3
67	Hansa Pani	Hansa Pani	Nagaon	5	0.1
68	Barjuri	Barjuri	Nagaon	20	0.15
69	Kai Pani nala	Kai Pani	Nagaon	5	0.15
70	Dere Nala	Dere Nala	North Cachar	20	0.5
71	Dijung	Dijung	North Cachar	40	0.4
72	Dikrambi	Dikrambi	North Cachar	20	0.2
73	Diyung-R	Diyung-R	North Cachar	20	0.3
74	Dolong nala	Dolong nala	North Cachar	40	0.6
75	Dolong nala	Dolong nala	North Cachar	40	0.6
76	Harangthal nal	Harangthal nal	North Cachar	40	0.75
77	Induki Nala	Induki Nala	North Cachar	40	0.6
78	Laisong	Jenum-R	North Cachar	20	0.4
79	Langku	Langku	North Cachar	20	0.3
80	Langku nala	Langku	North Cachar	10	0.15
81	Langpher	Langpher	North Cachar	20	0.2

82	Langting-2	Lahungdisa	North Cachar	20	0.3
83	Mahu	Barasarang-N	North Cachar	40	0.5
84	Mahu	Mahu-R	North Cachar	40	0.5
85	Mabong	Singplong	North Cachar	20	0.2
86	Subojai nal	Subojai nala	North Cachar	20	0.2
87	Pungjan	Pungjan	Sivasagar	2	0.2
88	Killing valley	Killing	Karbi Anglong	14	1
89	Lungsung	Lungsung			0.75
90	Kakachang	Kakachang	Karbi Anglong	75	0.5

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