

Understanding the Consumer Electricity Bill

By Hanumanth Raju G V, CSTEP

This is the 3rd article in the Empower blog series that CSTEP initiated to breakdown the power sector for a non-technical audience. In the first article, we began [decoding the journey of electricity](#) and in the second article we explained the [costs incurred in generating electricity](#) – the first step of the journey. In this, the 3rd article of the series, the author explains different components of your monthly electricity bill to help consumers make informed decisions.

Every month, a piece of paper listing the charges for the electricity used up for lighting our homes, running appliances, and charging our laptops and phones, arrives at our doorstep. It is the consumer electricity bill. Though well received, it is often not well understood.

This article simplifies the electricity bill, while detailing the aspects relevant for the consumers, to enable them to understand their bills better.



ಬೆಂಗಳೂರು ವಿದ್ಯುತ್ ಸರಬರಾಜು ಕಂಪನಿ ನಿಯಮಿತ
ವಿದ್ಯುತ್ ಬಿಲ್ / ELECTRICITY BILL

Dist. AEE(Ele.) N10-MUDALPALYA

Account Details

ಆರ್.ಆರ್.ಸಂಖ್ಯೆ/RR No 999
 ಖಾತೆ ಸಂಖ್ಯೆ/Acc Id 301
 ಮು.ಪಿ. ಸಂಕೇತ/ M. R Code 961

Personal Details

ನೆಲೆ ಮತ್ತು ವಿಳಾಸ/Name and Address

Connection Details

ಬಡಾವಣೆ /Tariff 1LT2A1-N
 ಸಂ. ಪ್ರಮಾಣ/Same Load 2KW+OHP

Billing Details

ಬಿಲ್ ಅವಧಿ/Bill Period 09/10/2019 - 09/11/2019
 ರಿ-ಬಿಲ್ ದಿನಾಂಕ/Re-bill Date 09/11/2019
 ಬಿಲ್ ಸಂಖ್ಯೆ/Bill No 0181

Consumption Detail

ಇಂದಿನ ಮೂಲೆ/Pres. Regy 1571
 ಹಿಂದಿನ ಮೂಲೆ/Prev. Regy 1511
 ಮೂಲೆ ಸ್ಥಿರಾಂಕ/Constant 1
 ಒಳಕ್ಕೆ/Consumption(Units) 60
 ಸರಾಸರಿ/Average
 ದಾಖಲಿತ ಚಾರ್ಜ್/Recorded MD 0.1KW
 ಪವರ್ ಫ್ಯಾಕ್ಟರ್/Power Factor 0.0
 ಸಂ. ಪ್ರಮಾಣ/Connected Load 0.0KW

ನಿಗದಿತ ಶುಲ್ಕ/Fixed Charges (Unit, Rate, Amount)

1 KW 60 60.00
 1 KW 70 70.00

ವಿದ್ಯುತ್ ಶುಲ್ಕ/Energy Charges (Unit, Rate, Amount)

30 3.75 112.50
 30 5.2 156.00

ಇಂದಿನ ಮೂಲೆಯಲ್ಲಿ ಶುಲ್ಕ/FAC Charges (Unit, Rate, Amt)

60 0.22 13.20

Additional Charges

ರಿಯಾಯಿತಿ/Rubatu 0.00
 ವಿ.ಎಚ್.ಯಂತ್ರ/PP Penalty 0.00
 ಹೆಚ್.ಲೋಡ್/Ex. Load/MD Penalty 0.00
 ಬಡ್ಡಿ/Interest 0.00
 ಇತರ/Others 0.00
 ತೆರಿಗೆ/Tax 24.17
 ಬಿಲ್ ಮೊತ್ತ/Bill Amt 435.87
 ಬಾಕಿ/Arrears 0.00
 ಕ್ರೆಡಿಟ್ & Adjustment 0.00
 ಸರ್ಕಾರದ ಸಹಾಯಧನ/GOK Subsidy 0.00

ಒಟ್ಟು ಮೊತ್ತ/Net Amt Due ₹ 436.00

ಪಾವತಾಗಬೇಕಾದ ದಿನಾಂಕ/Due Date 23/11/2019

The hard copy of the consumer bill

DISCOMs and Cost of Power Supply

The distribution company (DISCOM) plays an important role in ensuring a reliable power supply to its end consumers. To supply electricity to its consumers, a DISCOM incurs an average cost of supply (power-purchase cost, operation and maintenance cost, manpower cost, office expenses, etc.). To recover this cost of supply and sustain its operations, DISCOMs need to bill the consumers. It is important that bills reflect the total amount that needs to be recovered from the consumers. Similarly, consumers need to properly understand the components of a bill to be able to spot any errors in the bill, as well as to make payments promptly.

RR No.	Account ID	Bill No.	Billing Period	Bill Date	Due Date	Disconnection Date
999)	301	600	09-10-2019 - 09-11-2019	09-11-2019	23-11-2019	08-12-2019
Name & Address:		Type	Domestic - LT2A			
		Tariff	1LT2A1-N			
		Sanctioned load (KW)	2.00			
		Sanctioned load (HP)				

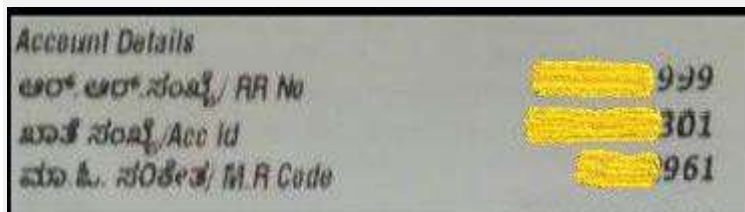
Meter Readings for Meter ID 2216542066					
Description	Date	KWH Meter	KVAH Meter	MD meter	PF
Present Reading	09-11-2019	1571	0	.1	0
Previous Reading	09-10-2019	1511	0		
Difference		60	0	.1	
Meter Constant		1	1	1	
Consumption		60	0	.1	
Less/Add: Consumption		0	0		
Net Consumption		60	0	.1	

Your Detailed Bill		Amount (Rs.)
Description		
Fixed charges: For the First 1.00 KW at Rs60.00 per kW		60.00
Fixed charges: For every additional 1.00 KW at Rs70.00 KW		70.00
Energy Charges : For the first 30.000 KWH at Rs3.75 per KWH		112.50
Energy Charges : For the next 30.000 KWH at Rs5.20 per KWH		156.00
Fuel Cost Adjustment Charges : 60.000 KWH at Rs0.22 per KWH		13.20
Interest on Revenue		0.00
Interest on Tax		0.00
Tax		24.17
Current Bill Amount		435.87
Arrears		0.00
Bill Correction		0.00
Bill rounding adjustment		0.13
Net Payable Amount		436.00
		Rupees Four Hundred Thirty-Six Only

A soft copy of the consumer bill

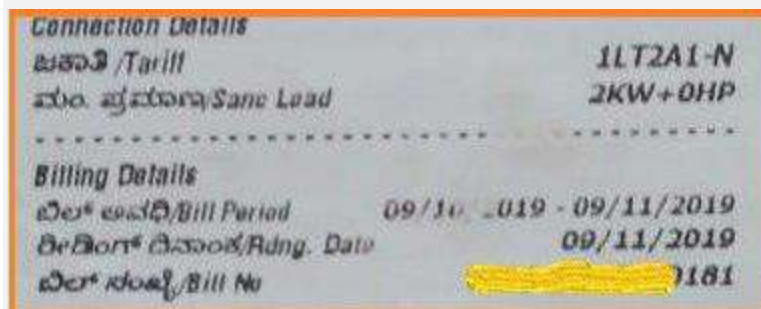
The Bill

Electricity bills are generated for all consumer categories, such as domestic, industrial, commercial, and industrial. Here we present a domestic consumer's bill for illustration purposes. The DISCOM creates a consumer identity through two unique numbers — 'Revenue Registration' (RR) number and 'Account Identity' number. The connection and billing details provide the sanctioned load for the consumer, the billing period, and the bill number.



Account Details	
ಅರ* ಅರ* ಸಂಖ್ಯೆ/ RR No	999
ಖಾತೆ ಸಂಖ್ಯೆ/ Acc Id	301
ಮಾ. ಸಂ. ಸಂಖ್ಯೆ/ M. R Code	961

Account Details



Connection Details	
ಜನಾತಿ /Tariff	1LT2A1-N
ಮಂ. ಪ್ರಮಾಣ/ Sane Load	2KW+DHP

Billing Details	
ವಿಲ* ಅವಧಿ/ Bill Period	09/10/2019 - 09/11/2019
ಡಿ.ಡಿ.ರಂ* ದಿನಾಂಕ/ Rdnng. Date	09/11/2019
ವಿಲ* ಸಂಖ್ಯೆ/ Bill No	1181

Connection and Billing Details

Bill components and calculation of charges

A consumer's electricity consumption is calculated on a monthly basis. The difference between current month's reading and previous month's reading provides the monthly electricity consumption by the consumer. In the example, the difference

between the previous and present reading ($1571-1511=60$) is multiplied with the Meter Constant (MC) — which is ‘**1**’ in this case — and so the total consumption is **60 units**. MC is a fixed value of each individual meter, which is used to convert or multiply meter consumption into actual consumption.

Based on the consumption and the sanctioned load, the following charges are levied:

1. *Fixed Charge (FC)*: FC is based on a consumer’s sanctioned load, which refers to the sum of the load of all electrical appliances within consumer premises. FC is levied to recover the overall cost of the network infrastructure laid by a DISCOM (poles, electric lines, electricity meters, etc.). The fixed charges vary with consumer categories, based on the sanctioned load and paying capacity. Here, the FC is INR 60/KW for the initial ‘**1KW**’ and INR 70/KW for the remaining KW.

2. *Energy Charge (EC)*: EC is calculated on the amount of energy consumed, and is levied to recover the cost of electricity purchased by the DISCOM. It is calculated slab wise (Table 1), and the charges increase as the number of consumed units increases.

Slab split	Slab for 1 month	Rate per unit
1 st Slab	30 units	INR 3.75 / unit
2 nd Slab	70 units	INR 5.20 / unit
3 rd Slab	100 units	INR 6.75 / unit
4 th Slab	Remaining units	INR 7.80 / unit

Table 1: Slab-wise energy charges applicable to LT-2 category consumers.

3. *Fuel Cost Adjustment Charge (FAC)*: FAC refers to the increase in cost — brought about by a hike in price of fuel/coal every month — that is passed on by the electricity-generation utilities to DISCOMs (who further pass it on to the consumers). FAC is levied on consumers each month and revised once in a quarter, jointly by State Electricity Regulation Commissions (SERCs) and DISCOMs.

4. *Tax/Electricity Duty*: The state governments have fixed a 9% tax on EC for each consumer. The application of this charge varies between states, since some states apply ‘tax’ for electricity consumption as a percentage of energy charges, while others apply ‘duty’ as INR/unit.

ನಿಗದಿತ ಶುಲ್ಕ/Fixed Charges (Unit, Rate, Amount)		
1 KW	60	60.00
1 KW	70	70.00

ವಿದ್ಯುತ್ ಶುಲ್ಕ/Energy Charges (Unit, Rate, Amount)		
30	3.75	112.50
30	5.2	156.00

ಇಂಧನ ಹೊಂದಾಣಿಕೆ ಶುಲ್ಕ/FAC Charges (Unit, Rate, Amt)		
60	0.22	13.20

Additional Charges		
ರಿಯಾಯಿತಿ/ Rebate		0.00
ಪಿ ಎಫ್ ದಂಡ/PF Penalty		0.00
ಹೆ.ಲೋ.ದಂಡ/Ex. Load/MD Penalty		0.00
ಬಡ್ಡಿ/Interest		0.00
ಇತರ/Others		0.00
ತೆರಿಗೆ/Tax		24.17
ಬಿಲ್ ಮೊತ್ತ/Bill Amt		435.87
ಬಾಕಿ/Arrears		0.00
ಜಮೆ/Credits & Adjustment		0.00
ಸರ್ಕಾರದ ಸಹಾಯಧನ/GOK Subsidy		0.00

ಫಾ ಮೊತ್ತ/Net Amt Due		₹ 436.00
ಪಾವತಾಗೆ ಕಡೇಯ ದಿನಾಂಕ/Due Date		23/11/2019

Additional Charges Details

5. **Rebate:** To encourage consumers to conserve energy/use energy efficiently, and to promote renewable-energy initiatives and usage, a rebate of 50 paisa/unit of electricity consumed (subject to a maximum of INR 50/-per installation/month) is allowed by DISCOMs if solar water-heaters are used.

6. **Penalty:** A surcharge of 2 paisa/unit is levied as penalty if the power factor (PF) is found to be less than 0.85 lag. PF is the fraction of total power supplied to the actual power consumed by a consumer. It is monitored on a monthly basis during the billing process.

7. *Interest:* A simple interest rate of 1% per month is levied for late payments, depending on the number of days by which it is delayed.

8. *Incentives:* An incentive of 0.25% is given if:

- Bills are paid through the Electronic Clearing System.
- Bills exceeding INR one lakh are paid 10 days before the due date.
- Consumers pay INR 1000 in advance towards the next month's bill.

9. *Other Charges:* Some DISCOMs levy 'Urban Cess' on behalf of municipal bodies, and collect 'Water Conservation Cess' from industries and large consumers.

10. *Arrears:* Any pending payments relating to the previous month are added in the current month's bill.

To Conclude:

A consumer bill is reflective of the total cost incurred by the generation, transmission, and distribution companies in supplying power. It is important that consumers understand the economics involved in the electricity-supply chain. Such understanding will, on one hand, build confidence in consumers about the charges

levied by DISCOMs, and on the other, help them appreciate the significance of making timely payments, so that power entities can recover their costs and are able to provide reliable power supply.

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We hope you have been enjoying reading this series. Do write to us on cpe@cstep.in or comment on the articles to share your thoughts.