CHAPTER – 5

COMPLIANCE TO COMMISSION'S DIRECTIVES

1. The following new directive are issued by the Commission Directive on Energy Conservation:

The Commission hereby directs the ESCOMs to service all the new installations only after ensuring that the BEE ***** (Bureau of Energy Efficiency five star rating) rated Air Conditioners, Fans, Refrigerators, etc., are being installed in the applicant consumers' premises.

Similarly, all new streetlight/high mast installations including extensions made to the existing streetlight circuits shall be serviced only with LED lamps/energy efficient lamps like induction lamps.

Further, the Commission directs the ESCOMs to take up programmes to educate all the existing domestic, commercial and industrial consumers, through media and distribution of pamphlets along with monthly bills, regarding the benefits of using five star rated equipment certified by the Bureau of Energy Efficiency in reduction of their monthly electricity bills and conservation of precious energy.

Compliance by BESCOM:

57, 86,236 Nos. of LED bulbs were sold through M/s EESL from 23.12.2015 to 31.10.2016. There is approximately 140 MUs of energy savings by replacing 9W LED bulbs.

2. Review of Compliance of Existing Directives:

I. Directive on implementation of Standards of Performance (SoP):

The Commission reiterates its directive to BESCOM to continue to strictly implement the specified Standards of Performance while rendering services related to supply of

power as per the KERC (Licensee's Standards of Performance) Regulations, 2004. Compliance of the same shall be submitted to the Commission on a quarterly basis regularly.

Compliance by the BESCOM:

BESCOM vide letter No: BC-26/F-2411/2009-10/517, dated 14.08.2015, has submitted the compliance to the Commission, in respect of the directive on the Standards of Performance. As per the directions of the Commission, the details of the specified Standards of Performance in accordance with the KERC (Licensee's Standards of Performance) Regulations, 2004 and the KERC (Consumer Complaints Handling Procedure) Regulations, 2004, have been displayed in both Kannada and English on the notice boards in all the O&M section and subdivision offices in the following format given by the Commission.

Table 5.1

ESCOM	O & M SUBDIVISIONS				O & M SECTIONS			
	Total Nos	No. of S/d s where SoP parameters displayed	Balance	Likely date of completio n	Total Nos	No. of S/d s where SoP parameters displayed	Balance	Likely date of Complet ion
BESCOM	120	120	0	NA	460	460	0	NA

II. Directive on use of safety gear by linemen:

The Commission reiterates its directive that BESCOM shall ensure that, all the linemen in its jurisdiction are provided with proper and adequate safety gear and the linemen use such safety gear provided while working on the network. The compliance in this regard shall be submitted once in a quarter to the Commission regularly.

Compliance by the BESCOM:

1. Safety goggles, safety shoes and safety belt are procured and issued to field staff.
2. Tenders are called for Safety Materials like safety gloves, safety helmets and rainwear.

Wherein the PO is placed for rubber gloves and tender for safety helmets and rainwear are opened and are under technical evaluation.

3. Instructions are issued from corporate office to follow the safety protocol at work field.

4. Every Monday the section officer will conduct a safety meeting before starting the work and will preach Safety Mantra to all field staff.

5. Instructions are issued from corporate office to conduct the surprise checks of works to check whether the safety materials are used, safety zone is created etc., as per check list provided and deduct one day Casual Leave if any of the staff is not using safety equipment's for three times and issue a notice for the fourth time. Further penalty is being imposed to the officer who does not conduct the surprise checks.

III. Directive on providing Timer Switches to Street lights by the ESCOMs:

The Commission reiterates that the streetlight installations should be provided with timer switches for enabling them to be automatically switched on only during the scheduled time. This measure would not only save significant quantum of energy that is currently wasted because of inefficient and unreliable manual operation of the switches which allow them to be lit unnecessarily even during day time, but also ensure that streetlights are lit during the scheduled dark hours when the general public require them. As directed earlier, BESCOM should install the timer switches at their cost and later recover it from the local bodies. Persuading the local bodies to fix timer switches at their own cost availing funds / grants received from Government and other agencies for such programmes / works should also be explored seriously.

The Commission further directs BESCOM that henceforth, the new streetlight installations and any extension/modification to be carried out to the existing streetlight installations shall be serviced only with timer switches.

Compliance by the BESCOM:

The progress of Timer Switches to Streetlight Installations in BESCOM as on 30.09.2016 is as furnished below.

Table 5.2

Company	Total No. of existing Street light installations as on Sep-16	No. of installations provided with timer switches as on Sep-16	No. of timer switches in working condition as on Sep-16	No. of timer switches not in working condition as on Sep-16	Balance No of timer switches to be fixed as on Sep-16
	A	B	C	D	E=A-C
BESCOM	52817	15313	12636	3308	40181

BESCOM has issued circular vide dated 15.09.2016 to the field staff to install timer switches to new streetlight installations and any extension/modification carried out to the existing streetlight installations shall be serviced only with timer switches.

IV. Directive on load shedding:

The Commission observes that BESCOM is not submitting its projections of availability and demand for power and any unavoidable load shedding for every succeeding month in the last week of the preceding month to the Commission regularly. BESCOM shall henceforth submit the same regularly to the Commission. The Commission also notes that BESCOM has not expedited the 'application software' which it has been developing through Consultants for integration with the SCADA data to enable providing information to the consumers through SMS regarding the time and duration of probable interruptions. This has to be expedited as the consumers need to be informed through SMS regarding both scheduled and un-scheduled load shedding due to reasons such as system constraints, breakdowns of lines/equipment, maintenance etc., This would address significantly the consumers' dissatisfaction on this issue.

Further, it is also necessary to avoid load shedding involving the same sub-stations/feeders; the same should be done on rotation basis to avoid inconvenience to consumers/public.

The Commission reiterates that BESCOM shall comply with the directive on load shedding and submit monthly compliance reports to the Commission regularly.

Compliance by BESCOM:

The prevailing power supply arrangements in the BESCOM, is submitted as follows:

a) Load Restriction:

Presently there is no load restriction, in case of any major outages in the generating stations the load restriction is planned as below.

- **Peroirity-1:** NJY feeders, 2 to 4hours in a day on rotational basis
- **Peroirityt-2:** Town feeders (other than Bangalore City), 2 to 4hours in a day on rotational basis.
- **Peroirity-3:** Domestic/residential feeders in Bangalore City, 2 to 4hours on rotational basis.
- **Periority-4:** Commercial feeders in Bangalore City, 2hours in rotational Basis.
- **Periority-5:** Staggering of holidays for industrial feeders.

b) Hours of power supply for agriculture feeders:-

Rural mixed feeders:

3 phase, 6 to 7 hours; single phase: 7 to 8 hours

Exclusive agriculture feeders:

3 phase: 6 to 7 hours; single phase: 7 to 8 hours.

Consequent to less water storage in Linganamakki, Supa & Mani major Hydel reservoirs and to meet the peak demand of ensuing summer days, presently Hydel generation is being restricted to 10.5 MU per day from these power plants.

However, to meet the deficit of power, the following measures have been taken by the BESCOM:

- Purchase of power through an Energy Exchange (IEX), 200-300MW between 00.00hrs and 11.00hrs, 500-750MW between 11.00hrs and 18.00hrs based

on the day ahead availability declared by the SLDC and the anticipated demand based on previous days recorded demanded with seasonal conditions.

- Purchase of power to an extent of 215 MW of BESCOM share from Damodar Valley Corporation through PPA.
- Hydro generation will be increased during ensuing summer and school examinations.

At present, BESCOM has developed a web based SDRA application which utilizes the SCADA data and generates MIS reports on power supply position, performance of feeders and also hours of power supply in geographical area wise, pubic constituency wise and also BESCOM O&M unit wise. Using this software messages through SMS are being sent to public representatives. As regards sending of SMS about load shedding to the public / consumers, the same is in process. Also, integration of this application with computers of station log book application developed by the KPTCL, to fill up the gaps in the data acquired through SCADA, is in progress.

BESCOM has also developed web based Feeder Shutdown Protocol (FSP) application which support the process of 11 KV feeder selection on indiscriminating basis for load shedding in the event of unscheduled outage which can be a result of loss of generating unit or loss of major transmission unit.

As of now, BESCOM is furnishing day ahead requirement to the SLDC for the requirement of power and based on the requirement and availability, the SLDC is allocating power. In future, BESCOM will furnish the projected requirement on month ahead basis to the Commission.

As per the Hon'ble commission directives, the details of both scheduled and un-scheduled load shedding due to system constraints is uploaded day ahead in BESCOM website for public information.

URJAMITHRA Programme:

- URJAMITHRA Programme is an initiative of Ministry of Power, Government of India which provides outage management and notification platform for

dissipating the outage information to power distribution consumer across India through SMS/email/push notification.

- Objective of this programme is to share the information with consumers about outages in rural and urban areas through SMS/email/push notification.
- In this regard consumer data collection is under progress.

V. Directive on Establishing a 24x7 Fully Equipped Centralized Consumer Service Center for Redressal of Consumer Complaints:

The Commission reiterates its directive to BESCOM to publish the complaint handling procedures / contact number of the Centralized Consumer Service Centre regularly in the local media and other modes periodically for the information of public and ensure that all the complaints of consumers are registered only through the centralized consumer service center for proper monitoring of disposal of complaints registered.

The compliance in the matter shall be submitted to the Commission once in a quarter regularly.

Compliance by BESCOM:

To facilitate consumers, BESCOM has established a well-integrated 24 X 7 Customer Help Line through the latest technology & software developments along with in-built automatic call transfer system. Consumers can call on the Customer Help Line Number 1912 which has 45 concurrent lines with Multi Channel Complaint Registration Facility (Phone, SMS, Online, E-mail & Facebook).

As per the directions of KERC, BESCOM has published the contact number (1912) of the Centralized Consumer Service Centre initially through all Newspapers, Radio and Television. In addition to this, 24X7 Helpline contact number 1912 is being publicized regularly through various pamphlets, hoardings, advertisements, Facebook, Twitter, BESCOM Service station vehicles, display on Linemen's uniforms and notifications.

All the consumer complaints are being registered in the Web enabled PGRS (Public Grievance Redressal System) application. Whenever any consumer registers complaint,

they will be provided with the Docket Number, using which they can track their complaint status through BESCOM Website. For the speedy redressal of complaints, BESCOM has established Circle control rooms in all the 8 Circles. In Circle Control Rooms, the executives makes follow up of complaints pertaining to their Circle till resolution.

VI. Directive on Energy Audit:

The Commission had directed BESCOM to prepare a metering plan for energy audit to measure the energy received in each of the Interface Points and to account for the energy sales. The Commission had also directed BESCOM to conduct energy audit and chalk out an action plan to reduce distribution losses to a maximum of 15 percent wherever it is above this level in towns/ cities having a population of over 50,000.

The Commission had earlier directed all the ESCOMs to complete installation of meters at the DTCs by 31st December, 2010. In this regard the ESCOMs were required to furnish to the Commission the following information on a monthly basis:

a) Number of DTCs existing in the Company.

b) Number of DTCs already metered.

c) Number of DTCs yet to be metered.

d) Time bound monthly programme for completion of the work.

The Commission further notes that the DTC metering is completed in all the 24 towns where RAPDRP scheme is taken up. But, despite completing the metering of the DTCs, BESCOM has not taken up comprehensive DTC wise energy audit, reportedly due to incomplete tagging of consumer installations with the concerned feeders/DTCs. There has been an inordinate delay in tagging of consumer details with the feeders/DTCs by BESCOM. In fact BESCOM during the ESCOMs' Review meetings held in the Commission had committed to complete this exercise before August 2014, but the progress achieved is not satisfactory.

BESCOM is directed to take up energy audit of DTCs for which meters have already been installed and to initiate corrective measures for reducing distribution losses wherever they are above the targeted level. The compliance in respect of DTC wise energy

audit conducted with analysis and the remedial action initiated to reduce loss levels shall be submitted every month regularly to the Commission.

Further, BESCOM is directed to submit to the Commission the consolidated energy audit report for the FY16, as per the formats prescribed by the Commission, vide its letter No: **KERC/D/137/14/91 dated 20.04.2015, before 15th May 2016.**

Compliance by the BESCOM:

DTC metering status as on Oct-2016 is as below:

Number of DTCs existing : 248253

Number of DTC already metered : 110965

% Metered : 44.70

Number of DTCs yet to be metered : 137288

As DTC metering for IP set feeding and Single Water supply installations are exempted, balance metering to be carried out approximately to 25000 to 30000 no. of DTCs, for which tender is proposed.

For carrying out energy audit of metered DTCs, BESCOM has taken all measures to resolve the issues and the same is under progress.

Table 5.3

As on OCT-2016	No. of DTCs existing	No. of DTCs metered	Balance to be metered	No. of DTCs with modems	Balance DTCs to be fixed with modems/ Legacy meters
RAPDRP	54384	53517	867	52979	538
NON-RAPDRP	193869	57448	136421	45000	12448
Total	**248253**	**110965**	**137288**	**97979**	**12986**

In RAPDRP area DTC wise Energy audit reports requires fine tuning in incremental data, GIS updation and integration with RAPDRP system. Once its integrated DTC wise system generated Energy audit reports will be submitted regularly to the Commission.

In Non-RAPDRP area due to software integration issues between meter manufacturer (M/s.AFTL and M/s.Genus) and billing agency (M/s. N-soft) DTC wise energy audit reports are not generated. About 12287 nos. of DTCs energy audit reports are generated

in Tumkur circle. Due to improper tagging most of the DTCs are having abnormal losses. Action is being taken to set right the same. For remaining nos. repeated instructions and letters have been addressed to Meter manufacturer to resolve the issue at the earliest.

Further, to furnish energy audit report in the prescribed format as per Hon'ble KERC letter dated: 20.04.2015, energy audit reports at DTC level are not generated due to issues mentioned earlier. Town/Division/Feeder wise energy audit reports are furnished regularly to Commission in the prescribed PQM format for quarterly review meetings. PQM format 3a (Division wise), 3b (Feeder wise), 3c (Town wise) from the month of April-16 to June-16 are enclosed for further needful.

VII. Directive on Implementation of HVDS:

As regards the implementation of HVDS in Kanakapura sub-division, the Commission had directed BESCOM to get the cost estimates prepared keeping in view the objective of bringing down the overall costs of the project and thereafter seek separate approval from the Commission before taking up the proposed work. On scrutiny of the DPR of Kanakapura Urban & Rural, Harohalli and Sathanur subdivisions of Kanakapura Division and Kunigal rural subdivision of Tumkur division, submitted to the Commission, by BESCOM, the Commission has noted many observations including the discrepancies in provision of materials, released materials, credit values of released materials, computation of energy loss reduction and techno-economical non-viability issues. These observations were communicated to BESCOM for necessary action.

The Commission directs BESCOM to follow the revised guidelines issued by the Commission and implement HVDS programme in Tumkur rural sub-division1 & 2 as reported by it and submit the progress/compliance thereon once in a quarter to the Commission regularly . The Commission further directs BESCOM to furnish the feeder-wise post analysis of all the HVDS works executed and completed.

Compliance by the BESCOM:

The HVDS work of remaining 28 feeders is completed and feeders were commissioned during December -2015.

The evaluation of pre and post analysis of all 68 commissioned feeders is entrusted to TPIA (Third Party Inspection Agency) M/s N Arc Consulting, New Delhi vide DWA No. DGM/HVDS/TPIA/16-17/03/ 04/05 Dated: 10.11.2016 of Tumkur, Chikkaballapura, Nelamangala divisions respectively and two months' time given to agency for submission of analysis report. On receipt of the reports, same will be submitted to Hon'ble commission.

BESCOM has taken action to identify the feeders having highest distribution losses for implementing HVDS scheme at a reasonable cost duly following the guidelines issued by the Hon'ble commission.

BESCOM has taken all the measures and the overall DPR cost of implementation of HVDS scheme in Kanakapura taluk is reduced from Rs. 174 crores to Rs. 136.88 corers and Huliyurdurga section, Tumkur taluk is reduced from Rs. 32.25 crores to Rs. 25.90 crores.

The reply on the discrepancies noted by the commission will be submitted to the commission shortly.

The evaluation of pre and post analysis of the above work is entrusted to TPIA (Third Party Inspection Agency) M/s CPRI, Bangalore vide DWA No. BESCOM/CGM (Proj)/DGM/HVDS/TPIA/16-17/01/02 dated: 26.07.2016 of Kanakapura and Tumkur divisions respectively. It was informed to conduct the evaluation of the feeders as and when the work is completed & commissioned and to submit the report.

VIII. Directive on Niranthara Jyothi – Feeder Separation:

The ESCOMs were directed to furnish to the Commission the programme of implementing 11 KV taluk wise feeders' segregation with the following details:

a) Number of 11 KV feeders considered for segregation.

b) Month wise time schedule for completion of envisaged work.

c) Improvement achieved in supply after segregation of feeders.

The Commission notes that BESCOM is yet to commission 10 feeders in phase-2, whereas, it has commissioned all the 281 feeders taken up under phase-1 long back. The progress achieved in implementing the works under NJY phase-2 is not satisfactory, as it has taken one long year to commission only 10 feeders out of 20 remaining feeders as at the end of last year. The delay in implementation of NJY works by BESCOM has resulted in non-realization of envisaged benefits set out in the DPR when the project was initiated.

BESCOM is hereby directed to commission the balance feeders' expeditiously and to carry out the performance analysis of those feeders to ensure that the objectives set out as per DPR are accomplished.

Further, the Commission, has noted that BESCOM has carried out the performance analysis of feeders commissioned under NJY indicating the benefits accrued to the system in terms of reduction in failures of distribution transformers, improvement in tail-end voltage and improvement in supply/reduction in interruptions and increase in metered consumption. The analysis reveals that there is overall improvement in supply condition after implementation of NJY besides benefiting the consumers in rural area resulting in a positive socio- economic impact. The analysis also reveals that the consumers are happy post implementation of NJY as the number of hours of quality power availability has increased.

BESCOM is directed to expedite execution of NJY works under phase-2 and report compliance thereon to the Commission. Further, BESCOM shall ensure that NJY feeders are not tapped illegally for running IP sets which would defeat the very purpose of feeder separation scheme undertaken at huge cost.

Further, it is noted that BESCOM has already segregated almost all the feeders taken up both under phase1&2 works and consequently agricultural feeders are exclusive from rural loads and the energy consumed by the IP sets could be more accurately measured at the 11 KV feeder level at the sub-stations after duly allowing for distribution losses in 11 KV lines, distribution transformers and LT lines. BESCOM is directed to report every month, specific consumption and the total IP sets consumption only on the basis of data from agricultural feeder energy meters as per the formats prescribed by the Commission, before 15th May 2016.

The Commission reiterates its directive to BESCOM to continue to furnish feeder-wise IP set consumption based on feeder energy meter data to the Commission every month in respect of agriculture feeders segregated under NJY.

Compliance by BESCOM:

Out of the 271 feeders taken up for segregation under phase-1, all the feeders have been commissioned. Out of 281 feeders proposed in phase-2, 280 feeders have been commissioned. The project is scheduled for a total completion by December 2016. Out of the 380 feeders taken up for segregation under phase-3, 201 feeders have been completed and 117 feeders have been commissioned, the project is scheduled for a total completion by March, 2017. For Niranthara Jyothi feeders, 20-22 hours of three phase power supply is being arranged as envisaged under the DPR. The limiting number of hours of power supply to IP sets i.e., for agriculture feeders is 7 hours at three phases as per the decision of GoK.

M/s MECON Limited, a Government of India undertaking has been entrusted with pre and post analysis of feeders commissioned under Niranthara Jyothi phase-1 and concurrent analysis of feeders commissioned under phase-2 as follows:

1. Bangalore Rural : 24 feeders
2. Kolar : 08 feeders
3. Tumkur : 40 feeders
4. Davangere : 28 feeders

M/s MECON has submitted a report in respect of feeders identified in Davangere and Kolar Circles and which is validated by the concerned superintending engineers (Ele.,). Further, M/s PRDCL has also evaluated the pre and post analysis of feeders commissioned under Niranthara Jyothi phase-1 in Harpanahalli Taluk, in Davangere circle.

The agencies have submitted a detailed report separately for each of the feeders on which the analysis was carried out. The reports show that the Niranthara Jyothi Yojane

has benefited the rural population to a considerable extent through better quality of power supply and in providing 24 x7 power to the rural nonagricultural loads. The consumers are happy and satisfied with the better power supply conditions prevailing after the implementation of Niranthara Jyothi Yojane.

The benefits derived from Niranthara Jyothi Yojane scheme is noted below:

24x7 power supply to villages:

The main purpose envisaged in the implementation of Niranthara Jyothi Yojane is to arrange 24x7 uninterrupted power supply to the villages. As seen from the vital statistics of the sub-stations feeding the area, these villages which were having intermittent power supply earlier, are now having continuous 3 phase power supply and BESCOM is not resorting to load shedding, which was the case earlier. But, in few cases there have been continued interruptions due to system constraints, line clear issues and unforeseen faults. But, now after implementation of NJY, BESCOM is able to supply continuous uninterrupted quality power supply for longer duration during morning and evening peak hours.

Energy input from sub-stations:

There is increase in consumption of both the metered category installations and IP sets. However, the increase in IP consumption is attributed to the increase in number of IP sets due to regularization of unauthorized IP sets.

Increase in metered consumption:

The energy consumption of metered category installations has shown an increase of about 25 to 30 per cent after the implementation of NJY. In some of the cases where the exact feeder-wise metered consumption was not furnished due to change in billing software and non-availability of previous data, a sample of energy consumption of a few installations selected at random in various villages fed from the feeder over a period of 6 months before and after the implementation of NJY, as extracted from the sub-divisional DCB was analyzed. This also indicates the increasing trend of consumption

of metered installations. However, it can be safely assessed that there is an increase of 25% to 30% in metered energy consumption.

Unmetered consumption:

As compared with earlier period, there is a considerable increase in the IP consumption post implementation of NJY. The total unmetered consumption of IP sets in respect of the combined IP feeders has shown an increasing trend as compared with the IP set consumption before implementation of NJY. This is due to increase in number of IP sets serviced under regularization and also due to mix up of feeder loads during rearrangement of feeders envisaged in the project. However, IP consumption, which was hitherto being assessed based on assumptions, can now be measured more accurately, as there is a total exclusive feeder with metering facilities at station end, for calculating feeder-wise total daily and monthly IP consumption.

Rate of failure of transformers:

After the implementation of NJY, the failure rate of transformers in both the IP feeders as well as NJY feeders has reduced significantly as compared to the failure rate of transformers before implementation of NJY.

Better consumer satisfaction:

As per the opinion obtained from the consumers, in different villages fed by NJY feeders, it is evident that the consumers are happier with the better power supply conditions after introduction of NJY.

Results of the socio economic survey carried out for the beneficiaries of the NJY Project:

A survey was conducted on the effectiveness of the project by obtaining opinion from a cross section of people in different villages fed by NJY feeders the results are as follows. About 85% to 95% of the respondents have agreed on the following improvements in

availability of power 24X7, after implementation of NJY.

- Improvement in quality of power supply viz., less voltage fluctuations, reduction in interruptions/ better tail end voltages.
- Improved standards of living.
- Increase in level of literacy/education.
- Improvement in basic amenities such as drinking water supply, improved services in Primary Health Centers.
- Development of small scale industries leading to local employment and increased job opportunities.

Further, BESCOM has ensured that the illegal tapping of NJY feeders is curbed and wide publicity has been given through media, highlighting the punishments laid down under the law for power theft or illegal hooking. Paper notifications issued in this regard are enclosed for the commission's perusal.

Following are the observations pertaining to 36 NJY feeders covering Davangere and Kolar Circles:

Table 5.4

Sl No	Parameter	Before bifurcation	After bifurcation NJY non-Agri feeder	After bifurcation Agri feeder	Conclusion
1	Total No. of installations	Domestic lighting and water supply – 48,720 numbers & IP Sets – 9,340 numbers 12,60,500 KW	Domestic lighting and water supply – 52,445 numbers	IP Sets – 11,150 numbers	Increase in installations after bifurcation is about 9.6%
2	Total connected load	(Domestic and IP load cannot be segregated since the connected load is based on installed transformer capacity)	Domestic Lighting and Water Supply 2,36,000 kW	IP Sets 11,85,000 kW	Increase in connected load after bifurcation is about 12.2%

3	Total energy sent out from substation (kWh)	Domestic lighting and water supply - 38,28,650 kWh & IP Sets - 1,39,45,000 kWh	Domestic lighting and water supply 56,57,600 kWh	IP Sets 92,65,500 kWh	Decrease in energy sent out from the substations after bifurcation is about 16%
4	Total metered energy consumption (kWh)	Domestic lighting and water supply - 31,57,600 kWh & IP Sets -Realized about 88,30,000 kWh	50,06,300 kWh	It is assumed that the entire energy consumed by the bifurcated Agri feeders is assessed and will be realized from the Govt. at a later date	Increase in metered energy consumption after bifurcation is about 19%
5	Average technical loss	17.50%	11.50%	Not possible to evaluate AT&C for a pure Agricultural feeder since the realization is an assumed value of 100%	Reduction in technical loss is about 5.5%
6	Average Commercial loss	6%	5.50%		Reduction in commercial loss is about 0.5%
7	Aggregate Technical and commercial loss	23.50%	17%		Reduction in AT&C loss is about 6.5%
8	Transformer Failure rate	14%	16%	17.50%	Even though the number of failure of transformers has reduced, the percentage failure rate for the bifurcated non-Agri NJY feeder has increased marginally by about 2%. This may be attributable to high service period of about 20 to 22 hours a day as compared to earlier 8 to 10 hours a day
9	Voltage Regulation (HT)	7%	4.50%	9.50%	Even with this improvement for the non-Agricultural NJY feeder, the regulation is above the acceptable range of + 2.5% (upto transformer) as per REC guidelines. This may be attributable to higher line lengths
10	Peak Load	140A to 200A	about 45 A	120 to 135 A	This has led to improved quality of power supply viz., good tail end voltage at the consumer end. This is evident from the survey carried out of the consumers.

Following are the observations pertaining to Socio-Economic Survey carried out for the Beneficiaries of NJY scheme (36 NJY feeders) of Davangere and Kolar Circles of BESCOM. A survey was carried out covering 5 villages per feeder and 6 respondents per village:

Circle : Davangere

No of sub-divisions : 8

No of feeders for evaluation : 28

Circle : Kolar

No of sub-divisions : 2

No of feeders for evaluation : 8

Table 5.5

Sl No	Parameter	Response
1	Voltage Measured at consumer premises	Within acceptable value
2	Is the respondent aware of NJY scheme (Yes/ No)	No (80%) However the surveyor has appraised the respondent about the scheme
3	Availability of power 24x7 after NJY (Yes/ No)	Yes (93%) > 20 Hrs a Day
4	Improvement in Quality of power viz. less voltage fluctuations after NJY (Yes/ No)	Yes (86%)
5	Reduction in power Interruptions after NJY (Yes / No)	Yes (73%)
6	Whether satisfied with quality and duration of power supply for IP sets (Yes/ No) if applicable	No (73%)
7	Respondents perception(Yes/No) on whether implementation of NJY has led to	
	a) Improvement in standard of living	Yes (87%)
	b) Increase in level of literacy/ education levels	Yes (97%)
	c) Improvement in basic amenities such as drinking water supply, improved services in Primary Health Centers	Yes (83%)
	d) Development of Small Scale Industries leading to local employment and increased job opportunities	Yes (77%)
	e) Reduction in migrant population to urban areas	No (87%)
8	Overall satisfaction level about the project (Good/ Average/Needs further improvement)	Average

IX. Directive on Demand Side Management in Agriculture:

In view of the urgent need for conserving energy for the benefit of the consumers in the State, the Commission had directed BESCOM to take up replacement of inefficient Irrigation Pumps with energy efficient Pumps approved by the Bureau of Energy Efficiency, at least in one sub- division in its jurisdiction and report compliance thereon.

The Commission during its review meetings with ESCOMs held in the Commission has been directing them to initiate DSM measures in any one sub-division/taluk in order to assess the results of such measures before scaling up in whole of its jurisdiction. BESCOM is directed to expedite the implementation of DSM measures in 11kV Harobele feeder in Kanakapura taluk and report compliance thereon to the Commission within three months from the date of this order.

Compliance by the BESCOM:

Compliance on Ag. DSM:

Letter has been addressed to Energy Department, GoK vide letter dated 16.05.2016 regarding modifications in methodology for implementation of Ag. DSM programme. BESCOM is awaiting directions from GoK.

Compliance on Surya Raitha, pilot project:-

69 nos. of solar IP sets have been commissioned as on 31.05.2016. Based on the request of M/s. Sun Edison, the project work is assigned to M/s. Ishaan Solar duly obtaining BESCOM Board approval. The firm has committed to commission all the 310 nos. IP sets by the end of January-2017.

X. Directive on Lifeline Supply to Un-Electrified households:

BESCOM shall come out with an action plan to implement the directive of the Commission for providing electricity to the un- electrified households in its jurisdiction and submit compliance/progress achieved monthly to the Commission.

Further, the Commission concerned with the slow pace of progress of this programme, in its previous Tariff Order had directed BESCOM to cover electrification of 5 percent of the total identified un-electrified households every month beginning from April, 2015 so as to complete this programme in about twenty months. There is not much progress in these aspects. BESCOM is directed to expedite action to provide electricity to the un-electrified households covering all the remaining households within the targeted time and report compliance to the Commission regarding the monthly progress achieved from May, 2016 onwards. In the event of non-compliance, the Commission may be constrained to initiate penalty proceedings under section 142 of the Electricity Act, 2003.

Compliance by the BESCOM:

For electrification of 60531 no's of BPL households are identified under RGGVY XII plan scheme in 05 districts of BESCOM namely Davangere, Bangalore Rural, Ramanagara, Kolar and Chikkaballapura. During execution of the scheme the

Physical progress of electrification of BPL households under RGGVY XII plan is as follows:

Table 5.6

Sl. No.	Name of District	No. of BPL HH identified for electrification as per DWA	No. of BPL HH identified for electrification as per survey	Last 3 Month Progress				Cumulative progress	Progress in % WRT Survey
				As on July-16	Aug-16	Sep-16	Oct-16		
1	**Bangalore Rural**	**6167**	8410	7790	256	0	2	**8048**	**95.70%**
2	**Davangere**	**21294**	25652	17202	1801	836	1014	**20853**	**81.29%**
3	**Kolar**	**13041**	21312	13004	1202	1473	1689	**17368**	**81.49%**
4	**Chikkaballapura**	**15460**	24696	18819	2060	1443	1085	**23407**	**94.78%**
5	**Ramanagara**	**4569**	19601	6980	236	0	0	**7216**	**36.81%**
Total		**60531**	**99671**	**63795**	**5555**	**3752**	**3790**	**76892**	**77.15%**

As per REC guidelines, the work shall be completed within 24 months from the date of issue of work award to the Agency. BESCOM is committed to complete the project within stipulated time fixed by the REC in all aspects.

Further, for electrification of BPL households as per the guidelines of REC 119659 nos. of BPL households are identified in 08 districts of BESCOM under Dena Dayal Upadhyaya Grama Jyothi Yojana (DDUGJY).

The district wise BPL households identified for electrification under the scheme is as follows,

Table 5.7

Sl. No.	Name of District	No. of BPL HH identified for electrification under DDUGJY
1	Bangalore Rural	4315
2	Davangere	5885
3	Kolar	4563
4	Chikkaballapura	4173
5	Ramanagara	7689
6	Anekal taluk of Bangalore Urban	5523
7	Chitradurga	36817
8	Tumkur	50694
Total		**119659**

For implementation of the same, the tenders are floated and works has to be awarded to the qualified bidder after completion of the evaluation process. The time schedule fixed for implementation of DDUGJY scheme is 24 months from the date of issue of Detailed Work Award (DWA).

XI. Directive on sub-division as Strategic Business Units (SBU):

The Commission notes that, the ESCOMs have expressed their difficulty in introduction of SBU concept in their O & M divisions / sub divisions due to implementation issues in the field. The Commission recognizes the problems associated with implementation of SBU concept. As an alternative, the Commission had instituted a study to make field formations of the ESCOMs financially accountable without any modification in their existing administrative set up. The Commission has forwarded a report prepared by the consultants M/s PWC regarding implementation on Financial Management Framework for distribution utilities to take further action to implement a model suggested by the consultant, in their jurisdiction to bring in accountability on the performance of the divisions / sub-divisions in relation to the quantum of energy received, sold and its cost

so that they conduct their business on commercial principles.

BESCOM is therefore, directed to implement this financial management framework model and report compliance thereon within three months from the date of issue of this Order.

Compliance by the BESCOM:

Commission has principally agreed to dispense with implementation of SBU concept instead has suggested to implement Financial Management Framework in line with report prepared by M/S PWC done on pilot basis on selected CESC Divisions. Based on the Commission's direction Division wise draft financial evaluation was done based on the actuals of FY-16. Draft results are tabulated below:

Table 5.8

Divisions	Net Consumption	PP cost	other costs	Total cost	Demand Total	Collection Total	ARR-Demand	ARR-collection	Cost per unit	Profit/ loss Demand basis	Profit/ loss Collection basis
CHANDAPURA Total	1309.85	4.37	0.37	4.74	937.41	876.51	7.16	6.69	4.74	317	256
CHIKBALLAPURA Total	538.34	4.37	1.07	5.44	221.88	212.88	4.12	3.95	5.44	-71	-80
CHINTAMANI Total	465.43	4.37	0.63	5.00	160.32	152.19	3.44	3.27	5.00	-72	-81
CHITRADURGA Total	510.21	4.37	1.10	5.47	198.47	192.20	3.89	3.77	5.47	-81	-87
DAVANAGERE Total	789.16	4.37	0.85	5.22	399.15	314.21	5.06	3.98	5.22	-13	-98
HARIHARA Total	512.11	4.37	0.68	5.05	184.39	176.08	3.60	3.44	5.05	-74	-83
HEBBAL Total	985.49	4.37	0.64	5.01	649.97	634.19	6.60	6.44	5.01	156	140
HIRIYUR Total	522.88	4.37	1.00	5.37	197.07	181.32	3.77	3.47	5.37	-84	-99
HSR Total	1346.47	4.37	0.54	4.91	1004.69	961.50	7.46	7.14	4.91	344	300
INDIRANAGAR Total	1952.73	4.37	0.48	4.85	1519.25	1466.00	7.78	7.51	4.85	572	519
JAYANAGAR Total	1410.10	4.37	0.66	5.03	1000.01	981.78	7.09	6.96	5.03	291	273
K.G.F Total	984.96	4.37	0.47	4.84	418.04	385.85	4.24	3.92	4.84	-59	-91
KANAKPURA Total	619.73	4.37	0.42	4.79	277.10	254.60	4.47	4.11	4.79	-20	-42
KENGERI Total	734.55	4.37	0.42	4.79	431.72	417.37	5.88	5.68	4.79	80	66
KOLAR Total	456.87	4.37	0.94	5.31	207.88	185.06	4.55	4.05	5.31	-35	-58
KORAMANGALA Total	1860.13	4.37	0.40	4.77	1464.99	1400.13	7.88	7.53	4.77	578	513
MADHUGIRI Total	664.46	4.37	0.82	5.19	225.78	197.57	3.40	2.97	5.19	-119	-147
MALLESWARAM Total	641.39	4.37	1.66	6.03	492.50	478.33	7.68	7.46	6.03	106	92
NELMANGALA Total	1036.19	4.37	0.59	4.96	608.53	537.95	5.87	5.19	4.96	95	24
PEENYA Total	989.84	4.37	0.69	5.06	681.53	660.04	6.89	6.67	5.06	181	159
RAJAJESHWARINAGAR Total	537.35	4.37	0.90	5.27	356.85	347.03	6.64	6.46	5.27	74	64
RAJAJINAGAR Total	762.03	4.37	0.89	5.26	499.27	490.43	6.55	6.44	5.26	98	90
RAMNAGAR Total	543.09	4.37	0.77	5.14	294.57	290.00	5.42	5.34	5.14	15	11
SHIVAJINAGAR Total	1011.70	4.37	0.70	5.07	730.22	707.71	7.22	7.00	5.07	217	195
TIPTUR Total	516.00	4.37	0.76	5.13	188.23	170.07	3.65	3.30	5.13	-76	-95
TUMKUR Total	1342.36	4.37	0.75	5.12	567.48	536.32	4.23	4.00	5.12	-120	-151
VIDHANASOUDA Total	457.66	4.37	1.12	5.49	346.72	340.81	7.58	7.45	5.49	95	90
YELHANKA Total	1037.08	4.37	0.45	4.82	527.17	489.81	5.08	4.72	4.82	27	-10
	24538										

Targets fixed for FY-17 is set as under:

Table 5.9

DIVISION	Contribution factor	Approved byKERC-FY-17	Targeted ARR for FY-17
CHANDAPURA Total	1.29	5.96	7.67
CHIKBALLAPURA Total	0.74	5.96	4.42
CHINTAMANI Total	0.62	5.96	3.69
CHITRADURGA Total	0.70	5.96	4.17
DAVANAGERE Total	0.91	5.96	5.42
HARIHARA Total	0.65	5.96	3.86
HEBBAL Total	1.19	5.96	7.07
HIRIYUR Total	0.68	5.96	4.04
HSR Total	1.34	5.96	8.00
INDIRANAGAR Total	1.40	5.96	8.34
JAYANAGAR Total	1.28	5.96	7.60
K.G.F Total	0.76	5.96	4.55
KANAKPURA Total	0.80	5.96	4.79
KENGERI Total	1.06	5.96	6.30
KOLAR Total	0.82	5.96	4.88
KORAMANGALA Total	1.42	5.96	8.44
MADHUGIRI Total	0.61	5.96	3.64
MALLESWARAM Total	1.38	5.96	8.23
NELMANGALA Total	1.06	5.96	6.30
PEENYA Total	1.24	5.96	7.38
RAJAJESHWARINAGAR Total	1.19	5.96	7.12
RAJAJINAGAR Total	1.18	5.96	7.02
RAMNAGAR Total	0.98	5.96	5.81
SHIVAJINAGAR Total	1.30	5.96	7.74
TIPTUR Total	0.66	5.96	3.91
TUMKUR Total	0.76	5.96	4.53
VIDHANASOUDA Total	1.36	5.96	8.12
YELHANKA Total	0.91	5.96	5.45

Draft evaluation and targets are set. Regarding setting of targets to distribution loss, action will be initiated.

XII. Directive on Prevention of Electrical Accidents:

The Commission observes that despite BESCOM taking various remedial measures including rectification of hazardous installations in its network, the number of fatal electrical accidents involving both human and livestock has only increased which is of

a serious concern. This indicates that identification and rectification of all hazardous installations is not completed. BESCOM should make more concerted efforts for identification and rectification of all the hazardous installations prevailing in the distribution system particularly in densely populated areas & public places. BESCOM also needs to take up with the concerned local bodies for rectification of the hazardous streetlight installations and other electrical works under their control to ensure safety of the public. It also necessary that BESCOM creates awareness through visual/print media continuously about safety aspects among public to ensure that the attention on safety aspects is maintained.

The Commission, during the Review meetings held with the ESCOMs has been prompting the ESCOMs to take up periodical preventive maintenance works, install LT protection to distribution transformers, conduct regular awareness programme for public on electrical safety aspects in use of electricity and also ensure use of safety tools and tackles by the field staff besides imparting necessary training to the field staff at regular intervals. BESCOM shall take effective steps to achieve these.

Further, BESCOM shall adhere to the best construction practices as per the standards on construction/expansion of the distribution network so that no maintenance is required for such network for a reasonably long period of time. BESCOM shall also conduct safety audit and carryout preventive maintenance works as per schedule to keep the network equipment in healthy condition.

The Commission has already forwarded the **Safety Technical Manual prepared by a sub-Committee comprising of experts from the Advisory Committee constituted by the Commission** which should serve as a useful guide for the field engineers to record all the technical deficiencies prevalent in the distribution network and enable them to take remedial action on the basis of the audit. In the Safety Technical Manual, detailed account of the steps to be taken on each element of the distribution system is enumerated which would help the field engineer in attending to the defects. The ESCOMs are required to circulate Safety Technical Manual among their field staff for necessary guidance and also to continuously monitor the implementation of the suggestions / recommendations contained in the reports.

The Commission therefore reiterates its directive that BESCOM shall continue to take necessary measures to identify and rectify all the hazardous locations/installations

prevalent in its distribution system and to provide LT protection to distribution transformers under an action plan to prevent and reduce the number of fatal electrical accidents occurring in the distribution system. The compliance regarding the same shall be submitted to the Commission every month regularly.

Compliance by the BESCOM:

1. Instructions are issued from corporate office to rectify the identified hazardous locations on top priority.
2. Third Saturday of every month is conducted as safety day and instructions are issued from corporate office to field staff to conduct safety day every month wherein officers have to educate the field staff regarding safety and to take at least one feeder maintenance work every month in each division.
3. LOI is issued for fixing the incoming and outgoing name plate details for every DTC and change over points.
4. Several circulars are issued from Corporate office regarding staff and public safety.
5. Instructions are issued from Corporate office to attend the observations of DTCs and Lines suggested by the Electrical Inspectorate, GoK.
6. Safety pamphlets, Book markers and Safety game boards have been distributed during ELECRAMA-2016.
7. LT spacers are being installed where ever required.
8. LTD boxes are being installed where ever required.
9. Instructions were issued to all the field staff to immediately rectify the dangling wires on transformers/poles, raise the aerial fuse boards to safety height, prune the trees along the HT/LT lines, clean the transformer/ RMU surroundings, maintain feeder pillar boxes & LTD boxes etc.
10. Modification of 11KV GOS had been carried out in BMAZ area.