GOVERNMENT OF INDIA
MINISTRY OF POWER

LOK SABHA
UNSTARRED QUESTION NO.486
TO BE ANSWERED ON 22.07.2021

STATUS OF SMART METER INSTALLATION

486. SHRI L.S. TEJASVI SURYA:
SHRI PRATHAP SIMHA:

Will the Minister of POWER be pleased to state:

(a) the status of smart meter installation during each of the last two years along with the cost of the said programme, state-wise;

(b) whether the installation of smart meters has positively impacted the financial performance of DISCOMs and if so, the details thereof;

(c) the benefits of smart prepaid metering;

(d) whether the Government has taken measures to create awareness about it among the general public and if so, the details thereof; and

(e) the details of privacy related provisions made by the Government to ensure protection of private data of citizens using the smart meters?

A N S W E R

THE MINISTER OF POWER AND NEW & RENEWABLE ENERGY

(SHRI R. K. SINGH)

(a) : As on date, 25.23 lakh Smart Meters (apprx) have been installed in various States under various schemes / initiatives and about 81 lakh smart meters are at different stages of implementation. The status of Smart meter installation during the years 2019-20 and 2020-21 is given at Annexure-I.

(b) : The Smart Meters enable improvement in billing and collection efficiencies thereby reducing the AT&C losses of DISCOMs facilitating better financial performance. The NSGM has undertaken assessment of the smart meters installed under their Smart Grid pilot projects and substantial reduction in AT&C loss (up to 15%) was noted. Similarly MPPKVVCL (Indore) has reported payback within 2½ years for the project. As per information received from the REC, the DISCOMs have reported an increase in earning in the range of Rs.200-500 per consumer meter per month wherever Smart Meters have been installed.

(c) The benefits of smart prepaid metering are as under:

i. The working capital requirement will reduce.

ii. DISCOMs will be able to purchase comparatively cheaper electricity from power exchange which due to financial constraint they are not able to purchase.

iii. **The burden of late payment surcharge will also become zero. The late payment surcharge is quite substantial in some of the States;**

iv. **Based on the analysis of consumer-wise data, DISCOMs will be able to improve the infrastructure and provide 24X7 reliable power to all its consumers;**

v. **DISCOMs will be able to pay in advance to GENCOS and Transmission companies, thereby taking a rebate of around 1.5% to 2% on the power purchase cost;**

vi. **Once generating companies and transmission companies get payment in time or in advance, their working capital requirement will also reduce and to this extent, the tariff will also come down.**

vii. **Cost saving as there would not be any requirement of serving a physical bill: - This will do away with irregular billing, particularly, in the rural area where the meters are not read regularly and bills are served either quarterly or half-yearly or even sometimes annually. This has led to cumulative dues which the rural consumers find it difficult to pay timely to the DISCOMs and the amount is compounded with late payment surcharge. With pre-payment meters, consumers can pay as per the convenience and in smaller denominations as per his payment capacity.**

(d) : Ministry of Power vide letter dated 26.02.2021 (Annexure-II) has requested all the States to prepare a road map for shifting over to smart pre-payment meters/ pre-payment meters.

The Electricity (Rights of Consumers) Rules, 2020 was notified on 31.12.2020 and as per this Rule, no connection shall be given without a meter and such meter shall be the Smart pre-payment meter or pre-payment meter. The relevant provision in the above mentioned Rule is as under:-

"No connection shall be given without a meter and such meter shall be the smart pre-payment meter or pre-payment meter. Any exception to the smart meter or pre-payment meter shall have to be duly approved by the Commission. The Commission, while doing so, shall record proper justification for allowing the deviation from installation of the smart pre-payment meter or pre-payment meter."

Respective Power Distribution Utilities have been advised to undertake necessary measures to create awareness about smart meters among the general public.

(e) : Privacy related and cyber security related provisions have been adequately incorporated in the Standard Bidding Document (SBD). As regards data privacy, the SBD provides that Advanced Metering Infrastructure Service Provider (AMISP) should ensure that the system is compliant with the applicable provisions of the "Reasonable security practices and procedures and sensitive personal data or information Rules, 2011 (IT Act)". AMISP shall also be committed to work with Utility for compliance to Personal Data Protection requirements. Provision for putting in place data privacy framework has also been made which inter alia includes, amongst several other provisions, those related to custodian of Smart meter data, submission of "Privacy by Design" document to the utility by AMISP, laying down of data sharing protocol and also for conduct of 3rd party data privacy audit by AMISP.

The implementing agencies are obligated to undertake strict cyber security protocols, User Acceptance Testing, STQC audits etc.

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ANNEXURE-I

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 486 TO BE ANSWERED IN THE LOK SABHA ON 22.07.2021

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Details of smart meters deployed in the year 2019-20 and 2020-21

Sl. No.	State	Utility	Project Area(s)	Project Status (Completed/ Ongoing)	Year-wise actuals	
					FY 2019-20	FY 2020-21
1	Andaman & Nicobar	Dept. of Power, A&N	Andaman	On Going	-	48,516
2	Assam	APDCL	Guwahati Division	Completed	537	-
		APDCL	Selected areas of Guwahati and Dibrugarh town	Completed	-	70,000
3	Bihar	NBPDCL & SBPDCL	Multiple towns under the juridiction of NB and SB	On Going	25,184	1,18,324
4	Chandigarh	CED	Sub Division 5 of Chandigarh	Ongoing	-	5,573
5	Delhi	TPDDL	North Delhi	Completed	1,90,000	-
		NDMC	NDMC Area	On Going	6,321	2,383
6	Gujarat	UGVCL	Naroda	Completed	-	-
7	Haryana	UHBVN	Panipat City Sub Division	Completed	-	-
		SGKC, Manesar	POWERGRID Complex, Manesar	Completed	-	-
		DHBVN & UHBVN	Gurugram	On Going	1,40,914	1,08,164
			Karnal			
			Panipat			
			Panchkula			
8	Himachal Pradesh	HPSEB	Kala Amb Industrial Area	Completed	-	-
9	Karnataka	CESCOM	V VMohalla, Mysore	Completed	-	-
10	Kerala	CPT	Willington Island	Completed	-	-
11	Madhya Pradesh	MP-West	Dewas, Ujjain, Ratlam, Mhow, Khargone	Ongoing	-	27,566
		MP-West	Indore city	Completed	49,694	8,836
12	Odisha	OPTCL	Across Odisha	Completed	-	-
13	Puducherry	PED	Division 1 of Puducherry	Completed	4,589	-
		PED	Puducherry	Completed	-	-
14	Punjab	PSPCL	different towns of Punjab	Ongoing	-	100
15	Rajasthan	JVVNL	6 Towns	Ongoing	-	13,301
		JVVNL	Kota	Completed	18,000	45,000
		JaVVNL	Jaipur City and Tonk Circle	Ongoing	-	24,807
		AVVNL	Satguru Colony, Ajmer	Completed	-	-
		AVVNL	Makrana&Pushkar	On Going	-	2,062
		JdVVNL	Jodhpur			
16	Tamil Nadu	TANGEDCO	T Nagar, Chennai	Ongoing	-	7,673
17	Telangana	TSSPDCL	Jeedimetla Industrial Area	Completed	-	-
18	Tripura	TSECL	Electrical Division No.1, Agartala	Completed	4,600	-
19	Uttar Pradesh	IIT Kanpur Smart City Pilot	Smart City Pilot in IITK Campus	Completed	-	-
		UPPCL	Varanasi Urban	On Going	8,82,978	1,40,808
			Varanasi Rural			
			Prayagraj			
			Gorakhpur			
			Lucknow			
			Barabanki			
			Bareily			
			Meerut			
			Saharanpur			
			Mathura, Vrindavan			
			Aligarh			
			Firozabad			
			Kanpur			
20	West Bengal	WBSEDCL	Siliguri Town	Completed	-	-
		CESC	Kolkata	Completed	8,000	-
	Total				13,30,817	6,23,113

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ANNEXURE REFERRED TO IN REPLY TO PART (d) OF UNSTARRED QUESTION NO. 486 TO BE ANSWERED IN THE LOK SABHA ON 22.07.2021

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Annexure - II

No. 23/05/2020-Part (1)
Government of India
Ministry of Power

Shram Shakti Bhawan, Rafi Marg,
New Delhi, 26th February, 2021

To,

1. Additional Chief Secretaries/Principal Secretaries/Secretaries, Energy/ Power Dept., All State Government/UTs
2. CMDs/MDs, All Discoms

Sub: **Implementation of smart pre-payment meter/pre-payment meters.**

Sir/Madam,

I am directed to refer to Ministry of Power's letters dated 16.08.2018, 02.08.2019 & 07.08.2020 (copies enclosed) and to say that all the States must have taken steps and prepared a road map for shifting over to smart pre-payment meters/pre-payment meters. Some of the States have already started implementation of pre-payment meters at the consumer levels. Based on the feedback from the States who have implemented the prepayment meters, the following benefits are envisaged:-

I. The working capital requirement will reduce;

II. DISCOMs will be able to purchase comparatively cheaper electricity from power exchange which due to financial constraint they are not able to purchase;

III. The burden of late payment surcharge which is as high as 18% at present will also become zero. The late payment surcharge is quite substantial in some of the states;

IV DISCOMs will be able to improve the infrastructure and provide 24x7 reliable power to all its consumers;

V DISCOMs will be able to pay in advance to GENCOS, Transmission companies, trading companies thereby taking a rebate of around 1.5% to 2% on the power purchase cost;

VI. Once generating companies and transmission companies get payment in time or in advance, their working capital requirement will also reduce and to this extent, the tariff will also come down.

VII. Cost saving as there would not be any requirement of serving a physical bill: - This will do away with irregular billing, particularly, in the rural area where the meters are not read periodically and bills are served either quarterly or half-yearly or even sometimes annually. This has led to cumulative dues which the rural consumers find it difficult to timely pay to the DISCOMs and the amount is compounded with late payment surcharge. With pre-payment meters, consumers can pay as per the convenience and in smaller denominations as per his payment capacity.

2. In the Union Budget, 2021-22, Hon'ble Finance Minister has announced the reforms-based-result-linked power distribution sector scheme with an outlay of Rs.3,05,984/- crore over 5 years. The scheme will provide assistance to DISCOMs for infrastructure creation including prepayment smart metering, feeder separation, upgradation of systems etc. tied to financial improvements. Approximately Rs.1,50,000/- crore is being earmarked for prepayment meters.

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3. The relevant provisions regarding metering under section 55(1) and 47(5) of the Electricity Act, 2003 and Central Electricity Authority (Installation and operation of meters) Amendment Regulation, 2019 are enclosed at Annexure.

4. The Electricity (Rights of Consumers) Rules, 2020 has been notified on 31.12.2020 and as per this Rule, no connection shall be given without a meter and such meter shall be the Smart pre-payment meter or pre-payment meter. The relevant provision in the above mentioned Rule is re-produced below:-

> *"No connection shall be given without a meter and such meter shall be the smart pre-payment meter or pre-payment meter. Any exception to the smart meter or pre-payment meter shall have to be duly approved by the Commission. The Commission, while doing so, shall record proper justification for allowing the deviation from installation of the smart pre-payment meter or pre-payment meter."*

Accordingly, the Discoms are required to implement the above provision. No specific approval is required from State Commission in this regard.

5 In view of the above, the States are once again requested to timely prepare the scheme of switching over to smart pre-payment meters/pre-payment meters in a time bound manner to avail funds from the Government of India under the above Scheme. **States are requested to submit their plans to this Ministry within 2 months from the date of issue of this letter.**

6. Further, the following stipulations may be indicated in the scheme to be proposed by the States:--

I. No connection shall be given without a meter and such meter shall be the smart prepayment meter or prepayment meter;
II. Any faulty meter shall be replaced only by smart prepayment meter or prepayment meter.
III. The existing post-paid meters should be replaced within 3 years.

7. This issues with the approval of Hon'ble MoS (IC) for Power and NRE.

Yours faithfully,

2/12/2021

(Ghanshyam Prasad)
Joint Secretary to the Govt. of India
Ph: 011 2371 0389

Encl: As Above

Copy for information to: PS to MOSP (IC), Sr. PPS to Secretary (Power), Sr. PPS to JS (R&R), PS to DS (R&R), Ministry of Power

Annexure

Relevant provisions of the Electricity Act, 2003 regarding metering of electricity

Section 55(1) is reproduced below:-

"(1) No licensee shall supply electricity, after the expiry of two years from the appointed date, except through installation of a correct meter in accordance with the ***regulations to be made*** *in this behalf by the* ***Authority****:*

Provided that the licensee may require the ***consumer to give him security*** *for the price of a meter and enter into an agreement for the hire thereof, unless the consumer elects to purchase a meter:*

Provided further that the State Commission may, by notification, extend the said period of two years for a class or classes of persons or for such area as may be specified in that notification.

(2) For proper account and audit in the generation, transmission and distribution or trading of electricity, the Authority may direct the installation of meters by a generating company or licensee at such stages of generation, transmission or distribution or trading of electricity and at such locations of generation, transmission or distribution or trading, as it may deem necessary."

Sub-Section 5 of Section 47 is re-produced below:

"A distribution licensee shall ***not be entitled to require security*** *in pursuance of clause (a) of Sub-Section (1) if the person requiring the supply is* ***prepared to take the supply through a pre-payment meter****."*

The reference of pre-payment meter has been made only in this paragraph in the entire Electricity Act, 2003 wherein the person is not required to pay security in case he opts for pre-payment meter.

Central Electricity Authority (Installation and operation of meters) Amendment Regulation, 2019

CEA has amended its meter Regulation and as per clause 4(1)(b), all new consumer meters shall be **smart meters with pre-payment feature**.

"Provided that the existing meters, other than Smart Meters, shall be replaced with Smart Meters with pre-payment feature within a time frame as specified by the Central Government"

However, for the purpose of replacement of existing meters, the time frame has to be specified by the Central Government.

***

F. No. 26/9/2015-IPDS
Government of India
Ministry of Power
*****

New Delhi, the 16th August, 2018

To

Pr. Secretary/Secretary (Energy) of all States/MDs of all DISCOMs

Subject – Road map for shifting over to smart/prepaid meters within the next three years-reg.

Sir,

Kindly refer to DO letter dated 28.05.2018 from Hon'ble Minister of State (IC) for Power and New and Renewable Energy requesting drawing up a road map for shifting over to smart/prepaid meters within the next three years. The National Tariff policy, 2016 already mandates installation of Smart meters for consumers drawing upto 200 units per month by December, 2019. It also indicates that progressively all the meters for all consumers should be converted to Smart meters progressively.

2. Based on the requirements projected by the States, the Government of India has sanctioned funds to the tune of Rs. 830 Crores for Smart metering under IPDS. Funding has also been done for Smart meters under the National smart Grid mission under Smart grid projects. Besides this, it is understood that several States have also started projects of Smart metering under business models with EESL as well as under multilateral funding.

3. Smart meters have an added benefit of possibility of operation in prepaid mode. Smart meter in the prepaid mode or simple prepaid meters will do away with the problems of meter reading and billing. Smart meters in prepaid mode will detect thefts as such meters would enable real time energy audit, thereby being a major enabler for reduction of AT&C losses. Prepaid mode also empowers the consumers, including those in rural areas, to use electricity as per need, and would enable energy conservation measures by making the cost of electricity salient to them in real time.

4. It is therefore advised with the approval of Hon'ble Minister of State (I/C) for Power that States may consider switching over to Smart meters in prepaid mode/simple prepaid meters over a period of next three years, say by March, 2021. A roadmap for the same may please be sent to this Ministry at the earliest.

Yours faithfully,

16/8/18

(G. Swan Za Lian)
Under Secretary to the Govt. of India
Tel: 23708051

F. No. 26/9/2015-IPDS(Vol-II)
Government of India
Ministry of Power
Shram Shakti Bhawan, Rafi Marg, New Delhi - 110001
*****

Dated: 2nd August, 2019

To

Pr. Secretary/Secretary (Energy) of all States/MDs of all DISCOMs

Subject– Road map for shifting over to smart/prepaid meters within the next three years-reg.

Sir,

Kindly refer to DO letter dated 28.05.2018 from Hon'ble Minister of State (IC) for Power and New and Renewable Energy (Copy enclosed) and letter dated 16.08.2018 (copy enclosed) requesting drawing up a road map for shifting over to smart prepaid meters within the next three years.

2. Benefits of smart metering in the prepaid mode are well known. Smart Meters in the prepaid mode do away with the problem of billing and collection, reduce the cost of collection, do away with the problems associated with the disconnection in case of non-payment, reduce carrying costs, enable accurate demand forecasting, and energy conservation. It increases the consumers' engagement as well as enhances the revenue and reduces transaction costs.

3. Progress would have been made by the States/DISCOMs in the interim on the roadmap, as well as installation of Smart meters in prepaid mode. The Ministry of Power has also sanctioned funds to the tune of Rs. 830 Crores for almost 41 lakh Smart meters under IPDS to the States that had requested assistance. Funding has also been done for Smart meters under the National smart Grid mission under Smart grid projects. All the smart meters procured under these schemes must be configured in the prepaid mode.

4. It is therefore requested that the States should submit their roadmaps for smart prepaid metering of all consumers as well as on the progress of Smart metering projects already undertaken/in process at the earliest.

5. It is further reiterated that States/Discoms must switchover to **smart meters in the prepaid mode** and implementation may be completed within three years.

6. This issues with the approval of MoSP(IC).

Yours faithfully,

2/8/19

(G. Swan Za Lian)
Under Secretary to the Govt. of India
Tele: 23708051

Copy to:
PS to Hon'ble MOSP(I/C)/Sr. PPS to S(P)/ PPS to SS(SNS)
PPS to JS(D)/PS to Dir(D)
CMD,PFC
Director,NSGM/NPMU

आर. के. सिंह
R. K. SINGH

विद्युत एवं नवीन और नवीकरणीय ऊर्जा
राज्य मंत्री (स्वतंत्र प्रभार)
भारत सरकार
Minister of State (Independent Charge)
for Power and New & Renewable Energy
Government of India

D.O. No. 239628 /MOS(IC)/Power/2018 28.05.2018

Dear Biplab Jee,

As the number of consumers have increased so have the difficulties in meter reading, service of bills and disconnection in case of non-payment of bills. The difficulties are especially acute in rural areas where the meter reading happens infrequently and the bills reach the consumers in two to three months and disconnections in case of non-payment are becoming more and more difficult. Under SAUBHAGYA, we are going to add an additional 3.70 Crores consumers. This will further increase the difficulties in meter reading, billing, collection and disconnection. We, therefore, need to take the assistance of technology. Accordingly, we propose to shift electricity supply from post-paid mode to the pre-paid mode. This will do away with the necessity for meter reading, service of bills or manual disconnection in case of non-payment. We propose to make the shift in a time frame of three years; beginning at once.

2 The prepaid mode is advantageous for poor people in that they can re-charge any number of times in a month and the re-charge can be even for Rs.50 or Rs.100/- at a time. This will enable the poor people to stay connected. They will find it easy to pay for five to six days at a time rather than 30 days at a time which is the requirement in post-paid. It will be advantageous to the Distribution Companies because, they will be freed of the requirement of meter reading / service of bills / collection and disconnection. We would prefer smart meters programmed in the prepaid mode. These may be installed in all urban areas. In rural areas, simple pre-paid meters will also suffice.

3 I shall be grateful, if you could direct the Energy Department and the Discoms of your State to draw up a road map for shifting over to smart / prepaid meters within the next three years and share it with us.

With regards,

Yours sincerely,

(R. K. Singh)

Shri Biplab Kumar Deb
Hon'ble Chief Minister of Tripura
Government of Tripura
Secretariat
AGARTALA : 799 001

Shram Shakti Bhawan, New Delhi-110 001 Phone : +91-11-23717474, 23710411
Fax : +91-11-23710065, E-mail : raj.ksingh@gov.in

376630/2020/IPDS

F. No. 26/9/2015-IPDS(Vol.II)(Pt.)(238595)
Government of India
Ministry of Power
*****

New Delhi, Dated: 07th August, 2020

To

Pr. Secretary/Secretary (Energy) of all States/MDs of all DISCOMs

Subject– Road map for shifting over to smart/prepaid meters within the next 3 years.

Sir/Madam,

Kindly refer to this Ministry's letter of even number dated 02.08.2019 and letter dated 16.08.2018 (copies enclosed) requesting for drawing up a road map for shifting over to smart prepaid meters or prepaid meters within the next 3 years. The replies including the road map is still awaited.

2. The major reasons for high AT&C losses include non-billing, wrong billing, thefts, non-collection of the billed energy etc. All these reasons have an underlying factor, i.e a human interface. Prepaid metering will allow Utilities to address these issues by replacing human interface by technology. It will also enable consumers to use electricity as per their own requirements and budgets. In areas where prepaid metering has been introduced the AT&C losses have gone down sharply. In Manipur, the losses have come down from 47 percent to 15 percent.

3. It is therefore in the interest of Utilities to shift to prepaid mode- whether prepaid smart metering or simple prepaid metering – at the earliest. Prepaid smart metering would have some added advantages such as remote tariff updates; real time energy audits and TOD tariff- but the choice of whether to go in for prepaid smart metering or simple prepaid metering vests with the States. The essential requirement is to shift to prepaid to do away with manual interface and reduce transaction costs. It is requested that the shift to the prepaid system may be taken up and progressed phase wise. It is requested that this Ministry may be kept apprised of the action taken.

4. This issues with the approval of Hon'ble Minister of State (I/c) for Power, & NRE and MoS for Skill Development & Entrepreneurship.

Yours faithfully,

7.8.2020
(Mritunjay Kumar Narayan)
Joint Secretary (Distribution)

Copy to:

1. PS to Hon'ble MoSP(I/C)
2. Sr. PPS to Secretary(Power), Ministry of Power
3. Sr. PPS to AS(D), Ministry of Power
4. PPS to JS(Distribution, Ministry of Power
5. PS to Dir(D)
6. CMD,PFC
7. Director, NSGM/NPMU