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**PUBLIC NOTICE**

**Sub: Previous publication for amendment of existing OERC Regulations.**

The Commission is mandated under Section 23, 42(1), 61 and 86 (2) of the Electricity Act to maintain efficient system of supply using economically the resources with optimum investment etc. Clause 5.9.2, 5.9.4 and 5.9.6 of the National Electricity Policy envisages adoption of Demand Side Management, Energy conservation measures and load management techniques. As per the National Electricity Policy the Regulatory Commission among other things is required to ensure adherence to energy efficiency standards by utilities. Hence, in exercise of the powers conferred by Clause (zp) of sub-section (2) of Section 181 of the Electricity Act, 2003, the Commission has framed a draft Orissa Electricity Regulatory Commission (Demand Side Management) Regulations, 2011. The same is under pre-publications stage under Section 181 (3) of the Electricity Act, 2003. A consultative paper on Demand Side Management has also been prepared. The proposed Regulations and consultative paper are available in the Commission's website: [www.orierc.org](http://www.orierc.org). The copies of the proposed amendments and the consultative papers may also be obtained from the Commission's office by payment of necessary fees.

Before finalization of the said amendments, the Commission invites opinion through this previous publications u/s 181(3) of the Electricity Act, 2003. Interested persons/institutions/associations may furnish their suggestions/opinions on the said Regulations to the undersigned within 30 days of publication of this notice. On receipt of the responses from different quarters, the Commission may, in appropriate cases, bring the modifications, if any, to the proposed Regulations and approve the same for publication in the official gazette.

The Commission is also contemplating to take up the matter in the ARR and Tariff Hearing exercise for the financial year 2011-12.

By order of the Commission

**Secretary**

**ORISSA ELECTRICITY REGULATORY COMMISSION**  
**BIDYUT NIYAMAK BHAWAN**  
**UNIT-VIII, BHUBANESWAR-751 012**

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**NOTIFICATION**

Dated, the \_\_\_\_\_, 2011

No.OERC-Engg.-61/1998 (Vol.II) - WHEREAS section 23 of the Electricity Act 2003 provides that “If the Appropriate Commission is of the opinion that it is necessary or expedient so to do for maintaining the efficient supply, securing the equitable distribution of electricity and promoting competition, it may, by order, provide for regulating supply, distribution, consumption or use thereof”;

AND WHEREAS Section 42 (1) of the Electricity Act 2003 provides that “it shall be the duty of a distribution licensee to develop and maintain an efficient, co-ordinated and economical distribution system in his area of supply and to supply electricity in accordance with the provisions contained in this Act”

AND WHEREAS Section 61 of the Electricity Act 2003 provides that “The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:-“Clause (c) “the factors which would encourage competition, efficiency, economical use of resources, good performance and optimum investment”

AND WHEREAS Section 86(2) of the Electricity Act 2003 provides that “State Commission shall advise the State Government on all or any of the following matters, namely:-“Clause (i) “promotion of competition, efficiency and economy in activities of the electricity industry;”

AND WHEREAS Clause 5.9.2 of the National Electricity Policy provides that “The potential number of installations where demand side management and energy conservation measures are to be carried out is very large, Bureau of Energy Efficiency (BEE) shall initiate action in this regard. BEE would also make available the estimated conservation and DSM potential, its staged implementation along with cost estimates for consideration in the planning process for National Electricity Plan”;

AND WHEREAS Clause 5.9.4 of the National Electricity Policy provides that “In the field of energy conservation initial approach would be voluntary and self-regulating with emphasis on labelling of appliances. Gradually as awareness increases, a more regulatory approach of setting standards would be followed”;

AND WHEREAS Clause 5.9.6 of the National Electricity Policy provides that “In order to reduce the requirements for capacity additions, the difference between electrical power demand during peak periods and off-peak periods would have to be reduced. Suitable load management techniques should be adopted for this purpose. Differential tariff structure for peak and off peak supply and metering arrangements (Time of Day metering) should be conducive to load management objectives. Regulatory Commissions should ensure adherence to energy efficiency standards by utilities;

NOW, THEREFORE, in exercise of the powers conferred by clause (zp) of sub-section (2) of section 181 of the Electricity Act, 2003 (36 of 2003), the Orissa Electricity Regulatory Commission hereby makes the following Regulations namely Orissa Electricity Regulatory Commission (Demand Side Management) Regulations, 2011.

## **Chapter I: General**

### **1. Short Title, extent and Commencement**

1.1. These Regulations may be called the “Orissa Electricity Regulatory Commission (Demand Side Management) Regulations, 2010”.

1.2. These Regulations shall be applicable to the Distribution Licensees in the Orissa in their respective areas of supply.

1.3. These Regulations shall come into force from the date of its publication in the Official Gazette.

### **2. Definitions**

2.1. In these Regulations, unless the context otherwise requires –

i. “Act” means the Electricity Act, 2003 (36 of 2003);

ii. “Baseline data” means the initial base level consumption and/or demand for electricity before a DSM programme begins to provide a starting point for comparison for assessing programme impact”;

iii. “Bureau” means the Bureau of Energy Efficiency established under subsection (1) of Section 2 of The Energy Conservation Act, 2001

iv. "Commission" means the Orissa Electricity Regulatory Commission;

v. “Cost Effectiveness Index” means an indicator of the attractiveness of any investment in DSM programme or when compared to the costs of energy produced and delivered in the absence of such an investment

vi. “Demand Side Management” means the actions of a Distribution Licensee, beyond the customer's meter, with the objective of altering the end-use of electricity - whether it is to increase demand, decrease it, shift it between high and low peak periods, or manage it when there are intermittent load demands - in the overall interests of reducing Distribution Licensee costs.

vii. “DSM Resource Acquisition” means a mechanism to implement DSM projects through customers, Energy Service Companies, Non-Government Organisations, manufacturers/suppliers, or other private sector organizations, with payment made to them by the Distribution Licensee for the resultant energy and load reductions

viii. “Energy Services Company” means a company which is in the business of providing energy efficient and load management equipment and/or services to end-use customers and is approved by Bureau

ix. “Evaluation, Measurement and Verification” means activities which evaluate, measure and verify performance or other aspects of DSM/energy efficiency programs or their market environment

x. “Monitoring and Reporting” means activities which monitor and evaluate the progress of DSM/energy efficiency programs of the Distribution Licensee

## **Chapter II: DSM Objectives, targets and guidelines**

### **3. DSM Objectives**

3.1. The Commission shall formulate DSM objectives that shall be considered in the advancement and implementation of cost effective DSM initiatives in the State. The objectives may include power shortage mitigation, seasonal peak reduction, cost effective energy savings, lowering the cost of electricity, reduction in emissions of greenhouse gases etc.

3.2. While formulating the DSM Objectives, the Commission may take into consideration the National DSM Objectives/ Plans formulated by BEE, if any.

3.3. The DSM objectives may be consistent with the DSM objectives set out by Bureau as a part of Energy Conservation Plan for the country.

### **4. Assessment of technical potential for DSM**

4.1. The Distribution Licensees in the State shall carry out assessment of potential for DSM in the area of their supply one year before the start of every MYT Control Period.

Notwithstanding above provision, the first assessment of technical potential for DSM shall be carried out within six months of the notification of these Regulations.

4.2. Distribution Licensee shall be guided by methodology developed by Bureau while assessing of technical potential for DSM.

### **5. DSM Targets**

5.1. The Commission shall establish DSM targets for each Distribution Licensee in the State.

5.2. While setting DSM target for the Distribution Licensee, the Commission will give due consideration to factors such as consumer mix, load profile, etc.

5.3. Examples of DSM targets may include the following:

- Percentage reductions in load growth;
- Savings in kW, kWh;
- Savings as a percent of total resources to meet load;

5.4. While establishing the targets, the Commission shall consider the technical potential in Orissa as assessed by the Distribution Licensees.

## **6. Guidelines on DSM process**

6.1. The Commission shall issue guidelines to guide the Distribution Licensees in execution of the following activities

- i. Load and market research
- ii. Implementation of DSM programmes
- iii. Cost Effectiveness Assessment of DSM programmes
- iv. Monitoring and Reporting of DSM Plans and programmes
- v. Eligibility criteria for DSM programmes
- vi. Methodology for setting DSM targets and funding levels
- vii. Database development framework

6.2. The Commission shall issue guidelines on these matters from time to time

6.3. Issuance of such guidelines shall not be a pre-requisite for preparation and submission of the first DSM plan by the Distribution Licensees.

## **Chapter III: DSM Cell**

### **7. Constitution of DSM Cell, its roles & responsibilities**

7.1. Every Distribution Licensee shall, constitute DSM Cell within one month of adoption of these Regulations

7.2. The DSM Cell so constituted shall be provided with necessary authority and resources so as to execute the functions assigned to it under these Regulations

7.3. The DSM Cell shall be responsible for:

- i. Load research and development of baseline data
- ii. Formulation of DSM Plan
- iii. Design and development of DSM projects including cost benefit analysis, plans for implementation, monitoring & reporting and for measurement & verification
- iv. Seeking necessary approvals to DSM Plan and individual programmes
- v. Implementation of DSM programmes
- vi. Any other additional function that may be assigned by the Commission from time to time

## **Chapter IV: DSM Process**

### **8. Load and market research and development of baseline data**

8.1. Distribution Licensee shall undertake load research to identify the target consumer segment and end uses for DSM programmes to build the necessary database

8.2. Distribution Licensee shall undertake market research to estimate market potential for specific energy efficiency technologies and applications, establish key performance indicators, and determine existing baseline market conditions

8.3. On the basis of the results of load and market research, the Distribution Licensee shall develop baseline data for its area of supply

8.4. Distribution Licensee shall design, develop and implement the initial few DSM programmes on the basis of available data and studies completed by BEE till the complete baseline data is available for its area of supply and establishment of base line data shall not be a pre-requisite for design of such initial DSM programmes by the Distribution Licensees.

### **9. Formulation of DSM Plan**

9.1. Distribution Licensee shall formulate and submit to the Commission a perspective DSM Plan covering period of the control period, within one year of notification of these Regulations. The Plan shall include

- i. An overall goal for DSM Plan
- ii. Description of DSM programmes to form a part of DSM Plan
- iii. Implementation process and schedule of each programme in the plan as a whole
- iv. Plan for Monitoring and Reporting
- v. Indicative cost effectiveness assessment of programmes

Notwithstanding above, the first DSM Plan shall be prepared within one year of the date of notification of these Regulations and shall be for the period till the end of ongoing MYT Control Period.

9.2. The Distribution Licensee shall include all relevant DSM programmes (including multi-state programmes) developed by Bureau in its perspective plan as and when such programmes are announced by Bureau.

9.3. The Distribution Licensee shall submit on rolling basis, an annual plan, not inconsistent with the perspective plan, for upcoming year, along with the Annual Performance Review.

9.4. Selection and prioritisation of various DSM programmes in the DSM Plan shall be guided by the following factors:

- i. The Cost effectiveness guidelines issued by the Commission

ii. DSM Objectives identified in Regulation 3

iii. Whether the proposed programmes supplement National level efforts adopted by the Bureau

iv. Programmes with high visibility and therefore potential for creation of awareness within consumers

## **10. Commission review and approval of DSM plan**

10.1. Distribution Licensee shall submit the DSM Plan to the Commission for approval at least six months before the start date of the next MYT period.

10.2. The Commission may adopt procedures as specified in the OERC (Conduct of Business Regulations, 2004 for according approval to the DSM Plan

## **11. Preparation of DSM Programme Document**

11.1. For each DSM programme included in the DSM Plan, a detailed description shall be provided in a separate Programme Document. The description shall include general information, technology, schedule for deployment, budget, cost effectiveness assessment, detailed implementation plan, estimation of savings, etc.

11.2. For each DSM programme cost benefit analysis shall be carried out as per guidelines issued by the Commission on Cost effectiveness from time to time.

## **12. Approval of DSM Programme Document**

12.1. Prior to implementing any DSM programme, Distribution Licensee must obtain approval of the Commission.

12.2. Each Programme Document shall include the following:

i. Description of the programme;

ii. Objectives and rationale for the programme;

iii. Consumer segments and estimated level of participation;

iv. Estimate of baseline;

v. Assessment of programme in line with Cost Effectiveness Guidelines issued by the Commission

vi. Mechanism for recovery of cost and performance incentives;

vii. Marketing, delivery strategy and Implementation schedule;

viii. Implementation mechanism e.g. Energy Service Companies, DSM Bidding, DSM Resource Acquisition, etc

ix. Monitoring and evaluation plan;

x. Plan for Training/Seminars/Workshops to increase consumer awareness

12.3. The Commission shall approve a DSM program if it is in line with the Objectives set out in Section 3 of the Regulations. The Commission may direct modifications to proposed or on-going programmes to ensure consistency with the DSM Objectives. However, the Commission shall allow Distribution Licensee adequate time to notify consumers of program modification.

### **13. Implementation of DSM programmes**

13.1. Distribution Licensee shall undertake implementation of DSM programmes in line with the guidelines issued by the Commission from time to time

13.2. The implementation of the programme shall be undertaken in the manner as approved by the Commission

13.3. Distribution Licensee shall undertake implementation of quick gain DSM programmes

13.4. Distribution Licensee shall carry out implementation of activities assigned to it either by itself or through engagement of appropriate independent entity While doing so, the Distribution Licensee shall ensure that continuity and consistency is maintained and interest of the consumers is not compromised

### **14. Mechanism for Cost Recovery**

14.1. Distribution Licensee shall identify the net incremental costs, if any, associated with planning, design and implementation of programmes

14.2. Distribution Licensee may propose methodology for recovery of net incremental costs through tariff or any other mechanism

14.3. In order to qualify for cost recovery, each program must be

- i. Approved prior to implementation
- ii. Implemented in accordance with the approved program plan and
- iii. Implemented cost effectively

14.4. Distribution Licensee shall provide all necessary assistance to the Commission, or third party assigned by the Commission in undertaking Evaluation Measurement and Verification of DSM programmes implemented by it.

14.5. The Commission may direct the Distribution Licensee to undertake DSM programmes that may not be cost effective but is highly beneficial to the society.

The Commission will make available resources for such project.

### **15. Monitoring and reporting of DSM Programmes**

15.1. Distribution Licensee shall prepare plan and undertake monitoring and reporting of DSM programmes as per Guidelines on Monitoring and Reporting issued by Commission from time to time or as approved by the Commission while approving the DSM programme.



## **16. Evaluation Measurement and Verification of DSM Programme**

16.1. Distribution Licensee shall prepare plan for evaluation, measurement and verification of savings from DSM programmes as per Guidelines on Evaluation, Measurement and Verification issued by the Commission from time to time.

16.2. Third party Evaluation Measurement and Verification of DSM programmes may be undertaken by the Commission or third party assigned by Commission. While engaging the agency, the Commission shall ensure that the Agency is not undertaking any other engagement which could conflict with the interests of the consumers in the State.

16.3. Distribution Licensee shall make available necessary information/data to the Commission or third party assigned by the Commission to measure and verify the savings from DSM programmes.

## **Chapter V: DSM Plan and Programme Completion Report**

17. Reports on progress of DSM Plan and expenses incurred on implementation of DSM Plan shall be submitted by the Distribution Licensee every six months.

18. The Distribution Licensee will prepare and submit a detailed Program Completion Report and submit the same to the Commission within one month of completion of such programme.

19. The Report shall cover the programme expenses, achievements, outcomes and outputs, constraints and difficulties faced, conclusions, recommendations, lessons learned and way forward.

## **Chapter VI: Incentives**

20. The Commission may provide incentives to Distribution Licensees for achieving or exceeding DSM Objectives as identified in Section 3 of the Regulations.

## **Chapter VII: Miscellaneous**

21. The Commission may, at any time add, vary, alter, modify or amend any provisions of these Regulations.

22. If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may, by general or specific order, make such provisions not inconsistent with the provisions of the Act, as may appear to be necessary for removing the difficulty

23. The Commission may, from time to time, issue orders and practice directions in regard to the implementation of the Regulations and procedures to be followed.

24. All disputes arising under these Regulations shall be decided by the Commission based on an application made by the person aggrieved.

**By order of the Commission**

**Secretary**

## **CONSULTATIVE PAPER ON DEMAND SIDE MANAGEMENT BY ELECTRICITY UTILITIES**

### **(A) Introduction**

DSM refers to a mechanism that utilities through targeted educational or incentive programs use to modify end-use electrical energy consumption through energy efficiency (reducing overall consumption) or using load management to reduce demand at times when it is beneficial in terms of cost to do so. Such measures could significantly improve the reliability of electric power systems and help narrow the gap between supply and demand, while lowering the economic and environmental costs of electric service.

DSM programs consist of the planning, implementing, and monitoring activities of electric utilities that are designed to encourage consumers to modify their level and pattern of electricity usage.

Moreover the DSM is the Mechanism to influence customer's **CAPABILITY** and **WILLINGNESS** to reduce electricity consumption.

Energy Demand Management, also known as Demand Side Management (DSM), entails actions that influence the quantity or patterns of use of energy consumed by end users, such as actions targeting reduction of peak demand during periods when energy-supply systems are constrained. Peak demand management does not necessarily decrease total energy consumption but could be expected to reduce the need for investments in networks and/or power plants.

### **(B) How it works:**

Ideally, energy use would be optimized by supply and demand interactions in the market. For electricity use in particular, the price paid on the market is often regulated or fixed, and in many cases does not reflect the full cost of production. Electricity use can vary dramatically on short and medium time frames, and the pricing system may not reflect the instantaneous cost as additional higher-cost ("peaking") sources are brought on-line. In addition, the capacity or willingness of electricity consumers to adjust to prices by altering demand (elasticity of demand) may be low, particularly over short time frames. In many markets, consumers (particularly retail customers) do not face real-time pricing at all, but pay rates based on average annual costs or other constructed prices.

Energy demand management activities should bring the demand and supply closer to a perceived optimum. Demand Side Management and Energy Conservation go hand-in-hand and sometimes synonymous.

Energy conservation and efficiency measures are the best alternative energy sources. There are various opportunities and techniques available for reducing energy consumption such as efficient motors and transformers, day lighting, variable speed drives, solar hot water systems, etc. These technologies reduce demand, help in lowering high peak prices and also reduce greenhouse gas emissions due to less stress on generating plants.

Demand side management (DSM) is a new source of power with minimum investment and hence is commonly practiced in all modern economies and is becoming an essential fore-runner to generation investment.

Government should introduce various programmes for demand management to counter energy crisis. GoO has issued its Notification dt.18.05.07, applicable to all energy consumers to adopt energy saving measures for efficient use of energy and its conservation. This notification, primarily deals with the planning, implementing and monitoring activities of electricity utilities of the state that are designed to encourage consumers to modify their level and pattern of electricity use.

Demand-side management (DSM) also refers to cooperative activities between the utility and its customers (sometimes with the assistance of third parties such as energy services companies and various trade allies) to implement options for increasing the efficiency of energy utilisation, with resulting benefits to the customer, utility and society as a whole.

**A good DSM program requires developing a thorough knowledge of the utility's operational profile and customer needs.**

### **(C) Benefits**

Traditionally, electric utilities planned their supply to meet all the needs of their customers with little regard to how or when customers use energy, if any. DSM can be the least cost planning option. Utilities consider implementation of DSM programs because such programs benefit the customers.

- From a customer perspective, DSM programs make sense because the energy savings which result from the use of energy efficient technologies directly benefit the customer.
- Utilities can benefit from reductions or shifts in customer energy use. In the near term, DSM programs can reduce energy costs for utilities, and in the longer term, DSM programs can help limit the need for utilities to build new power plants, distribution, and transmission lines. In short, a DSM program can be much cheaper to implement than building a new generation plant.
- Society benefits from DSM because reduced or shifted energy usage can directly translate into less air pollution, less carbon/NOx emissions, and a way to lower the potential environmental threats associated with global warming.
- DSM programs are a promising alternative strategy to the increased concerns of customers, utilities, and government agencies have now regarding global warming and carbon emissions. Moreover, a properly designed DSM program can actually track the program impacts and measure the amount of carbon reduced or saved based on program activities.
- Improve the efficiency of energy systems.
- Lower the cost of delivered energy to consumers.
- Reduce power shortages and power cuts.
- Improve the reliability and quality of power supply.

#### **(D) Role of DISCOMs**

The DISCOMs should:

- Decide where to focus.
- Likelihood of success.
- Convince the regulators that the proposal is a cost-effective investment.
- Opportunity to develop a thought-out road map for effective implementation of the program.

DSM refers to organized activities of the DISCOMs to affect the timing or amount of electricity used by customers. Utility DSM programs should usually fall into two broad categories:

- Energy Conservation and Efficiency Programs – to save energy.

- Demand/Load Response Programs- to shift and reschedule energy consumption process.

**(E) Role of Generators:**

Generators should focus to have the maximum electrical output from the least primary input. Merely maintaining the auxiliary consumption of the Generators within the tariff normative is not sufficient. It should constantly plan, monitor, adopt cost effective modern technologies to reduce its actual energy consumption. The other area where generators are required to plan its primary energy resources for the timing of its generation when it is most needed i.e. during peak demand period of the grid particularly for hydro generators and liquid fuel/gas based generators.

**(F) Role of Transmission Utility:**

The transmission utility should constantly monitor the active and reactive power flow in its system and plan for optimal system configuration so that transmission loss in the EHT line shall be at base minimum level. Merely maintaining the transmission loss within tariff normative is not enough. Another area where the transmission utilities would like to focus on the reactive compensation in its line so that the maximum amount of active power gets transmitted in the existing system.

**(G) Policy Framework & Regulators Role:**

Considering the vast potential of energy saving and benefits of energy efficiency, the Government of India enacted the Energy Conservation Act, 2001 in October, 2001.

The Act provides for legal framework, institutional arrangement and a regulatory mechanism at the Central and State level to embark upon energy efficiency drive in the country.

The Energy Conservation Act, 2001 became effective from 1st March, 2001.

The strategy behind this act is to make power available to all by 2012 through promotion of energy efficiency and its conservation in the country, which is found to be the least cost option to bridge the gap between demand and supply of energy. Nearly 25000 MW of capacity creation through energy efficiency in the electricity sector alone has been estimated in India. Energy Conservation Potential for the economy as a whole has been assessed as 23% with maximum potential in Industrial and Agricultural sectors.

Section 61 of the EA 2003 gives ERC the mandate to regulate electricity tariff and lays down the guiding factors to be considered while determining tariffs. Section 61 C requires Regulatory Commissions to set tariff by considering

*“.....the factors which would encourage competition, efficiency, economical use of resources, good performance and optimum investment.”*

Further Section 86(4) of the Electricity Act 2003 states that in discharging functions, *the State Commission shall be guided by National Electricity Policy, Nation Electricity Plan and Tariff Policy to be published under Section 3.*

Under Clause 5.9.2 of the NEP the GoI has mandated BEE to initiate an Action Plan to implement DSM and Energy Conservation measures. The clause 5.9 of the NEP on Energy Conservation applicable to all including electricity utilities stipulates:

#### *5.9 Energy Conservation*

*5.9.1 There is a significant potential of energy savings through Energy Efficiency and DSM measures. In order to minimize the overall requirement, energy conservation and DSM is being accorded high priority. The Energy Conservation Act has been enacted, and the BEE has been set up.*

*5.9.2 The potential number of installations where DSM and energy conservation measures are to be carried out is very large. He BEE shall initiate action in this regard. The BEE would also make available the estimated conservation and DSM*

- potential, its staged implementation along with cost estimates for consideration in the planning process for National Electricity Plan.*
- 5.9.3 Periodic Energy Audits have been made compulsory for power intensive industries under the Energy Conservation Act. Other industries may also be encouraged to adopt Energy Audits and energy conservation measures. Energy conservation measures shall be adopted in all Government buildings for which saving potential has been estimated to be about 30% energy. Solar water heating Systems and solar passive architecture can contribute significantly to this effort.*
- 5.9.4 In the filed of energy conservation initial approach would be voluntary and self-regulating with emphasis on labeling of appliances. Gradually as awareness increases, a more regulatory approach of setting standards would be followed.*
- 5.9.5 In the agricultural sector, the pump sets and the water delivery System engineered for high efficiency would be promoted. In the industrial sector, energy efficient technologies should be used and Energy Audits carried out to indicate scope for energy conservation measures. Motors and drive System are the major source of high consumption in Agricultural and Industrial Sector. These need to be addressed. Energy efficient lighting technologies should also be adopted in industries, commercial and domestic establishments.*
- 5.9.6 In order to reduce the requirements for capacity additions, the difference between electrical power demand during peak periods and off-peak periods would have to be reduced. Suitable load management techniques should be adopted for this purpose. Differential tariff structure for peak and off peak supply and metering arrangements (ToD metering) should be conducive to load management objectives. Regulatory Commissions should ensure adherence to Energy Efficiency standards by Utilities.*
- 5.9.7 For effective implementation of energy conservation measures, role of Energy Service Companies would be enlarged. Steps would be taken to encourage and incentivise emergence of such companies.*
- 5.9.8 A national campaign for bringing about awareness about energy conservation would be essential to achieve efficient consumption of electricity.*

5.9.9 *A National Action Plan has been developed. Progress on all the proposed measures will be monitored with reference to the specific plans of action.*

As per Regulations 8(c ) of Orissa Electricity Regulatory Commission (Conduct of Business) Regulations, 2004

*“The Commission may appoint by order in writing any of its Members as Adjudicating Officer under Section 143 of the Act or under Section 27 of the Energy Conservation Act, 2001.”*

Also, as per the Distribution (Planning and Operation) Code clause 3.4.3;

*Load research: The Licensee may develop a load research programme with objective of obtaining customer data and load profile data that shows the usage characteristics of specific appliances of different categories of consumers. The load research programme will facilitate obtaining data such as:*

- (i) Demand according to end use at the hour of system peak, daily, monthly, seasonal or annual.*
- (ii) Hourly end use demand for the day of the system peak, monthly, seasonal or annual.*
- (iii) Hourly end use demand for the average day of the system peak, monthly, seasonal or annual.*
- (iv) Category wise Diversity Factor or coincidence factors and Load Factors.*
- (v) Total energy Consumption for each category by day, month, season or year.*
- (vi) Category wise non-coincident peak demands.*
- (vii) Hourly demand for end use appliances.*

*The Licensee shall work out details of its Load Research implementation programme and file its proposal with the Commission for its consideration.*



**(H) Direction given by OERC in its tariff Order:**

- **Conduct Energy Audit**

Energy audit has been defined in the Act as the verification, monitoring and analysis of use of energy including submission of technical report containing recommendation for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption. Energy Audit is the technique to establish the current status of energy efficiency of a system. It involves identifying energy losses, quantifying them, segregating the losses into technical and commercial losses, estimating energy conservation potential and proposing visible and economically attractive solutions. The ultimate end result of such an exercise is to improve system performance, increase its efficiency and introduce design changes leading to renovation, modernization and up-gradation. The energy accounting gives the overall picture of energy availability and its use.
- OERC has made some tariff related intervention regarding DSM in its tariff Order on dt.20.03.2010 for FY 2010-11. Those are as follows:
  - Three phase consumers with static meters are allowed to avail TOD rebate excluding Public Lighting and emergency supply to CGP @10 paise/unit for energy consumed during off peak hours. Off peak hours has been defined as 12 Midnight to 6 AM of next day.
  - Drawl by the industries during off-peak hours upto 120% of Contract Demand without levy of any penalty has been allowed. “Off-peak hours” for the purpose of tariff is defined as from 12 Midnight to 6.00 A.M. of the next day. The consumers who draw beyond their contract demand during hours other than the off-peak hours shall not be eligible for this benefit. When Statutory Load Regulation is imposed then restricted demand shall be treated as contract demand.
  - Power factor incentive for HT & EHT consumers will be applicable above power factor of 97% and power factor penalty shall be applicable below the level of 92% w.e.f. 01.04.2010. The rate of this incentive will be 1% for every 0.5% rise above the PF of 97% upto and including 100% on the monthly Demand Charge and Energy Charge.

- Establishment of Special Courts and Police Stations to curb theft and pilferage of energy by the dishonest consumers.
- Tariff has been rationalized within a voltage group.
- Implementation of Intra-State ABT is an effective tool for Demand Side Management. OERC has issued OERC (Intra-State ABT) Regulation, 2007 which was to be made effective from 14.02.2008. This shall be implemented shortly. But this has not been possible due to various reasons.
- The Commission has accepted the proposal of OPTCL for collection of the Reactive Energy charges provisionally @ 6.00 paise / KVARh as per Clause 1.7 of OGC for FY 2010-11.
- Apart from this, OERC has instructed DISCOMs for Conducting energy audit, load balancing, use of transformers of optimum capacity etc. In the scenario of over loaded distribution system, load management plays a very important role for reduction of technical losses. To prevent overloading of lines and transformers in real time mode, modern features such as distribution automation may be incorporated. Distribution automation along with SCADA is important for load management. Distribution SCADA is under installation in Orissa. Transmission SCADA has already been operationalized.
- Further, Energy audit involves identifying energy losses, quantifying them, segregating the losses into technical and commercial losses, estimating energy conservation potential and proposing visible and economically attractive solutions. The ultimate end result of such an exercise is to improve system performance, increase its efficiency and introduce design changes leading to renovation, modernization and upgradation. The energy accounting gives the overall picture of energy availability and its use.
- Apart from correct metering for reduction of commercial loss, the utilities also should take remedial steps for reduction of technical losses through relocation of substations, up-gradation of transformer capacity, re-conductoring and other system improvement works.

### **(I) State Designated Agency for the State of Orissa**

Engineer in Chief, Electricity-cum-PCEI Orissa has been notified by GoO vide its Notification dt.18.05.07 as State Designated Agency for the State of Orissa for implementation of EC Act, 2001. Apart from the EC Act implementation of other activities carried out are: Electrical Inspection of installations under IE rules and acts as a nodal agency for implementation of REP (Rural Electrification Programme) in the state. The organization also acts as an advisory to State Government on matter relating to Policy, implementation and monitoring of electricity related activities in the State.

### **(J) Conclusion**

DSM requires the DISCOMS to plan, implement and monitor their own activity of retail supply of electricity in such a manner which encourages the ordinary consumer to design their electricity consumption pattern in such a manner that both their timing and quantum of demand is such as to optimize its use in the most economic and efficient manner. DSM therefore is an important tool that compliments supply-side strategies and promotes efficiency in the use of electricity. Current DSM programmes initiated by GoO are limited to Building Management and street illuminations etc. For DSM programmes to yield desired results, there is a need to institutionalise the DSM – Energy Efficiency programmes and build a framework of activities and functions that need to be adopted by the electricity utilities. In this regard, the model DSM Regulations formulated by Forum of Regulators (FOR) is annexed as Annexure-I for reference.

Stake holders consultation is necessary for finalization of the model framework. Hence, the comments/suggestions are invited from the interested parties including consumer organizations, electricity utilities and general public to be discussed during the ARR & tariff hearing for the FY 2011-12.