

Karnataka Energy Efficiency and Conservation Policy 2015-19

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ACRONYMS

Acronyms	Definition
BEE	Bureau of Energy Efficiency
BU	Billion Units
CAGR	Compound Annual Growth Rate
CEA	Central Electricity Authority
DISCOM	Distribution Company
DSM	Demand Side Management
EA 2003	Electricity Act, 2003
EC	Energy Conservation
ECBC	Energy Conservation Building Code
ECB Directives	Energy Conservation Building Directives
EE	Energy Efficiency
EPS	Electric Power Survey
FTL	Florescent Tube Light
FY	Financial Year
GDP	Gross Domestic Product
Gol	Government of India
GoK	Government of Karnataka
GW	Giga Watt
HP	Horsepower
HPSV lamp	High Pressure Sodium Vapour lamp
HLPAMC-EE	High Level Program Approval and Monitoring Committee- Energy Efficiency
ISI	Indian Standards Institute
INR	Indian Rupee
kVA	kilo Volt Ampere
kW	kilo Watt
kWh	kilo Watt hour
LED	Light Emitting Diode
LPSV lamp	Low pressure sodium vapour lamp
LT	Low Tension
MU	Million Units
MW	Mega Watt
NPC	National Productivity Council
PF	Power factor
PWD	Public Works Department
KERC	Karnataka Electricity Regulatory Commission
KREDL	Karnataka Renewable Energy Development Ltd.
KSECF	Karnataka State Energy Conservation Fund
SAPCC	State Action Plan on Climate Change
SDA	State Designated Agency
SERC	State Electricity Regulatory Commission
SME	Small And Medium Enterprises
Sq. km.	Square kilometre
S&L	Standards and Labelling

1 PREAMBLE

Karnataka, a progressive and dynamic state in southern part of India, has a geographical area of around 1,91,791 sq.km, which accounts for 5.83 percent of the total area of India¹. As per Census 2011, the population of the state is around 61 million in which 61.4 percent and 38.6 percent live in rural & urban areas respectively. In recent years, the state has faced several challenges in terms of energy supply in different forms which can hamper the growth of the state. The energy demand in the state grew at a CAGR of around 8 percent during 2006-2014, while the supply grew by only 6 percent. Energy requirement of the state at the end of Tenth Five Year plan was 40,797 Million Units (MU) and it has increased to 64,150 MU in FY 2013-14. However, the state was able to meet only 90.5 percent of the energy requirement, leaving the state with an energy deficit of 9.5 percent amounting to 6098 MU. Peak demand which was 6,253 MW at the end of Tenth Five Year Plan (by 2007) increased to 9940 MW in FY 2013-14. However, the state was able to meet only 9223 MW during FY 2013-14 resulting in peak deficit of 717 MW². In addition, there has been an increased dependence on short term power purchase by the distribution utilities (~19 percent of total annual power purchase during FY 2012-13), the cost of which is 30 to 35 percent higher than average power purchase cost. The state also depends pre-dominantly on conventional energy sources with a huge dependence on coal-based generation for meeting its current as well as rapidly growing energy and peak demand. Issues related to limited fossil fuel resources, coal linkages and environmental restrictions are hindering the capacity addition as well as increasing the dependence on imported coal.

To sustain continuous growing requirement in the environment of depleting conventional energy sources and geographical challenge, relying only on supply side option is not an economically viable option. There is an urgent need to increase end use efficiency which would in-turn result in reduced demand to be met.

Concerned with depleting conventional energy sources, impact on climate and consistently growing energy demand, the Government of Karnataka has emphasized the importance of energy efficiency (EE) and its role in addressing the development challenges faced by the state. The Government of Karnataka had announced “**The Karnataka Renewable Energy Policy 2009-14**” in 2009 to promote and harness the renewable energy and energy efficiency potential in the state. Subsequently, the Government of Karnataka and KREDL have also undertaken several measures at policy, regulatory and program implementation level for promotion of EE sector in the state.

With this background, the Government of Karnataka has now decided to announce a separate “**Karnataka Energy Efficiency and Conservation Policy 2014-2019**” for the promotion and large scale deployment of energy efficiency measures in the state. This policy will provide a long

¹ Source: Census 2011

² Load generation Balance Report by CEA

term vision for driving energy efficiency and energy conservation across different consumer categories in the state and also helps the state in establishing as a leading state for deployment of large scale EE programs.

This policy aims to conserve around **300 million kWh** of electricity consumption and would result into avoiding fossil fuel based generation capacity addition of around **70 MW** in the medium term.

2 KARNATAKA ENERGY EFFICIENCY AND CONSERVATION POLICY 2015 - 2019

2.1 DEFINITIONS

Following expressions used in the Policy would have meanings assigned to them as defined hereunder:

- “Bureau” means the Bureau of Energy Efficiency established under sub-section (1) of Section 2 of the Energy Conservation Act, 2001;
- “EA 2003” means Electricity Act 2003, including amendments there to;
- “EC 2001” means Energy Conservation Act 2001, including amendments there to;
- “Energy Audit” means the verification, monitoring and analysis of use of energy including submission of technical report containing recommendations for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption;
- “Energy Conservation Building Codes” means the norms and standards of energy consumption expressed in terms of per square meter of the area wherein energy is used and includes the location of the building;
- “Energy Conservation” means reducing energy consumption through rational use of energy;
- “Energy Efficiency” means activities or programmes that stimulate customers to reduce energy use by making investments in more efficient equipment or control that reduce energy use while maintaining a comparable level of service as perceived by the customer;
- “Equipment” or “Appliance” means any equipment or appliance which consumes, generate, transmits or supplies energy and includes any device that consumes any form of energy and produces a desired work;
- “Energy Services Company (ESCO)” means a company which is in the business of providing energy efficient and load management equipment and/or services to end use customers;
- “Demand Side Management (DSM)” means the actions of a Distribution Utility, beyond the customer's meter, with the objective of altering the end-use of electricity

- whether it is to increase demand, decrease it, and 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.

- “Designated Consumer ” means any consumer specified under clause(e) of section 14 of Energy Conservation Act 2001;
- “Distribution Utility” means a licensee authorised to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply;
- “Notification” means a notification in the official gazette of India or gazette of state of Karnataka as the case may be;
- “Policy” means the Karnataka Energy Efficiency and Conservation Policy 2015-19;
- “State Designated Agency” means any agency designated under clause (d) of section 15 of EC Act 2001;

Any other terms or expression used in this policy but not defined herein shall have the meaning given to it by the Energy Conservation Act 2001, Electricity Act 2003 and their amendments.

2.2 VISION

- To harness the vast potential of energy efficiency and energy conservation in Karnataka for the benefit of environment and society.
- To establish Karnataka as a leading state in promoting and deploying EE measures across various sectors for ensuring energy security and sustainable growth.

2.3 OBJECTIVE

The objectives of the policy are as follows:

- To put in place an over arching framework for identification, development, implementation, monitoring and verification of energy efficiency programs to be undertaken in the state to tap huge energy savings potential;
- To control, reduce and influence electricity demand and electricity consumption through implementation of suitable energy efficiency and energy conservation measures in high energy consumption sectors;
- To complement supply side strategies in order to avoid, reduce, or postpone investments in generation, transmission and distribution infrastructure by slowing demand growth;
- To reduce the greenhouse gases emissions and lower overall cost of electricity to consumers by economical and efficient use of resources;

- To supplement national level efforts for implementation of various energy efficiency and energy conservation programs initiated by Ministry of Power, Government of India;
- To lay down framework for policy implementation and define roles and responsibilities of various stakeholders.

2.4 ENERGY EFFICIENCY POTENTIAL ASSESSMENT AND TARGETS (2014-19)

In 2009, the National Productivity Council (NPC) under the aegis of Bureau of Energy Efficiency (BEE) had undertaken a study to identify energy savings potential in key sectors in Karnataka. It was estimated that implementation of energy efficiency measures in different sectors would result in overall energy savings of 6,290 million kWh, around 18 percent of total electricity consumption of the State in FY 2007-08. Energy sale approved by the Commission for FY 2013-14 was 45,293 million kWh. Based on similar proportion of savings potential for FY 2013-14, estimated energy savings potential for the state would be 9,467 million kWh.

Sr. No.	Consumer Category	Base Year (2007-08) (MU)		Energy Saving Potential as per NPC study 2009 (%)	Ref. Year FY 2013-14 (MU)			
		Consumption	Saving Potential			Consumption	Saving Potential	Average Cost of Supply (INR/kWh)
1	Municipal- Street Light	630	120	19%	801	153	5.18	4.53
	Municipal- Public Water Works	1600	400	25%	2177	544	5.18	3.98
2	Domestic	6200	1240	20%	9308	1862	5.18	4.09
3	Agriculture	10981	3294	30%	17132	5070	5.18	3.42
4	Commercial	1296	250	19%	5910	1140	5.18	7.59
5	Industries (HT and LT)	14700	1030	7%	9965	698	5.18	5.87
Total		35407	6334		45293	9467		

This policy proposes to focus on five major sectors such as Municipal, Domestic, Agricultural, Commercial and Industrial for improving the energy efficiency during the policy period. The key principles that have been followed while stipulating sector specific targets are:

- higher targets assigned to the sectors which offer higher energy savings potential;**
- higher targets to the sectors that offer lower revenue realization compared to average cost of supply;**
- sectors with higher government subsidy exposure;**
- sector specific technology interventions measures and commercialization aspects;**
- sectors which are expected to grow at higher rate during policy period.**

Sector wise energy savings target both during the policy period as well as annual as envisaged during under this policy proposed are as under:

Sr. No.	Consumer Category	Savings Target -Policy Period (Proportion of Energy Savings Potential)	Savings Target (MUs)					Savings Target - Policy Period (MUs)
			2014-15	2015-16	2016-17	2017-18	2018-19	
1	Municipal- Street Light	6.25%	1.14	1.53	1.91	2.29	2.67	9.54
	Municipal- Public Water Works	3.00%	1.09	2.18	3.27	4.35	5.44	16.33
2	Domestic	4.00%	3.72	9.31	14.89	20.48	26.06	74.46
3	Agriculture	3.00%	10.14	20.28	30.42	40.56	50.70	152.11
4	Commercial	3.00%	2.28	4.56	6.84	9.12	11.40	34.20
5	Industries (HT and LT)	1.05%	0.35	0.70	1.40	2.09	2.79	7.33
Total			18.73	38.55	58.73	78.90	99.07	293.97

The EE Policy for the state has proposed energy savings target of around **300 million kWh** electricity consumption and avoid around **70 MW** of generation capacity addition through fossil fuels.

2.5 POLICY TITLE, TERM, TENURE AND CONTROL PERIOD

This Policy shall be known as the “**Karnataka Energy Efficiency and Conservation Policy 2015-2019**”. This Policy shall come into effect from the date of its notifications in official gazette of the state government and shall remain in force until FY 2018-2019 or till such time any changes are made by the State Government.

3 GOVERNANCE & INSTITUTIONAL STRUCTURE

3.1 HIGH LEVEL PROGRAM APPROVAL AND MONITORING COMMITTEE FOR EE

The State Level Steering Committee formed vide. GO No. EN/348/NCE/2012 dated: 17.12.2012 for utilising State Energy Conservation Fund & also will review & monitor the progress of the state’s energy efficiency policy every year as well as at the end of every control period and take appropriate actions to achieve the policy objectives. It is proposed that GOK may consider appointing the same State Level Steering Committee to take up the roles & responsibilities assigned to HLPAMC-EE under this policy. The HLPAMC-EE comprising of the following members:

- Add. Chief Secretary, Energy Department - Chairperson
- Principal Secretary/ Secretary, Finance Department - Member
- Principal Secretary/ Secretary, Urban Development - Member

- Principal Secretary/ Secretary, PWD-Member
- Principal Secretary/ Secretary , Rural Development & Panchayat Raj – Member
- Managing Director, KPTCL - Member
- Principal Chief Architect, PWD – Member
- Managing Director, BESCOM - Member
- Managing Director, HESCOM - Member
- Managing Director, KREDL - Member Convener

The roles and responsibilities of HLPAMC-EE are given below:

Stakeholders	Roles and Responsibilities
High Level Program Approval Committee for EE	<ul style="list-style-type: none"> ➤ Enforcing implementation of EE Policy in the State; ➤ Approve overall EE & EC action plan submitted by Nodal Agency for the policy period; ➤ Evaluate and approve the annual action plan at the beginning of each financial year; ➤ Approve the fund required for implementation of EE & EC activities identified in action plan; ➤ Review and approval of the energy savings report submitted by Nodal Agency at the end of each financial year; ➤ Resolving policy level issues for accelerating deployment of energy efficiency programs; ➤ Review and approval of consolidated energy savings report for the entire policy period; ➤ Suggest necessary modifications and amendments in policy to state government;

3.2 NODAL AGENCY AND ITS ROLE AND RESPONSIBILITIES

Karnataka Renewable Energy Agency Limited (KREDL), as State Designated Agency, will act as a Secretariat to the High Level Program Approval Committee for EE. KREDL, as the State Designated Agency, will be the nodal agency for facilitating and implementing this policy. It will also coordinate with HLPAMC-EE for development and finalisation of energy efficiency/energy conservation action plan and development of report on status of action plan at the end of each financial year during the policy period.

The roles and responsibilities of nodal agency are given below:

Stakeholders	Roles and Responsibilities
State Designated Agency	<ul style="list-style-type: none"> ➤ Coordination with various sector specific responsible departments for getting necessary inputs for the development of EE&EC action plan; ➤ Development of EE&EC action plan (annual as well as for the policy period) in line with the policy; ➤ Estimation of fund requirement for implementation of EE & EC activities identified in

Stakeholders	Roles and Responsibilities
	action plan; ➤ Submission of EE & EC action plan to HLPAMC-EE at the beginning of each financial year for the approval; ➤ Responsible to facilitate for the implementation of energy efficiency and energy conservation programs in Commercial and SME Sectors ➤ Assistance to various departments for effective implementation of action plan; ➤ Allocation of funds to various departments for implementation of identified EE & EC programs from state energy conservation fund; ➤ Verification of energy savings reported by various sector specific responsible organizations; ➤ Consolidation of energy savings report submitted by all the Stakeholders at the end of each financial year and submission of the same to HLPAMC-EE for their approval; ➤ Collection of details & preparation of consolidated energy savings report for the entire policy period; ➤ Development of capacity building programs for all the stakeholders; ➤ Development of Rules & Regulations for ECBC enforcement and compliance; ➤ Communicate the achievements of the policy with all the stakeholders through organization of workshop;

3.3 POWERS AND DUTIES OF KEY STAKEHOLDER/STATE LEVEL ENTITIES/ DEPARTMENTS

The roles and responsibilities of key stakeholders are given below:

Stakeholders	Roles and Responsibilities
State Energy Department	➤ Notify the policy defining vision, objective and the policy period; ➤ Undertake administrative approval for fund requirement during policy period; ➤ Consider reduction in taxes and duties on energy efficient equipment; ➤ Amend and modify the policy as and when required;
State Distribution Utilities	Responsible for the implementation of energy efficiency and energy conservation programs in Domestic, Commercial and Agricultural Sectors;
State Electricity Regulatory Commission	Implementation of the EE policy and EE/EC programs by distribution utilities shall be guided by and governed under regulatory oversight. KERC may formulate suitable regulations, issue directions/orders to facilitate promotion of EE/EC in the state.
Local Bodies and Municipal Authorities	Responsible for the implementation of energy efficiency and energy conservation programs in the area of public street lighting and Public Water Works;

4 ENERGY EFFICIENCY AND CONSERVATION STRATEGY & INITIATIVES

4.1 SECTOR SPECIFIC POSSIBLE EE PROGRAM IDENTIFICATIONS

Under this policy, KREDL as the Nodal Agency, will continue to implement and upscale the energy efficiency and conservation projects initiated in the earlier Comprehensive Renewable Energy Policy for the period 2009-14. In addition, KREDL shall identify and develop new programs to accelerate the pace of development and deployment of energy efficiency and energy conservation measures to capture the untapped potential in various sectors of the economy.

KREDL shall develop a detailed **energy efficiency and conservation action plan** which will provide detailed roadmap for all activities envisaged in this policy. Some of these sector specific possible programs through which the energy savings target during policy period can be achieved, including but not limited to the following are listed below:

(1) Municipal Sector

- i. Replacement of inefficient street lighting lamps with new energy efficient technology such as LED or induction lamps;
- ii. Installation of smart energy savers and control systems in street lighting circuits at major cities;
- iii. Energy Audit of municipal buildings and implementation of identified energy efficiency measures;
- iv. Energy Audit of public water works and development of demonstration projects.

(2) Domestic Sector

- i. Replacement of existing inefficient ceiling fans with superefficient ceiling fans;
- ii. Replacement of Incandescent Lamps (ICLs) with LED lamp;
- iii. Replacement of existing refrigerator with four/five star labelled refrigerator;
- iv. Replacement of air conditioner with four/five star labelled air conditioner.

(3) Agriculture Sector

- i. Energy Audit and preparation for detailed project report for agriculture sector at the feeder level;
- ii. Replacement of existing inefficient agriculture pump sets with energy efficient pump-sets (four/five star rated pump-sets);
- iii. Installation of capacitor banks for dedicated transformer for agriculture consumers;
- iv. Replacement of existing inefficient pumping accessories with energy efficient/ISI marked pumping accessories.

(4) Commercial Sector

- i. Replacement of existing T12 FTL with energy efficient T5 FTL for government buildings;
- ii. Super-efficient ceiling fan replacement programs for government buildings;
- iii. Replacement of inefficient pumps in Government buildings with energy efficient star rated pump sets
- iv. Energy Audit program and implementation of identified energy efficiency measures for public and private sector;
- v. Chiller replacement/retrofitting, thermal storage programs for the private sector commercial consumer category.

(5) Industrial Sector

- i. Energy auditing of small and medium enterprises and identification of energy efficiency measures;
- ii. Development of technology specific demonstration project for various industrial clusters;
- iii. Organization of workshop for promotion of energy efficient technologies specific to various industrial clusters;
- iv. Development of innovative financial assistance scheme (interest free loan) for implementation of identified energy efficiency measures.

In addition to above mentioned sector specific programs, KREDL shall also initiate publicity and awareness programs to create awareness of energy efficiency and conservation measures among different classes of end users in the state of Karnataka.

Under this Policy, distribution utilities shall be responsible for the implementation of above mentioned programs in the domestic, commercial and agricultural sectors and seek the approval of the KERC for the activities and budgets. Municipal Corporations shall be responsible for the implementation of programs identified in the area of public street lighting as well as public water works. KREDL shall be responsible for facilitation to implement the programs identified for the industrial sector. The Government of Karnataka may provide the budgetary support for the implementation of above mentioned sector specific programs. In addition the government may support innovative programs and business models such as Energy Service Company Model or any other business model shall be encouraged for the implementation of identified programs. Detailed programs could be devised to encourage private sector participation and to arrange fund through corporate social funding arrangements, multilateral/bilateral agencies to support the targets sets for the five sectors.

4.2 NOTIFICATIONS / DIRECTIVES BY GOVERNMENT OF KARNATAKA

The Government of Karnataka has issued the following notifications/directives, so far, for mandatory use of energy efficient technologies and appliances by different consumer categories in the state.

- a) Mandatory use of Solar Water Heating Systems (SWHS);
- b) Mandatory use of Compact Fluorescent Lamps (CFL) in government buildings, aided institutions, boards and corporations;
- c) Mandatory use of BEE star rated pump sets where ever applicable for agriculture pumping;
- d) Mandatory use of electronic ballasts in government buildings, aided institutions, boards and corporations;
- e) Mandatory compliance with "energy conservation building code" (ECBC) by private and public commercial buildings with connected load \geq 100 kW or contract demand \geq 120 kVA or conditioned area \geq 500 square meters.
- f) These notifications shall also remain applicable during this policy period until issuance of the subsequent amendments by the Government of Karnataka from time to time. Under this policy, the Government of Karnataka, through KREDL, will review and evaluate the impact of these notifications and further explore the possibilities for expanding the scope of these directives/notifications.

Apart from this, KREDL will identify the similar directives/notifications to be issued by the Government of Karnataka to integrate the use of energy efficient technologies in the government driven / funded schemes that involve providing energy intensive infrastructure for the people of Karnataka. Some of these directives/notifications, including but not limited to the following, are listed below:

- a) Mandatory use of ISI marked accessories like starter, capacitor, foot valves, cables etc. used in agricultural pumping;
- b) Mandatory use/procurement of energy efficient lift irrigation pump-sets and bore well pumps for Ganga Kalyana scheme sponsored by the GoK;
- c) Mandatory use of LED lamps in government buildings, aided institutions, boards and corporations;
- d) Mandatory use of LED lighting systems and solar rooftop PV power generation modules in the fuel (petrol/diesel) pumping stations, allotted by the state run oil marketing companies;
- e) Mandatory use of LED lighting systems and solar rooftop PV power generation modules in bus stops and bus depots owned Karnataka State Road Transport Corporation (KSRTC);
- f) Mandatory use of energy efficient technologies in the housing projects undertaken by the Karnataka Housing Board (KHB), Karnataka State Police Housing Corporation (KSPHCL) and other entities undertaken by the Govt. of Karnataka;
- g) Mandatory use of energy efficient technologies in the housing projects, site/layout development undertaken by the Bangalore Development Authority (BDA)/

PWD/KRIDL/KPTCL/DISCOMs/KPCL/Development Authorities and other registered housing societies;

- h) Mandatory use of LED streetlights by all local bodies for all new / additional lamps.
- i) Amendment of building bye laws for enforcing the mandatory compliance with the ECBC by all commercial buildings within the city corporation limits of the state;
- j) Mandatory use of LED lamps in all new buildings and installations such as BMRCL metro stations etc.

4.3 FRAMEWORK FOR EVALUATION, MONITORING AND VERIFICATION

KREDL, as the Nodal Agency, shall regularly monitor the implementation of all the provisions of the policy.

KREDL shall prepare sector specific plan for evaluation, measurement and verification of savings from all energy efficiency programs initiated under this policy and submit the same to the various departments for implementation. These departments shall also undertake monitoring and reporting of the each energy efficiency programs initiated under this policy. KREDL, as the Nodal Agency, on its own or third party assigned by it shall undertake monitoring and verification of all the programs implemented under this policy. Under this policy, it is the responsibility of the sector specific departments to make available necessary data and information to KREDL or third party assigned by the KREDL to measure and verify the savings from the implemented energy efficiency programs implemented in their respective sectors. KREDL shall consolidate the detailed energy savings report at the end of each financial year and submit the same to HLPAMC-EE for their approval.

For effective implementation of this policy and delivery of the policy objective, the organization structure of the Nodal Agency, KREDL will be reviewed and strengthened appropriately by the Government of Karnataka.

4.4 GOVERNANCE FRAMEWORK AND ENFORCEMENT MECHANISM

High Level Program Approval Committee for Energy Efficiency (HLPAMC-EE) shall have the powers to enforce the provisions of this policy. HLPAMC-EE, in consultation with the Government of Karnataka, shall ensure issuance of necessary guidelines/directives in relation to the policy without loss of any time for mid-course correction, if required for smooth implementation of this policy.

5 FINANCING OF ENERGY EFFICIENCY PROGRAMS

5.1 FUND REQUIREMENTS AND POSSIBLE SOURCES FOR EE FINANCING

Under this policy, KREDL shall develop a detailed energy efficiency and conservation action plan in consultation with various departments. The energy efficiency and conservation action plan would include the details of the various EE programs, its objective, program implementation schedule, funding requirement, possible source of funding, expected savings, monitoring and reporting framework, responsible department, business model to be deployed and awareness campaign, etc. This action plan shall be developed for the entire policy period as well as annually and submitted to HLPAMC-EE for review and approval.

The estimated fund requirement to achieve the target set during the policy period is approximately INR 1,000 to 1,200 million. Under this Policy, the Government of Karnataka proposes that funding requirement identified in the energy efficiency and conservation action plan shall be met through Government Grant/Subsidy, Host/Responsible department's budget and private sector participation through design and development of innovative business models. The Government of Karnataka shall approve the annual budget and make provisions of allocating annual budget for the development of energy efficiency sector in the state as well as to achieve the target sets in the policy. The budgetary allocation shall be diverted to the concerned implementing agency for implementation of identified and approved energy efficiency projects specified under energy efficiency and conservation action plan.

In order to finance the various initiatives under this Policy, the State Government proposes that nodal agency or sector specific responsible departments may explore possible avenues for contributing to the fund:

- **Green cess:** Action shall be initiated to collect Rs. 0.05 per unit for Electricity supplied to all the industrial & commercial consumers through DISCOMs as Green cess. This has been proposed and levied in many other states in India including Gujarat, Maharashtra and Puducherry. Under the Comprehensive RE Policy for 2009-14, the Government of Karnataka had proposed establishment of green energy fund "Akshaya Shakti Nidhi" in order to facilitate renewable energy project financing and implementation of energy conservation and energy efficiency measures. It was proposed that 10 percent of total fund generated will be set apart as contribution to the State Energy Conservation Fund for energy efficiency related activities. Under this policy, it is also proposed to augment the State Energy Conservation Fund with a contribution of 10 percent of total fund generated annually from Akshaya Shakti Nidhi during the policy period upon operationalization.

5.2 POSSIBLE BUSINESS MODELS AND IMPLEMENTATION PLAN

This section outlines possible business models which State Nodal Agency or Responsible Department may utilize for the implementation of the identified energy efficiency programs under this Policy.

- Utility Driven Demand Side Management Program:** Under this Business Model, Distribution Utility shall identify the technology as well as targeted consumer categories based on the load research. Subsequently, Distribution Utility shall design and develop proposed energy efficiency programs and submit the same to the Regulatory Commission for the approval. Distribution Utility shall also request Commission to allow recovery of the cost association with the implementation of the proposed energy efficiency programs through Annual Revenue Requirement. The Distribution Utilities will also ensure that program document submitted to the Commission adhere to the DSM Regulations and guidelines issued by the Commission if any.
- Government Grant/Subsidy Based Business Models:** Certain electricity consuming sectors such as Domestic, Agricultural, Municipal etc. where average realization is lower than the average cost of supply. The State Government may consider financial support to those energy efficiency programs aimed at such category of consumers which are receiving tariff subsidy from the State Government. Under this business model, Distribution Utility instead of recovering the entire amount through annual revenue requirement, may leverage a part of the government subsidy for the development and implementation of identified energy efficiency programs for such consumer categories.
- Energy Services Company Based Business Model:** An Energy Service Company (ESCO) is a professional business providing entity with a broad range of comprehensive energy solutions including designs and implementation of energy savings projects, energy infrastructure outsourcing and risk management. Under this business model, sector specific responsible department can engage Energy Service Company for implementation of identified energy efficiency programs through competitive bidding process. Subsequently, they will sign the agreement with ESCO for installations, operation and maintenance of energy efficient appliances along with repayment of programs costs linked with resultant energy and load reductions.

The implementation will be undertaken by the ESCO by investing the entire upfront capital cost of energy efficiency programs. ESCO will implement energy efficiency programs and develop and maintain the system to ensure energy savings during the agreed time frame with proper Monitoring & Verification guidelines prescribed under the program. Sector specific responsible department will pay the ESCO based on the energy savings and load reductions achieved through implementation of programs.

6 PROCEDURES FOR REVISIONS & AMENDMENTS

6.1 REMOVAL OF DIFFICULTIES

If any difficulty arises in giving effect to this policy, the HLPAMC-EE, is empowered to issue clarifications as well as interpretations to such provisions, as may appear to be necessary for removing the difficulty either on its own motion or after hearing those parties who have represented for change in any provisions.

Notwithstanding anything contained in these resolutions, the provisions of the Energy Conservation Act 2001, Electricity Act 2003 and the applicable regulations issued by KERC from time to time shall prevail for the purpose of implementations of this policy.

6.2 POWERS TO RELAX / AMEND

The Government of Karnataka will have power to amend/review/relax/interpret any of the provisions under this policy as and when required.

6.3 PROCEDURE FOR MODIFICATIONS AND AMENDMENT OF ANY SPECIFIC PROVISION

Sector specific responsible organizations will suggest the modifications/amendment in policy to the Nodal Agency. The Nodal Agency will study the suggested modification and amendment and draft the appropriate modification and amendment if any in policy and submit to HLPAMC-EE for approval. HLPAMC-EE will examine the draft modification and amendment and suggest their recommendation to Government of Karnataka for modifications and amendment in policy. The Government of Karnataka will modify/amend the policy as per recommendation upon due consultation process.