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THE ANDHRA PRADESH GAZETTE

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No.337 AMARAVATI, MONDAY, MARCH 11, 2024 **G.4016**

NOTIFICATIONS BY GOVERNMENT

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GOVERNMENT OF ANDHRA PRADESH
ABSTRACT

Energy Department – Andhra Pradesh State Energy Conservation Mission (APSECM) – Andhra Pradesh Energy Efficiency and Energy Conservation Policy 2023-2028 - Energy Efficiency measures covering various demand sectors of the State in further enhancing Energy Efficiency & Energy Conservation in the State Adoption of EE & EC policy to attain State and National goals for sustainability of the environment – Orders – Issued.

ENERGY (POWER.II) DEPARTMENT

G.O.Ms.No.24 Dated:06/03/2024.
Read the following:

O R D E R:

As part of sustained efforts towards climate change goals of the country to reduce carbon emissions by one billion tonnes by 2030, achieve “Net Zero” by 2070 and enhance energy efficiency in the State by tapping estimated energy saving potential of around 20 per cent out of the total annual electricity demand with the involvement of all key sectors and stakeholders, the Government of Andhra Pradesh hereby notifies “Andhra Pradesh Energy Efficiency and Energy Conservation Policy 2023-2028” for promotion of energy Efficiency initiatives and to ensure energy security in the State.

2. The policy presents Andhra Pradesh’s ambitious objective to lead as India’s most energy-efficient economy by 2028. It focuses on lowering energy use through cost-effective and potential saving approaches for sectors like Domestic, Industry & Commercial, Agriculture, Municipality and Transport during the policy period of five years. The policy suggests adoptable energy efficiency measures, implementable financing mechanisms and strengthening of institutional capacity.

3. The Andhra Pradesh Energy Efficiency & Energy Conservation Policy 2023-28 intends to put in place framework for identification, development, implementation, monitoring and verification of Energy Efficiency programmes to be undertaken in the State to tap substantial energy savings potential and to act as an enabler for adoption of Energy Efficiency and Energy Conservation measures through increased public participation & involvement by creating necessary awareness. This effort positions the State as a front runner in executing large-scale Energy Efficiency initiatives.

4. This Policy shall come into force from the date of its Publication in the Official Gazette.

Andhra Pradesh Energy Efficiency and Energy Conservation Policy 2023-2028

1.PREAMBLE

How sustainable an economy is, depends to a large extent on how efficiently it uses energy. Energy Conservation and Energy Efficiency improve the State's competitiveness, strengthen consumers' purchasing power, reduce dependence on energy imports, and are the key to achieving climate targets.

The Andhra Pradesh State Government has a potential to save around 20% of total annual energy demand, viz.13547 million units equivalent to Rs. 9835 Crores, and it has set itself the goal of making the State the most energy-efficient economy in the country by 2028. The guiding principle underlying AP's energy conservation policy towards this goal is 'save before generate'. This implies that the priority is on reducing energy consumption wherever it makes economic sense and has huge savings potential. Once these approaches have been pursued as far as possible, the energy mix is to be optimized in sector coupling to meet the energy needs of the Domestic, Commercial, Transport, Agriculture, Industry, Power sectors. The State can also improve its ranking in the annual State Energy Efficiency Index (SEEI) released by the Minister of Power, GoI.

Energy conservation means saving energy and conserving even as value-added increases. The benefits of energy conservation and energy efficiency are manifold—lower energy requirements, improved air quality, reduced greenhouse gases, energy security, and deferred infrastructure costs. This reduces energy costs and gives State, public & private organizations and other stake holders a valuable cost advantage. Investments in energy conservation and efficiency measures strengthen domestic value creation, secure jobs, and increase the security of supply. In addition, focusing on energy efficiency opens up new export and growth in markets. Numerous studies document the prevalence of economically attractive opportunities for energy savings. The failure to implement these opportunities indicates shrugged market and other barriers to efficiency. Government policies are designed to target these barriers and enable the benefits of energy efficiency to be realized.

At the State level, one of the strengths of energy-efficiency Policy is its ability to offer broad-impact yet more finely tailored mandates and incentives.

To provide for efficient use of energy and its conservation and matters connected therewith or incidental thereto, the Energy Conservation Act (EC Act), 2001 (and subsequent amendments in 2010 and 2017) was enacted in Parliament with an overall objective of providing the necessary legal framework for promoting the efficient use of energy and its conservation. The Government of India established the Bureau of Energy Efficiency (BEE) on 1st March 2002 under the EC Act, 2001, to implement strategies and programmes that reduce the energy intensity of the Indian economy.

As part of this Act, all States were directed to establish a State Designated Agency to oversee and lead the implementation of energy conservation activities at the State level. The State has designated the Andhra Pradesh State Energy Conservation Mission as the "State Designated Agency (SDA)" to the Bureau of Energy Efficiency (BEE), Ministry of Power, GoI, to initiate, coordinate, regulate and enforce all necessary actions contained in the Energy Conservation Act, 2001 within the State for effective implementation of the Energy Conservation (EC) and Energy Efficiency (EE) activities.

Initially, NREDCAP was the nodal agency in Andhra Pradesh to implement the EC Act, including the PAT and MTEE schemes. Subsequently, the Government of Andhra Pradesh, by the (G.O.Ms.No.38), Dated 26-09-2012, ordered the constitution of a State Energy Conservation Mission for effective monitoring of Energy Conservation & Efficiency activities.

The energy-saving potential of the country is estimated to be 86.9 Mtoe by 2031 (in the moderate savings scenario). India's target energy emissions in 2030 in absolute terms should be less than or equal to 6807 MtCO2e. The achievement in emission-intensity (energy and non-energy) reduction by 2030 is estimated to be 36%. The BEE, in its communication vide meeting chaired by Hon'ble Minister for Power with Senior Officers of the States / UTs for discussing the actions required from the States to achieve the Energy Transition goals of India dated 9th February 2022 has indicated targets of 6.68 Mtoe of energy savings by 2030 for the State of Andhra Pradesh, in line with the Government of India's roadmap of reducing the total projected carbon emissions by 1 billion tons till 2030 and achieving the net zero emissions by 2070 along with reducing Carbon intensity to less than 45% by 2030.

Considering this, it is necessary to promote the use of new and latest technologies for energy conservation. Hence, institutions and citizens should be encouraged to adopt a culture of energy conservation and use energy efficiently in all spheres of activity. All government/ semi-government departments and institutions should take the lead in their area of operation to conserve energy and initiate programmes to create opportunities for EC and EE.

The State has also improved its performance in energy efficiency and energy conservation over the years. With implementation of LED bulbs under UJALA scheme and LED Street lighting in ULBs and Gram Panchayats, the State achieved estimated energy savings of around 2033 Million units. By implementation of Perform, Achieve & Trade (PAT) scheme in Industrial sector, the State has saved around 1.16 Million ton of oil equivalent (Mtoe) till PAT Cycle-5. The recently published State energy efficiency index by Alliance for Energy Efficient Economy (AEEE), AP is ranked 1st under the "**Group II**" category. Andhra Pradesh, through the SDA, i.e., the APSECM, shall ensure the implementation of all BEE schemes specified from time to time, such as:

1. Standards and Labeling program for energy equipment (S & L Program)
2. National Mission for Enhanced Energy Efficiency, PAT scheme for 13 types of large-scale industries.
3. Energy Conservation Building Code for Commercial & Residential Buildings
4. Demand Side Management for Agriculture, Municipal, SME and Discoms
5. E-Mobility
6. Other Programmes currently being implemented by BEE

Nationally Determined Contribution (NDC) under the Paris Agreement includes targets to reduce the emissions intensity of GDP by 33–35% by 2030 from 2005 levels. An international treaty on climate change held in Paris, adopted in 2015, pledged the sink 2.5-3 GTons of CO_2 by 2030. During the recently concluded COPs viz. COP26 COP27 and COP28, the union government have pledged to fight climate change and rising temperature levels and specifically also pledged to reduce 1 billion tonnes of projected emissions from now till 2030, achieving a carbon intensity reduction of 45% over 2005 levels by 2030 and achieving net-zero by 2070 as part of enhanced commitment to NDC. These new pledges go significantly beyond its current nationally determined contribution (NDC) under the Paris Agreement. Andhra Pradesh is committed to increasing green cover to 33% of its area from the current level of 23%.

The APSECM shall support BEE, New Delhi, in implementing the central government programs in Andhra Pradesh. In addition, there is still significant

scope for the design and implementation of EC and EE activities in the areas currently not covered by the BEE programmes. The framing of the Andhra Pradesh EC & EE policy would facilitate EC and EE activities across the State for a targeted improvement in conserving energy and improving the efficient use of energy for sustainable development. The practical implementation of EC and EE activities would help save on energy consumption and reduce the expenditure on energy on the State exchequer. To accelerate the effective implementation of EC and EE initiatives, the Government of Andhra Pradesh has supported and approved the dedicated "**Andhra Pradesh Energy Conservation Policy 2023-2028**". The Action Plan as suggested in the Energy Efficiency Action Plan for Andhra Pradesh shall be adopted under the policy implementation.

2. POLICY

The "Energy Conservation and Energy Efficiency Policy 2023-2028" is a policy for the State of Andhra Pradesh to encourage and promote the large-scale deployment of energy conservation and efficiency measures in the State. This policy ensures efficient energy usage directly catering to the local and national economy and addresses the requirement energy deficient sectors in the region by amplifying energy availability in the deficient areas. This also helps boost the local economy and strengthen energy security in the State through various Central and State Government initiatives. The energy-saving strategy will optimize per capita power consumption with modern policy directives.

The policy aims to bring a unified platform and recommend having an integrated approach to address energy efficiency and energy conservation to all the stakeholders. The policy addresses the sectors like Domestic, Industry & Commercial, Agriculture, Municipality and Transport to implement and enforce EE and EC measures effectively in the State.

The policy also intends formation of a steering committee headed by the Chief Secretary and a technical committee headed by the HODs of the relevant sector, defining roles and responsibilities of the steering committee and technical committee, providing additional powers and duties to the stakeholders, promoting awareness and organise training programmes, attract investments, devising innovative financing and market transformational strategies are a few steps taken to enhance EE & EC activities in the State.

2.1. VISION

1. To harness the potential of energy efficiency and energy conservation in Andhra Pradesh to benefit the energy stakeholders and the environment.

2. Establish Andhra Pradesh as a pioneering State in large scale deployment of Energy Efficiency measures across sectors like Domestic, Industry & Commercial, Agriculture, Municipality and Transport for ensuring energy security and promoting Energy Conservation for sustainable growth.

3. Ensuring Sustainability through the profitable and efficient use of resources to provide sustainable energy supply to consumer sectors like Domestic, Industry & Commercial, Agriculture, Municipality and Transport.

4. Create an effective eco-system for consumer sectors like Domestic, Industry & Commercial, Agriculture, Municipality and Transport to normalize organic adoption of EE and EC practices towards a better sustainable society.

5. Develop Andhra Pradesh as the most energy-efficient and less energy-intensive State.

2.2. OBJECTIVE

The objectives of the policy are as follows:

1. To effectively implement Energy Conservation Act 2001 in word and spirit tailored to the applicability of the State.

2. To put in place an overarching framework for identification, development, implementation, monitoring and verification of energy efficiency programmes to be undertaken in the State to tap substantial energy savings potential;

3. To supplement national level efforts for implementation of various energy efficiency and energy conservation programmes at the State level, initiated by the Ministry of Power, Government of India and in meeting climate targets;

4. To lay down the framework for policy implementation and define the roles and responsibilities of various stakeholders;

5. To promote research and development in the field of energy conservation & energy efficiency

6. To act as an enabler for the adoption of Energy Efficiency and Energy Conservation measures through increased public participation & involvement by creating necessary awareness.

2.3. SCOPE

This policy proposes to focus on consumer sectors like Domestic, Industry & Commercial, Agriculture, Municipality and Transport for improving the energy efficiency during the policy period for the following sectors:

1. Energy Intensive Sectors;
2. Electricity consumer segments that offer lower revenue realization as compared to the average cost of supply;
3. Sectors with higher government subsidy exposure;
4. Sector-specific technology interventions measures and commercialization aspects;
5. Sectors are expected to grow at a higher rate during the policy period.
6. Sectors operating at lower EE/more enormous scope of EC is there.

In line with the broader scope mentioned above, the policy covers the following scope:

1. Adoption of EE measures:

   a. To complement supply and demand-side strategies to avoid, reduce, or postpone investments in generation, transmission and distribution infrastructure by slowing supply shortfall and demand growth.
   b. Energy audit: Home energy audit, IGEA in necessary sectors
2. Financial Mechanisms:
   a. Financial assistance
   b. Incentives Mechanism
   c. Demand Side Management: To control, reduce, influence electricity demand and electricity consumption through the implementation of suitable energy efficiency, energy conservation measures and energy efficiency technology in high energy consumption sectors;
   d. To reduce greenhouse gas emissions, lower the overall cost of electricity to consumers by economic and efficient use of resources.
3. Institutional Capacity:
   a. Technical training programmes to minimize the technical losses in electricity generation, transmission and distribution by energy conservation measures.
   b. Create a clear communication strategy with adequate budget allocations for Awareness programmes/EC/EE topics to be included in the curriculum conducted at Institutions such as schools, colleges, polytechnics, Industrial Training Institutes, etc.
   c. Awareness/ Capacity building programs sector-wise to consumers

2.4. POLICY TITLE, TERM, TENURE AND CONTROL PERIOD

This policy shall be known as the "Andhra Pradesh Energy Conservation and Energy Efficiency Policy 2023-2028". This policy shall come into effect from the date of its notification from the State government and shall remain in force until FY 2027-28 or until any changes are made to the policy by the State Government.

2.5. IMPLEMENTATION STRATEGY

1. Incentives shall be made available for innovative mechanisms in Energy Efficiency and Energy Conservation
2. (Additional weightage) Priority shall be given to the most energy-efficient equipment in public procurements
3. Manufacturing of Energy Efficient and allied equipment in Andhra Pradesh shall be given incentives (which shall include Capital Subsidies, SGST reimbursements, power tariff subsidies as notified from time to time, etc.
4. Existing self-employment schemes notified by the State Government shall be extended to provide financial assistance for businesses in energy efficiency and energy conservation for commercial purposes.
5. APSECM shall facilitate dovetailing with Govt. of India (GoI) schemes and encourage State stakeholders to avail of benefits available under GoI schemes.
6. Adoption of EE and EC at the Institutional Level shall be promoted starting with Government entities. Incentives and awards shall be given to Government departments and officers for adopting and championing energy conservation
7. The Energy Conservation cells created in each government office in accordance with G.O.Rt.No.89 dated 5th November 2020 shall guide and

mentor the government department in energy efficiency and conservation. Further, the cells also shall draw up Annual Budgets against targeted savings for their respective office (Establishment/ Buildings). They shall report the progress periodically to the centralized monitoring team in APSECM and shall be mobilized to maintain a dashboard of energy efficiency and conservation activities.

8. APSEEDCO incorporated vide G.O.Ms.No.18, dated 1st June 2016 shall aggregate the EC budgets and EC activities proposed by EC cells in each government office and approved by technical committees. APSECM shall facilitate Access, Avail & mobilize the funds, including but not limited to facilitating Bilateral funding.

   To enable the effective implementation of the policy and its objectives, the policy envisages a Two-Level Strategy, one for Review and Monitoring for the implementation of the policy and the other for technical support and making recommendations to the steering committee:

   - State Level Steering Committee
   - Technical Committee for All Major Sectors

It is proposed that GoAP will constitute a State Level Steering Committee (SLSC) for policy support, coordination and monitoring of various EC and EE projects/programs/schemes/activities in the State. This committee will review and monitor the progress of the State's energy conservation & efficiency policy every year as well as at the end of every control period (Quarterly-3 months) and take appropriate actions to achieve the policy objectives. The SLSC-EC & EE shall comprise the following members:

1. Chief Secretary (Chairman)
2. Special Chief Secretary - Energy, (Vice-Chairman)
3. CEO/SECM – Member/Convener
4. CMD, APTRANSCO – Member
5. CMD, APEPDCL – Member
6. CMD, APSPDCL – Member
7. CMD, APCPDCL - Member
8. Commissioner, PR & RD – Member
9. Commissioner, Director Higher Education – Member
10. Commissioner, Agriculture – Member
11. Commissioner, Endowments – Member
12. Commissioner, Technical Education – Member
13. Commissioner, MA & UD Department – Member
14. Commissioner, Industries – Member
15. Commissioner, Transport – Member

The State Level Steering Committee (SLSC) shall strategize, monitor, and review the AP EC Policy implementation through the SECM.

The roles and responsibilities of the State Level Steering Committee on EC&EE are as given below:

- Provide strategic directions to the departments for the effective implementation of the Andhra Pradesh EE-EC Policy 2023-2028
- To assess the proposals submitted by technical committee/ departments to ensure appropriate budget allocation.

- Facilitate the availability of necessary annual budget exclusively for EE and EC activities to all the departments from GoAP every year.
- To set necessary targets in consultation with the State Designated Agency of BEE, GoI viz. APSECM.
- Resolve policy level issues for accelerating the deployment of energy efficiency programs;
- Facilitate inter-departmental coordination for accelerating the deployment of energy efficiency programs;
- Suggest necessary modifications and amendments in the Policy to State government;
- Review and monitoring of schemes implemented and consolidated energy savings achieved for the entire policy period;
- Facilitate the promotion of Research and Development in Energy Efficiency and Energy Conservation.
- Facilitate the seamless implementation of the following energy efficient measurers in various sectors across the State.
    - Energy Conservation Building Code (ECBC) for Commercial Buildings
    - Eco Niwas Samhita (ENS) for Residential Buildings
    - Perform Achieve and Trade (PAT) for Designated Consumers (Energy Intensive Industries)
    - Agriculture and Municipal Demand Side Management (Ag & Mu DSM)
    - Standards and Labeling scheme
    - Demo Projects Implementation
- Guide the implanting Agencies regarding the adoption of the implementation strategies;
- Guide the implementation of the policy

The steering committee shall convene a meeting at least twice a year with a frequency not more than six months.

A Technical Committee shall be formed in all the identified consumer sectors like Domestic, Industry, Commercial, Agriculture, Municipality and Transport to plan and implement EC and EE measures. The primary role and responsibility of the Technical Committee shall be as follows:

- The Technical Committee of a Sector shall be headed by the Heads of the relevant department and shall have all the concerned Section heads as Industry Experts, Academicians as Members and one representative from APSECM as coordinator.
- Identify sector-wise benchmarks on energy performance (to be identified/ designed and current/ past five years performance indices to be recorded). These benchmarks could be from within the State, other States, or even International, depending on existing performance levels.
- Fixing specific annual targets for improvements vis a vis an action plan of implementation of various schemes / activities with target dates
- Identifying the total funding requirements and propose a suitable financial model for implementing the scheme / activity and put up the same for approval of the Steering Committee
- Quarterly Review Meetings to monitor the implementation status of various schemes as well as a review of actual benefits as accrued from implemented schemes
- All the technical committees shall have a coordinator from APSECM to ensure compliance with various approved schemes as well as to put up

the progress of approved schemes to the steering committee for further review, perusal and guidance

This policy also acts as a guiding principle for data collection and monitoring related to all energy-efficient and energy conservation activities in every government department, which shall be the key responsibility of the technical committee. As deliberated in 2.5 (7) of respective department or category, the EC Cells may be clubbed to be considered as a technical committee for the ease of implementation.

2.6. STATE ENERGY CONSERVATION AWARDS:

Annual sector / organization wise awards shall be distributed to various sectors / organizations for top / consistent performers based on exceeding / achieving the targeted performance parameters. Separately innovation awards shall be also be given to organizations bringing in stellar performance parameters by incorporating innovative designs / models / technologies / approaches to achieve substantial performance improvements.

3. MEASURES

The centerpiece of this Energy Conservation Energy Efficiency policy 2023-28 is the Action Plan for saving energy on all fronts. The Action Plan aims to reduce final energy consumption in all relevant sectors, i.e., buildings, industry, agriculture and transport. Across these sectors, particular importance is attached to reducing energy demand in heating and cooling, which accounts for significant energy consumption in the State. The majority of the measures and instruments listed in the Action Plan reduce energy consumption and carbon emissions as a direct result.

Energy Conservation Energy Efficiency policy 2023-28 addresses challenges, fields of action, and instruments that are sector-specific and important across different Sectors.

3.1. BUILDINGS

The Buildings sector include domestic and commercial buildings. The Domestic sector accounts for around 27.5% of total final electricity consumption in Andhra Pradesh, and the commercial buildings account for (along with industry) 35% of total electricity consumption. This means that it has a key role in the energy transition and mitigating climate change. The potential for reducing energy demand and generating heating and cooling from renewables rather than fossil fuels is high. Andhra Pradesh has taken account of this fact, placing a particular focus on ensuring that energy consumption in the building sector is reduced in an affordable, economical, sustainable and socially equitable manner. This process is being carried out as part of the ECBC and ENS framework.

Table 1: Buildings Share of Electricity Consumption

Sector	% of Electricity consumption
Building Sector	27.5%
Commercial & Industry	41.5%

This policy also aims to leverage the potential of using local energy sources and implement Energy-efficient measures in heating, cooling and maintaining

thermal comfort in the domestic segment. Domestic consumers shall be encouraged to use renewable energy like solar rooftops, solar water heaters etc., for various domestic applications. Here, the priority is to reduce consumption without compromising on lifestyle.

In its National Action Plan for Climate Change, the Union Government has adopted numerous, wide-reaching measures to improve energy efficiency in the building sector. These include, among other things, the ECBC code, the star rating of appliances and subsidy for LED lighting. Energy Conservation Building Codes for Residential segments are being further developed as energy standards for the purpose.

3.1.1. EXISTING LEGISLATION

- EC ACT, SECTION 15: Direct the designated consumers to comply with energy audit requirements, furnish requisite data at a requisite time, and Amend the Energy Conservation Building Codes to suit regional and local climatic conditions. Notify Energy Conservation Building Codes concerning the use of energy in the buildings. Direct the designated consumers to comply with the Code and/or energy audit requirements and furnish requisite data at a requisite time.
- EC ACT, SECTION 17: Power of inspection of buildings qualified as Designated consumer to check compliance with requirements of the EC Act.
- EC ACT, SECTION 18: Regulation of norms for energy consumption standards in any building. Regulation of the energy consumption standards for equipment and appliances.
- GO 119 of the Govt. of Andhra Pradesh, dated 28.03.2017 by the Municipal Administration and Urban Development Department on Model Building Bye-Laws 2016 of GoI – Andhra Pradesh Building Rules, 2017.
- GO 180 of Govt. of Andhra Pradesh, dated 01.10.2020 by Municipal Administration & Urban Development Department – The Andhra Pradesh Building Rules, 2017 – Certain amendments.

3.1.2. SUGGESTIBLE ADOPTION OF EE MEASURES

The Energy Conservation and Energy Efficiency Policy 2023-2028 envisages

- Replace existing Incandescent Lamps (ICLs)/ Tube lights/ CFLs etc., with LED lamps & existing low-efficiency ceiling fans with super-efficient/BLDC ceiling fans.
- Replace the existing air conditioner (includes cassettes and floor-standing types), refrigerator, washing machines & colour Televisions with four/five star labelled equipment.
- Keeping air conditioners' temperature setting at 24 degrees centigrade & above is recommended as each degree rise in temperature results in a 6% saving in energy.
- Use of task lighting.
- Clean cooking using induction cookers is recommended.
- Adoption of the "Eco Niwas Samhita – Energy Conservation Building Code for Residential" buildings directives.
- Effective Implementation of ECBC for Commercial Buildings
- Awareness and Capacity Building
- Energy auditing in existing buildings

- Use of Solar Water Heating Systems (SWHS) in Hospitals, Govt. offices, Hotels, Commercial buildings
- Chiller (air-cooled) replacement/retrofitting with water-cooled chiller with higher COP (Coefficient of Performance) and IPLV (Integrated Part Load Value) values
- The usage of DG sets with better specific fuel consumption in commercial buildings. DG sets in buildings greater than 20,000 m2 (Built-Up Area) BUA shall have a minimum three-star rating.
- Use of Energy Efficient BEE 4/5 star rated Distribution transformers.
- Energy Management System (EMS) for commercial buildings whose annual electricity consumption bill more than Rs.25 lakhs.

3.1.3. FINANCIAL MECHANISMS

- Providing financial incentives such as soft loans, subsidies, rebates for procurement of EE appliances.
- Incentive mechanism to promote ECBC+ and super ECBC & ENS (Residential Buildings)
- Promotion of sustainable building materials for construction.
- Promotion of ESCO model of projects implementation.

3.2. INDUSTRY & COMMERCIAL

Industry & Commercial (including trade and services account) for 41.5% of Andhra Pradesh Electricity consumption. Therefore, it is crucial to intensify efforts to increase energy efficiency in this sector significantly. The National Action Plan for Climate Change 2008 and enhanced targets in 2019 has already prepared the ground for this.

3.2.1. EXISTING LEGISLATION

- EC ACT, SECTION 15: Power of State Government to enforce certain provisions for efficient use of energy and its conservation and direct the designated consumers to comply with energy audit requirements and furnish requisite data at a requisite time.
- EC ACT, SECTION 17: Power of inspection of industries and buildings to check compliance with requirements of the EC Act.
- EC ACT, SECTION 18: Regulation of norms for process and energy consumption standards in any industry. Regulation of the energy consumption standards for industrial equipment and appliances, including motors.
- EC ACT, SECTION 52: In exercise of powers conferred under the Energy Conservation Act, 2001 (52 of 2001), the Central Government has made the following rules, namely:- Energy Conservation Rules, 2012, Energy Consumption Norms and Standards for Designated Consumers, Form, Time within which, and Manner of Preparation and Implementation of Scheme, Procedure for Issue of Energy Savings Certificate and Value of Per Mtoe of Energy Consumed
- Initiatives and programs to be established by the State to advance EE in MSME (Micro, Small and Medium Enterprises) Sector. E.g. workshops, subsidies for energy audits, demo/pilot projects, other EE projects

3.2.2. SUGGESTIBLE ADOPTION OF EE MEASURES

The Energy Conservation and Energy Efficiency Policy 2023-2028 envisages

- Replace existing low-efficiency lighting like T5/T8/T12 FTL, SV/MV lamps, etc., with energy-efficient, LED lamps & existing low efficient ceiling fans with super-efficient/BLDC ceiling fans.
- Replacement of low efficient pump-sets with Energy-efficient star rated pump sets.
- Chiller (air-cooled) replacement/retrofitting with water-cooled chiller with higher COP (Coefficient of Performance) and IPLV (Integrated Part Load Value) values.
- Demand Side Management (DSM) measures the power supply utilities initiated to encourage the consumer to use energy more efficiently by modifying their electricity consumption patterns, both with respect to the time and extent of electricity demand, such as Time of Day (TOD) tariffs for HT consumers.
- Use of Energy Efficient BEE 4/5 star rated Distribution transformers
- Awareness and Capacity Building
- Energy auditing in industries having Contract maximum demand of 1000 kVA or more.

3.2.3. FINANCING MECHANISM

- Providing financial incentives such as soft loans, subsidies, rebates for procurement of EE appliances.
- Preference in Government procurement from industries that adopted EE measures and participation in the PAT scheme

3.3. AGRICULTURE

Agriculture accounts for a total of 30% of Andhra Pradesh Electricity consumption. Therefore, it is crucial to intensify efforts to increase energy efficiency in this sector significantly. Energy consumption in agriculture is mainly through irrigation pumps and other electrical farming equipment.

Table 2: Agriculture Share of Electricity Consumption

Sector	**% of Electricity Consumption**
Agriculture	24.2%

3.3.1. EXISTING LEGISLATION

- EC ACT, SECTION 18: Regulation of the energy consumption standards for agricultural pumping.
- EC ACT, SECTION 26: Impose penalties for non-compliance with either Central or State Government energy conservation Regulations.

3.3.2. SUGGESTIBLE ADOPTION OF EE MEASURES

The Energy Conservation and Energy Efficiency Policy 2023-2028 envisages

- Energy Audit and preparation of detailed project report for the agriculture sector at the feeder level.
- Mandatory installation of 5 stars rated pumps while releasing any new service connection from Discom for agriculture pumps

- Replace existing low-efficient agriculture pump sets with energy-efficient pumpsets (four/five star rated pumpsets).
- Use drip irrigation for specific crops. Drip systems can conserve up to 80% of water and reduce pumping energy requirements.
- Replace existing low-efficient pumping accessories with Energy-efficient/ ISI marked accessories.
- The introduction of Smart Meters will help consumers monitor and optimize energy use.
- Awareness and Capacity Building
- Encourage the use of automatic power factor correction capacitors for agriculture motors

3.3.3. FINANCING MECHANISM

The Operating Expenditure (OPEX) financing model for the agriculture sector is the right way to enhance energy efficiency in the public sector. Based on the irrigation pump-set needs and ongoing Kusum scheme, the OPEX investors can finance EE implementation for the Agricultural sector, and revenue generation can be made from savings from the EE project.

3.4. MUNICIPAL SECTOR

Municipal Sector accounts for 6% of Andhra Pradesh Electricity consumption. Therefore, it is crucial to intensify efforts to increase energy efficiency in this sector significantly. In its National Action Plan for Climate Change, the Union Government has adopted numerous, wide-reaching measures to improve energy efficiency in the sector. These include replacing normal street lights with LED lighting, replacing inefficient pumps with EE pumps in drinking & sewage pumping segments etc.

Table 3: Municipal Sector Share of Electricity Consumption

Sector	**% Share of Electricity Consumption**
Municipal Sector	6%

3.4.1. EXISTING LEGISLATION

- EC ACT, SECTION 18: Regulation of the energy consumption standards for street lighting and drinking and / or wastewater pumping.
- EC ACT, SECTION 26: Impose penalties for non-compliance with either Central or State Government Energy Conservation Regulations.
- EC ACT, SECTION 27, 28, 29: Power to adjudicate the penalties imposed for non-compliance.
- EC ACT, SECTION 57: Power of State Government to make rules, by notification, for carrying out the provisions of EC Act and not inconsistent with the Rules, if any, made by the Central Government.

3.4.2. SUGGESTED ENERGY EFFICIENCY MEASURES

The Energy Conservation and Energy Efficiency Policy 2023-2028 envisages that installing any new street lights, it shall be made mandatory for all Municipalities / Municipal Corporations/ Development Authorities/ Gram Panchayats/ Zilla Parishads / Public Works Department as well as all Government/Semi-

Government departments to install only Energy efficient LED street lights. In addition, the following needs to be adopted by the Municipal Sector.

The policy also envisages the following

- Mandatory use of Sunlight sensor switches / almanac timer for switching OFF/ON the street lights of all Municipalities & Municipal Corporations in the State.
- Installation of street light with Supervisory Control and data acquisition (SCADA)
- Mandatory use of Energy Efficient (BEE 4/5 star rated) pump sets for drinking & sewage water supply in City/town/ Grama Panchayat under MA&UD, Panchayat Raj, RWS & Sanitation Department.
- All Municipal Corporations, Municipalities (ULBs), Gram Panchayat, RWS & Sanitation dept., should carry out investment grade in the State whose annual electricity bill is more than Rs.25 lakhs energy audit through APSECM/BEE empanelled energy auditor companies within next two years.
- Implementation of measures recommended in the energy audit report shall be mandatory for all concerned. Accordingly, MA&UD, Panchayat Raj, RWS & Sanitation Department shall notify the order separately.
- Awareness and Capacity Building

3.4.3. FINANCIAL MECHANISMS

The OPEX financing model for the Municipal sector is the right way to enhance energy efficiency in the public sector. Based on the Municipalities needs, the OPEX investors can finance EE implementation and revenue generation can be made from guaranteed savings accruing from the EE project.

3.5. TRANSPORTATION SECTOR

Annual technical efficiency gains in the transport sector averaged over 1 percent of final transport energy demand since 2015. However, this gain has been offset primarily by users' purchasing decisions and behavior. For example, while passenger vehicles available in most markets are some of the most technically efficient in history, people are using more energy-intensive modes of transport, buying larger vehicles and travelling with fewer people per vehicle, slowing the efficiency improvement rate.

The Transportation sector has undergone improvements leading to technical efficiency in motor vehicles. However, with the shift in behavioural patterns, passenger transport remains an energy-intensive sector. While technical efficiency has been improving faster in recent years, it is not increasing as fast as it could because the global vehicle fleet is ageing, as people are holding on to their cars and vans longer. Another factor affecting technical efficiency in recent years has been the shift away from diesel vehicles, which are mostly being replaced with petrol vehicles

3.5.1. EXISTING LEGISLATION

- Covered under Electric Mobility Policy 2018-23 outside the ambit of Energy Conservation Act 2001

3.5.2. SUGGESTIBLE ADOPTION OF EE MEASURES

The Energy Conservation and Energy Efficiency Policy 2023-2028 intends to provide

- Encouragement to use Public Transport System
- Encouraging the use of car-pooling
- Effective Implementation of Motor Vehicles Act
- Avoid procurement of Diesel Vehicles for Govt. Fleet
- Prefer procurement of EVs for Govt. Fleet
- Dedicated non-motorized Tracks in Urban Areas
- Dedicated lanes and toll gates for EVs on new Highways
- Improvement of State Highways to increase the average speed, which can increase mileage
- Awareness and Capacity Building

3.5.3. FINANCIAL MECHANISMS

- Covered under Electric Mobility Policy 2018-23 (Extended by six months or till the new policy is issued vide GO. Ms. No.79, dated 22.09.2023).
- Grants and Soft-loans to Urban Local Bodies to develop dedicated non-motorized paths in urban areas.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

K. VIJAYANAND
SPECIAL CHIEF SECRETARY TO GOVERNMENT

To
The Chief Executive Officer, APSECM, Vijayawada.
The Vice Chairman & Managing Director, NREDCAP, Tadepalli, Guntur.
The Chairman, APPCC, Vijayawada.
The Chairman & Managing Director, APTRANSCO, Vijayawada.
The Managing Director, APGENCO, Vijayawada.
The Secretary, APERC, Hyderabad.
The CMD's of APCPDCL, Vijayawada / APSPDCL, Tirupati / APEPDCL, Visakhapatnam.
All Collectors & District Magistrates in the State.
The Principal Secretary to Government, Revenue Department.
The Principal Secretary to Government, Industries Department.
The Principal Secretary to Government, EFS&T Department.
The Commissioner, Panchayat Raj & Rural Development Dept.,
The Commissioner / Director, Higher Education Dept.,
The Commissioner, Agriculture Dept.,
The Commissioner, Endowments Dept.,
The Commissioner, Technical Education Dept.,
The Commissioner, Municipal Administration & Urban Development Dept.,
The Commissioner, Industries Dept.,
The Commissioner, Transport Dept.,

Copy to:
The Principal Secretary to Hon'ble C.M.
The Principal Secretary to Govt., Finance Department.
The Secretary, Law Department.
The OSD to Chief Secretary.

The OSD to Hon’ble Minister (Energy).
The P.S. to Special Chief Secretary to Govt., Energy Department.
The GA (Cabinet) Dept.,
Sf/Sc (Comp.No. 2362263)

//FORWARDED :: BY ORDER//

SECTION OFFICER