MEDA महाऊर्जा

# MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)

( A Govt. of Maharashtra Institution )

# ANNUAL REPORT - 2019-20

# INDEX

# PREFACE

## DIRECTOR GENERAL

I am happy to bring out the Annual Report of Maharashtra Energy Development Agency (MEDA) for the Financial Year 2019-20. The role of Renewable Energy Sources in the grid connected power generation activity in the State has gained importance. I am also happy to state that MEDA has taken various measures for vigorous promotion of Renewable Energy. MEDA is working as a State Nodal Agency (SNA) under the aegis of Ministry of New and Renewable Energy, Govt. of India and as a State Designated Agency (SDA) notified by Government of Maharashtra under section 15(d) of Energy Conservation Act, 2001 in consultation with Bureau of Energy Efficiency (BEE), Ministry of Power, Govt. of India.

MEDA continues its wind monitoring exercise - the largest in the country, with 409 wind monitoring stations installed by March 2020. MEDA has also initiated the solar resource assessment programme in the State. We are the first State in the country to set up Solar Radiation Resource Assessment Stations (SRRA) on its own. SRRA will generate accurate and investment-grade solar radiation data. So far 17 SRRA stations have been setup in the State.

Maharashtra has installed capacity of 9587 MW renewable energy projects as on 31st March, 2020 which includes Wind-4998 MW, Small Hydro-370 MW, Bagasse based co-gen.-2301 MW, Biomass Power - 215 MW, MSW & liquid Waste- 3 MW, Industrial Waste – 38 MW, Solar Power – 1662 MW & retains its fourth position in the Country. In Amrut Yojana, implementation of solar power projects of total 18.35 MW is in progress at 12 Municipal Corporations / Municipal councils / Nagar Panchayats.

MEDA has been promoting the Off-grid RE sector as well, along with the grid connected RE power generation. Under Solar Power Plants in Govt. / Semi Govt. Office Buildings programme total 347 buildings are covered upto March, 2020. Till date total 7000 no. of solar agriculture pumps are installed under Atal Saur Krushi Pump Yojana -2. The Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya Yojana) includes electrification of households in remote areas by installing solar Home light systems. Installation of Solar Home Light Systems in 30538 Households is completed.

Under Biogas based Decentralized Power Generation Project, the State Financial Assistance has been given to 12 biogas power plants of total 920 kW capacity. Further, 29 biogas power projects of total 2010 kW capacity have been registered upto 31st March, 2020. Under Scheme for Briquetting Project, MEDA has issued subsidy to total 191 projects of briquette/Pellet machinery upto the financial year 2019-20.

Ministry of New and Renewable Energy, New Delhi has given sanction for 1,00,000 nos of Solar Agriculture Pumps of Component-B under PM-KUSUM Scheme for FY 2019-20 in the State of Maharashtra and the State Govt. has also approved the scheme.

The Energy Conservation Act (EC Act) mandates creation of a two-tier organization structure to promote the efficient use of energy and its conservation in the country with BEE as the nodal agency at central level and MEDA as State Designated Agency (SDA) at State level; to co-ordinate, regulate and enforce the provisions of the Act within Maharashtra.

The Energy Conservation activities are being promoted through various schemes from the State budget, includes Save Energy Programme and Up to March, 2020 total 1620 energy audits have been carried out in various sectors, which has resulted in potential energy saving in the industries. Under Walk Through Energy Audit (SME scheme) 3609 no of audit have been completed up to March, 2020. Under Demonstration projects for Energy Conservation Measures in Buildings of Government/ Semi Government/ Urban Local Bodies programme total 113 buildings are covered up to March, 2020. Under Installation of energy saving devices in Street lighting and water pumping systems of Municipal Councils/ Municipal Corporations/ Maharashtra Jeevan Pradhikaran programme total 39 Municipal Councils / Corporations are covered up to March, 2020.

Apart from State's EC schemes, in order to stimulate EE & EC activities at State level with emphasis on building institutional, technical and financial capacities of the MEDA, the Ministry of Power had approved the scheme for the period of 2017-20 for “Providing financial assistance to the SDAs.” This scheme has been supplemented by “Contribution to State Energy Conservation Fund (SECF)” scheme.

Under BEE schemes, MEDA implemented EE & EC activities which involves Replacement of Old Pumps with Energy Efficient Pumps in Municipal Corporation / Councils, Replacement / Retrofitting of Energy Efficient devices at Govt. Buildings and Hospitals, Energy Efficient measures in 100 Government Schools, Modern Energy Efficient Village campaign.

MEDA has received best performance awards in Solar, Wind and other RE sectors by Ministry of New and Renewable Energy (MNRE) and Indian Renewable Energy Development Agency (IREDA) at National level since inception. Also, MEDA bagged awards as a best State Nodal Agency (SNA) at National level from Ministry of New and Renewable Energy (MNRE). Recently, MEDA received National Energy Conservation Award (NECA) 2020 as “Certificate of Merit” in appreciation of MEDA's efforts in Energy Conservation in the State Level performance award category for FY 2019-20.

MEDA participated in several National and State level exhibitions to disseminate knowledge about renewable energy and energy conservation. I am sure that MEDA, with its inspired team, will keep up the tradition of excellence in the spheres of renewable energy and energy conservation.

**Director General, MEDA**

# 1. INTRODUCTION

Maharashtra Energy Development Agency (MEDA) registered under Societies Registration Act – 1860, commenced actual functioning from July 1986. MEDA's mandate is to undertake development of renewable energy and facilitate energy conservation in the State of Maharashtra, as a State Nodal Agency. Controlling body of MEDA is the Governing Body, with Hon. Minister for Non-conventional Energy, Maharashtra State, as a Chairman, Hon. Minister of State for Non-conventional Energy as a vice Chairman, Secretaries / Principal Secretaries of six other departments of Govt. of Maharashtra as a Member and Director General, MEDA, as a member secretary.

The broader objective is to promote, develop and diffuse knowledge in the various fields of Renewable Energy Source and assist the Government of Maharashtra and the Govt. of India in the efforts to develop and promote Renewable and alternate energy sources / technologies, evolve and promote energy conservation measures.

Life of today is impossible without energy. At present approx. 62% of the total energy is based on fossil fuel (coal, mineral oil, natural gas). While remaining 38% is through hydro electric projects and RE projects. When the electricity is generated by using the conventional sources, green house gases are emitted, i.e., carbon monoxide, carbon dioxide and sulphur dioxide etc. which when released into atmosphere cause global warming. The increase in temperature due to global warming has become a threat for the very existence of the human being. Further, taking into account the scarce availability of conventional energy sources and ill-effects of their uses, it is the need of hour to produce energy that is pollution free and eco-friendly.

The Govt. of Maharashtra in line with the policy of Central Govt. has adopted the policy of achieving the target of renewable energy up to 15% of conventional energy in the State by 2020 through RPO and accordingly declared policies from time to time. Among various non-conventional energy sources, Wind Energy is one of important resources that have been widely tapped in the state. Besides this, Biomass, Bagasse, Small Hydro, Urban & Industrial Waste & Solar Energy are other main resources of renewable energy. The potential of various non-conventional energy sources and its achievement is given below.

**A) POWER GENERATION FROM RENEWABLES: MEDA'S NEW FRONTIER** :

Maharashtra is second in the country in production of power from renewable by having around 9587.573 **MW** installed capacity **upto 31/03/2020.** (Including Small Hydro

| Sr. No. | Source | Potential in country (MW) | Potential in thestate (MW) | Achievement (MW) (31/03/2020) |
|---|---|---|---|---|
| 01 | Wind | 49130 | 9400 | 4998.21 |
| 02 | Bagasse co generation | 5000 | 3685 | 2301.30 |
| 03 | Biomass | 16881 | 781 | 215.00 |
| 04 | *Small Hydro Power (SHP) | 15000 | 732 | 370.025 |
| 05 | Urban waste | 1700 | 287 | 3.00 |
| 06 | Industrial waste | 1700 | 350 | 37.838 |
| 07 | Solar Photovoltaic & Solar Thermal Power | 20-30 / Sq.k.m. | 49/sq.km. 35/sq.km. | **1662.20 |
| | Total | 89411 | 15235 | 9587.573 |

*** Small Hydro Power Projects are implemented by Irrigation Department, Govt. of Maharashtra.**

**PPA with MSEDCL – 1175 MW, Third Party Sale & Captive use – 253.46 MW Total 1428.46 MW & Grid connected roof top solar project – 233.74 MW**

## B) CUMULATIVE ACHIEVEMENTS UPTO 31ST MARCH, 2020:

| Sr No | Particulars | Cumul. Achievet. upto 31st March, 2019 | Achvt. in 2019-20 | Cumul. Achievet. upto 31 Mar, 2020 |
|---|---|---|---|---|
| 1 | **POWER GENERATION** | | | |
| 01. | Wind Power Project | **4792.01** | 206.2 | 4998.21 |
| 02. | Bagasse co generation Power Project | **2283.55** | 17.75 | 2301.30 |
| 03. | Biomass Power Project | **215.00** | 0 | 215.00 |
| 04. | Small Hydro Power Project | **366.475** | 3.55 | 370.025 |
| 05. | Urban waste | **3.00** | 0 | 3.00 |
| 06. | Industrial waste | **34.713** | 3.125 | 37.838 |
| 07. | Solar Thermal & Photovoltaic | **1058.45** | 603.75 | 1662.20 |
| | Total | **8753.198** | 834.375 | 9587.573 |
| 2 | **Energy Conservation Programme** | | | |
| a | Energy Audit (Nos.) | 1312 | 308 | 1620 |
| b | Walk Through Energy Audit (Nos.) | 2969 | 640 | 3609 |
| c | Replacement of CFL at Gram panchayat (CFL) & (LED – 11696 Nos.) | 159966 | 0 | 159966 |
| d | Demo Project in Govt. / Semi Govt. office buildings of Energy Conservation (Nos) | 105 | 8 | 113 |
| e | Installation of EC Devices in Municipal Councils-(Nos) | 39 | 0 | 39 |
| 3 | Wind Monitoring Stations | 409 | 0 | 409 |
| 4 | Briquetting Project (Nos.) | 189 | 2 | 191 |
| 5 | Village Electrification (Villages) / Saubhagya Yojana | 586/703 | 0 | 586/703 |
| 6 | Solar Power plants in Govt. Buildings | 113 | 234 | 347 |
| 7 | Amrut Yojana | 0 | 0 | 0 |
| 8 | Kusum Yojana | 0 | 0 | 0 |
| 9 | Exhibitions (Nos.) | 305 | 16 | 321 |

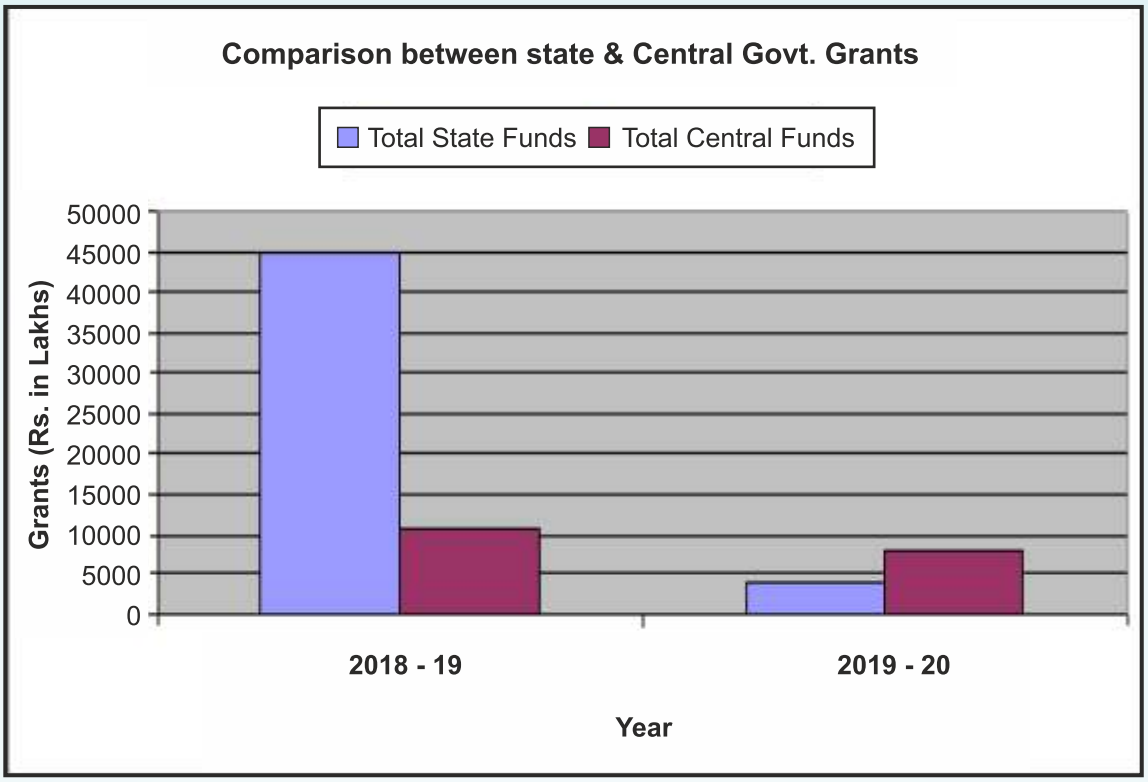
## C. Grants received from State Govt. in 2018-19 & 2019-20. (Rs. in lakhs)

| Sr. No | Programme | 2018-19 | 2019-20 |
|---|---|---|---|
| 1 | Non-Conventional & Renewable Sources of Energy(NRSE) - 28100034 | 4275.12 | 0.00 |
| 2 | Maharashtra Energy Development Fund / Green Cess Fund (GCF) - 28100123 | 18264.24 | 4070.69 |
| 3 | Solar Agriculture Pump - 28100902 | 1751.09 | 0.00 |
| 4 | 13th Finance Commission - 28100911 | 20762.40 | 0.00 |
| | TOTAL | 45052.85 | 4070.69 |

D) Comparison between State and Central Govt. Plan Grants in 2018-19 & 2019-20.

(Rs. in lakhs)

| Year | 2018-19 | 2019-20 |
|---|---|---|
| Total State Funds | 45052.85 | 4070.69 |
| Total Central Funds | 10657.52 | 7891.37 |
| **Total** | **55710.37** | **11962.06** |



# 2. WIND POWER PROJECTS

**I. Wind Energy:**

Wind Energy is the energy created due to uneven heating of the earth's surface and rotation of earth. Uneven heating causes difference in the air pressure, which causes air to flow from high pressure region to low pressure region. This phenomenon is termed as 'wind'. Wind contains tremendous amount of energy which can be utilized to generate power on a large scale.

**II. History:**

The application of wind energy for producing electrical energy was introduced later in the 20$^{th}$ century. By 1910 several hundred wind turbine generators rated between 5 KW and 25 KW were in operation in Denmark. By 1930s several wind power generators were installed in various parts of the world. But due to the higher cost of installation, the increase in number of systems was very less. By the early 1960s, interest in wind power as a viable and alternative source of power generation somewhat declined because other energy sources were simple and easily available. Wind energy was not found to be cost-effective in comparison with the fossil fuel systems of that age. After the oil crisis in 1970s, wind turbines have been developed on commercial scale and have received more importance after 1980, the second oil crisis. Presently it is one of the major sources for supplementing energy needs of many countries including India.

**III. Progress in India -**

India is now recognized as a leading country in the world for the development and utilization of renewable energy, particularly in wind power development. In fact, power generation from wind has emerged as one of the most successful programs in the renewable energy sector. With an installed capacity more than 37529 MW, India is the 4$^{th}$ largest wind-power producing nation in the world. Most of this capacity has come through private investment. Billions of units of electricity have been fed to various State grids from these projects. World's largest wind resource assessment program is also initiated to support these efforts. New initiatives have been taken for re-assessment expansion of the wind resource data base; and motivating large private sector corporations, public sector units and power utilities to set up wind power projects. Local manufacturing capacity has been established and wind turbines and wind turbine components are being exported to USA, Europe and several developing countries.

**IV. Wind Power Projects in Maharashtra-**

Wind Energy has paramount importance in the field of New & Renewable Energy Sources. Naturally, the Ministry of New and Renewable Energy, New Delhi has undertaken the Wind Energy program all over the country very intensively through nodal agencies in their respective states. In Maharashtra, this program is implemented through MEDA. 51 sites have been identified more than 200 w/m$^2$ wind power density in the state of Maharashtra with the help of NIWE, Chennai. Potential for

wind power projects in the state is of 9400 MW. GoM has formulated conducive policy framework which has evoked positive response from entrepreneurs and investors to set up commercial wind power projects. With the declaration of attractive and conducive policies on Wind Power Projects, many private sector investors have been inspired to set up their projects in Maharashtra.

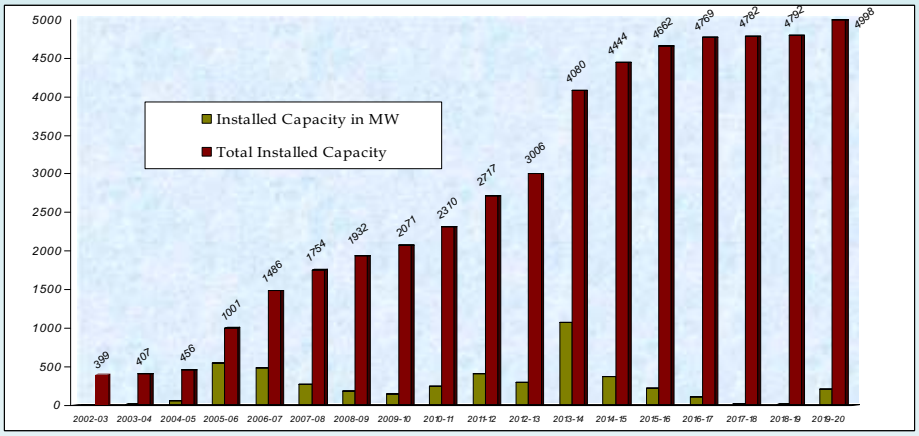
Govt. of Maharashtra has declared comprehensive policy for grid connected power projects based on New & Renewable (Non-Conventional) Energy Sources - 2015 vide Govt. Resolution No. NCE-2015/C.R. 49/Energy-7 dated 20th July 2015 & its amendment vide GR. No. NCE-2016/C.R.110/Energy-7 dated 3rd December 2016 & its methodology vide Govt. Resolution No. NCE-2015/C.R. 49/part-8/Energy-7 dated 9th September 2015.

**Renewable Energy Policy for Maharashtra – 2015**

Target: - 5000 MW

1. Target for sale of power to Distribution Licensees: - 1500 MW
   Achievement: - 1493 MW
2. Target for sale of power inside the state: - 500 MW
   (Captive/Group Captive/Third Party Sale)
   Achievement: - 137.50 MW
3. Target for sale of power outside the state/MSEDCL Competitive Bidding: - 3000 MW
   (Captive/Group Captive/Third Party Sale)
   Achievement: - 202 MW

Cumulative Capacity of projects set up and commissioned by the private sector up to March 2020 is as follows:




Wind power project had fed 7984.276 Million units of electricity in the state grid in FY 2019-20. Year wise installed capacity of wind power projects in the state of Maharashtra up to March 2020 is as follows:

| Year Upto | Installed Capacity in MW |
|---|---|
| 2002-03 | 399.355 |
| 2003-04 | 7.93 |
| 2004-05 | 48.75 |
| 2005-06 | 545.1 |
| 2006-07 | 484.5 |
| 2007-08 | 268.15 |
| 2008-09 | 178.075 |
| 2009-10 | 138.85 |
| 2010-11 | 239.05 |
| 2011-12 | 407.6 |
| 2012-13 | 288.55 |
| 2013-14 | 1074 |
| 2014-15 | 364.15 |
| 2015-16 | 217.85 |
| 2016-17 | 107.30 |
| 2017-18 | 12.6 |
| 2018-19 | 10.2 |
| 2019-20 | 206.2 |

# 3. BAGASSE BASED CO-GENERATION POWER PROJECTS

**I) Introduction –**

Bagasse is a by product produced during crushing of cane in sugar factory. Bagasse is an excellent renewable source for generating steam and power. In view of continuous shortage of power and limited fossil fuel reserves this source of renewable energy is more acceptable.

Sugar industry is the backbone of the Indian agriculture sector. There are 225 registered sugar factories in the state. Power is co-generated from bagasse left after extraction of juice from cane in sugar industry. Along with the saving of fossil fuels, cogeneration also allows to reduce the emission of greenhouse gases (particularly CO2 emission). The production of electricity being on-site, the burden on the utility network is reduced and the transmission line losses eliminated.

The available surplus power potential as estimated by VSI, Pune in the state through co-generation is about 2550 MW (on installed capacity). To tap this power potential, GoM declared an attractive policy on 20-7-2015.

With advancement of technology, it has become possible to utilise the raw material from (bagasse) sugar industry as fuel in most efficient manner for generating surplus power. Due to this, many sugar factories opted to go for efficient cogeneration. The surplus power now being fed in to the grid is approximately ***1300 MW***. Therefore, there is still enough potential left to be tapped.

The available power potential with the cooperative sugar factories can be harnessed provided they are financially supported. In view of this, Urjankur Nidhi Policy has been declared by GoM for financing all types of RE projects. This fund can be utilized for the co-generation. Further an exclusive scheme for Cooperative sugar factories for setting up Cogeneration projects has also been declared by cooperative dept., GoM in the year 2008, in said scheme 5-10% contribution is to be borne by co-operatives. For setting up cogeneration, 30% from SDF and 60% will come from Banks / FIS as a loan.

**A – Technical Information and Application –**

**Principle –**

Cogeneration or Combined Heat and Power (CHP) is defined as the sequential generation of two different forms of useful energy from a single primary energy source, typically mechanical energy and thermal energy. Mechanical energy can be used to drive an alternator for producing electricity. Thermal energy can beused either for direct process applications like sugar manufacturing or for indirectly producing steam.

Bagasse is fed into the high-pressure boiler for producing high-pressure steam. This steam is injected into backpressure or extraction condensing turbine. The turbine is coupled to turbo generator for producing electricity. The condensing turbine is used during off-season whereas the backpressure turbine can be used only during the crushing season.

**Basic components of Bagasse Cogeneration power project –**

Boiler, Turbine, Generator, Water / Air Cooled Condenser, Electrostatic precipitator (ESP)

**B - Application –**

The surplus power generated from cogeneration route is fed into the grid. This helps to generate additional revenue to the factory.

**II) Govt. Policies Announced –**

**A) MNRE Policy –**

The MNRE, GoI vide sanction No. 3/141/2017-CPG dated May 11th, 2018 is extending Central Financial Assistance (CFA) to Bagasse Cogeneration power projects at the rate of Rs.25 Lakh/MW.

* The policy details can be seen at www.mnre.nic.in

**B) State Policy -**

GoM declared Integrated Non-conventional Energy Generation policy dated 20-07-2015 and its implementation methodology 09-09-2015.

**C) MERC Order -**

| Financial Year | Fixed Charge (Rs/kWh) | Variable Charge (Rs/kWh) | Tariff (Rs/kWh) | Benefit of Accelerated Depreciation (if availed) (Rs/kWh) | Net Tariff (Rs/kWh) |
|---|---|---|---|---|---|
| During FY 2019-20 | 2.28 | 5.55 | 7.83 | 0.15 | 7.68 |

**D) Achievement for the current year –** The total installed capacity of bagasse cogen projects in the FY 2019-20 is **17.75 MW** which has raised the total co-gen capacity in the state to **2301.30 MW** by the end of March 2020.

**E) Next Year Plan –** Having attractive central and state policies for cogeneration, the target of 270 MW is fixed for implementation of bagasse cogeneration in sugar factories during the FY 2020-21. It is expected that the maximum Co-operative and private sugar factories will avail the benefit of this scheme and try to install the cogeneration power projects in following year.

# 4. SMALL HYDRO POWER PROJECTS

**Introduction –**

Hydro Power is a renewable and pollution free resource. The importance of decentralized power generation has made Small Hydro Power (SHP) an attractive venture. It has short gestation and almost negligible impact on environment. The necessity to secure energy security and abates global warming renewable energy projects are gaining more attention not only in the developing countries but also in the developed ones. Small hydro is significant for off-grid, rural, remote area applications in far flung isolated communities having no opportunity of grid extension for years to come. Small Hydro is operationally flexible, suitable for peaking support to the local grid as well as for stand alone applications. Small Hydro power projects serves to enhance economic development and living standards especially in remote areas. In India Hydro power projects, up to 25 MW capacities are classified as Small Hydro.

In order to develop this sector, the Govt. of Maharashtra vide its policy dated 8th December, 2005, has mandated MEDA for developing small hydro power projects up to 5 MW capacities on Run of the River, K T Weir and Water Falls in the state.

**1) Technical Information and Application Principle**

The hydro power potential is determined on the available discharge of water and height from which it is available. The kinetic energy of water impinging on the blades of turbine rotates the turbine and generates mechanical energy. This turbine is coupled to alternator which converts mechanical energy to electrical energy.

**a) Basic component of SHP**

- **Civil components** -Diversion weir, Intake, Power Channel, De-silting tank, Forebay, Penstock, Power House, Tail race etc
- **Electro-mechanical components-** Generator, Protection Control, Hydro Turbines, Gates, Valves Transmission and Distribution etc.

**b) Application**

The micro / mini and small hydro power projects have less damaging effect on the environment and therefore are preferred. Such projects could be taken up in the remote areas where the transmission lines have not reached, availability of water is seasonal and requirement of energy is less.

**2) GOVT. POLICIES**

**I) MNRE Policy: -** The MNRE, GoI vide Policy No 14(03) 2014-SHP dated 2nd July 2014 is extending central financial assistance to Small hydro power projects. The brief details are furnished as below

**a) Financial support for identification of new potential SHP sites and preparation of plan and preparation of DPR –**

1. Rs. 6.00 lakhs for each project up to 1 MW capacity.
2. Rs.10.00 lakhs for each project above 1 MW up to 25 MW capacities. (For State Govt. dept. / Agencies / Local Bodies)

**b) Financial support to set up new SHP projects Upto 25 MW in private, Co-operative, joint sector etc.**

| Area | Above 0.1 MW and Upto 25 MW |
|---|---|
| Maharashtra | Rs. 1.00 crores/MW limited to Rs. 5 crores/project |

* The project developers / owners are required to contribute a minimum of 50 % of approved project cost

.

**c) Financial support to set up new SHP projects Upto 25 MW in Government / State / Public sector**

| Area | Above 100 KW & Upto 1000 KW | Above 1 MW and Upto 25 MW |
|---|---|---|
| Maharashtra | Rs. 35,000 / KW | Rs. 3.5 crores/MW limited to Rs. 20 crores/project |

* A minimum of 10% of the total project cost is required to be borne by the state implementing agency or the owner of the project.

**d) Financial support for renovation and modernization of existing SHP projects Upto 25 MW in Government sector**

| Area | Upto 1000 KW | Above 1 MW and Upto 25 MW |
|---|---|---|
| Maharashtra | Rs. 10,000 / KW | Rs. 1.00 crores/MW limited to Rs. 10.00 crores/project |

* A minimum of 50% of the total project cost is required to be borne by the Central / State implementing agency or the owner of the project.

**e) Financial support for Micro Hydel Projects**
**Micro Hydel projects Upto 100 KW capacity:**

| Area | Amount of CFA |
|---|---|
| Maharashtra | Rs. 1,25,000 / KW |

- The policy details can be seen at www.mnre.nic.in

**II) State Policy:**

GoM declared Integrated Non-conventional Energy Generation policy dated 20-07-2015 and its implementation methodology 09-09-2015.
The policy benefits are furnished as below –

a) Capital Subsidy – Rs.50,000 per kW upto 25 MW limited to Rs. 1.00 Cr per project for all types of hydro projects (to be availed after commissioning of project and producing certificate of export of power by distribution licensee)

b) Evacuation expenses – Estimated cost and actual expenditure incurred for transmission line whichever is less will be considered subject to maximum Rs.1 Cr./ project after commissioning of project

The details of the policy could be seen at www.mahaurja.com

Besides above, the Water Resources Dept. GoM has declared SHP policy on 15th September, 2005 regarding development of small hydro power projects through private sector. This policy is still in continuation.

**3) MERC Tariff : -** The Maharashtra Electricity Regulatory Commission has (MERC) declared tariff for sell of power generated from small hydro power projects of different capacities for the FY 2019-20. The tariff details of the MERC tariff order are as below -

**Tariff for Micro, Mini and Small Hydro Projects 2019-20**

| Type of SHP | | Tariff Period | Levelized Tariff from 1st April 2019 to 31 March, 2020 | Benefit of Accelerated Depreciation (if availed) | Net Levelized Tariff (upon adjusting for accelerated depreciation benefit if availed) |
|---|---|---|---|---|---|
| | | years | (Rs / kWh) | (Rs / kWh) | (Rs / kWh) |
| **Small Hydro Projects** | | | | | |
| Mini and Micro Hydro Projects | 500 kW and below | 35 | 5.82 | 0.32 | 5.50 |
| | above 500 kW and upto and including 1 MW | 35 | 5.32 | 0.32 | 5.00 |
| Other Small Hydro Projects | above 1 MW and upto and including 5MW | 35 | 4.82 | 0.32 | 4.50 |
| | above 5MW and upto and including 25MW | 13 | 4.13 | 0.29 | 3.84 |

More details are available on website: www.mercindia.org.in

**4) Achievement in the current year-**

The total installed capacity of Small Hydro Power Projects in the FY **2019-20** is **3.55 MW** and the cumulative installed capacity of commissioned Small Hydro Projects in the state arrives **370.025 MW.**

**5) Next Year Plan**

Having attractive central and state policies for Small Hydro Power Projects, target of 76 MW is fixed for implementation of Small Hydro Power Projects during the FY 2020-21.

Power House

Gearbox & 6.6 Kv Generator

Intake Structure

# 5. INDEPENDENT BIOMASS BASED POWER PROJECTS

**Introduction –**

Biomass is one of the important natural energy resources. Biomass a is fuel that is developed from organic materials, a renewable and sustainable source of energy used to create electricity. Agricultural residues, forestry residues and woods are the main source of biomass. Biomass can either be used directly or converted into other form of energy such as biofuel.

The Ministry of New and Renewable Energy (MNRE), GoI with the help of ORG-Marg, Jaipur has conducted state level biomass assessment study for Maharashtra. This study shows the available biomass power potential in Maharashtra to be 781 MW.

The state government has been promoting energy generation from biomass power project. MEDA is giving technical support and guidance to induce private investment in to this sector and ensures speedy implementation of the projects. At present, there are 19 nos. Biomass Power Projects of totalling 215 MW commissioned in the State.

**I -Technical Information and Application –**

**a) Principle –**

The basic principle of operation is based on Rankine Cycle. In an Independent Biomass Power Project, biomass is burnt in furnace and medium to high pressure steam is produced. This steam is injected into turbine coupled with turbo generator for producing energy. The low-pressure steam released from turbine exhaust is condensed and pre-heated water is recycled to the boiler.

**b) Basic components of Biomass Power Project:**

Boiler, Turbine, Condenser, Cooling Tower, Electrostatic Precipitator

**c) Type of Biomass used are as follows:**

The types of biomass used in the project are usually the ones which are used for burning purposes viz: domestic heating, cooking in rural areas. A few names are: Coconut shell, Jute sticks, Maize stalks, Ground nut straw/shell, Tur stalks, Chilly stalks, Rice husk, Juliflora etc.

**II – Application:**

The power produced from biomass power project is utility grade power and can be fed into the grid. Plant Load Factor from such projects could reach 80% and above. In order to set-up such project, it is essential to observe the - availability of sufficient surplus biomass in the vicinity of the project. Further water linkage & grid accessibility is essential for smooth functioning of the project.

**III - Projects Taken-up –**

Biomass Power project is being promoted in all districts of Maharashtra. With the available power potential, it has been decided to establish projects up to 300 MW capacity of the Non-Conventional Energy Policy dated 20-07-2015. MEDA has so far sanctioned 37 biomass-based power projects totalling 410.5 MW capacities projects in the state.

**IV - Govt. Policies –**

**a) MNRE Policy:**

The Policy details can be seen at www.mnre.gov.in.

b) **State Policy:**

GoM has declared the Integrated RE policy on 20-07-2015. For Biomass Power Projects the policy benefits are furnished as below:

1. Evacuation – Financial assistance for laying transmission line is available from green cess (33 KV & above) after commissioning of project; subject to maximum Rs.1.00 Crores/project.
2. Capital Subsidy -Capital subsidy of Rs.1.00 Crores/project is given after c commissioning of the project.

c) **MERC Tariff** -

The regulatory tariff for sell of power from independent biomass power project in the year 2019-20 is as below:

| Financial Year | Fixed Charge (Rs/kWh) | Variable Charge (Rs/kWh) | Tariff (Rs/kWh) | Benefit of Accelerated Depreciation (if availed) (Rs/kWh) | Net Tariff (Rs/kWh) |
|---|---|---|---|---|---|
| During FY 2019-20 | 2.28 | 5.55 | 7.83 | 0.15 | 7.68 |

The detailed tariff order can be seen at www.mercindia.org.in

# 6. SOLAR POWER PROJECTS - OFF GRID AND GRID CONNECTED

## 1. ATAL SOLAR AGRICULTURE PUMP YOJANA- 2

MNRE, New Delhi has sanctioned total 7,000 Nos. of solar agriculture pump. First sanction for 2,000 Nos. of pumps was issued on 18th October, 2017 and second sanction for 5,000 Nos. of pumps on 10th November, 2017. Government of Maharashtra has also issued G.R. for solar agriculture pump on 3rd November, 2018. Central financial assistance will be available 25% of benchmark cost for 3 hp pump and 20% of benchmark cost for 3-5 hp pump. MEDA by following due tender procedure has issued work order to 19 No of companies for installation of these 7000 no's of pumps. All 7000 pumps are installed.

## 2. INSTALLATION OF OFF-GRID SYSTEM ON GOVERNMENT / SEMI-GOVERNMENT OFFICES BUILDING

Government of Maharashtra announced scheme for off-grid solar power plant on Government / semi-government offices building on 13th February, 2013. Under this scheme 1 to 20 kWp off grid power plants are installed on Government / semi-government offices with 100% financial assistance from Govt. of Maharashtra. This scheme is initiated in F.Y. 2012-13. Till date around 95 power plants are installed. For F. Y. 2018-19, Work orders are issued to 5 manufacturers for installation of 451 Govt. / semi-Govt buildings. Installation work is in progress. For F. Y. 2019-20, list of 347 Govt. / semi-Govt buildings is submitted to GoM for approval.

## 3. ATAL MISSION FOR REJUVENATION AND URBAN TRANSFORMATION (AMRUT) SCHEME

As per the Government of Maharashtra GR dated 17th December 2018, the projects regarding Solar Energy under Amrut Abhiyan and the Maharashtra Suvarnajayanti Nagarothan Mahaabhiyan are implemented by MEDA. Under This Scheme Installation of Grid connected solar power projects is done for water pumping stations, water treatment plants and sewage treatment plants under the premises of Urban Local Bodies. (Municipal Corporations/Municipal Councils) The Benchmark cost of MNRE is followed for the projects i.e., Rs. 45,000 /- per kWp. The manufacturer shall be responsible for 5 years of CMC as per MNRE norms. The project is expected to generate 15 Lakhs units per MW. Under this scheme, Work orders are issued to contractors for installation of total 12.874 MW Grid connected solar power plant at various 6 Municipal Corporations/Municipal Councils/ Nagarpanchyat, and re-tenders are published for remaining 6 Municipal Corporations/Municipal Councils/ Nagarpanchyat for 5.480 MW.

## 4. PRADHAN MANTRI SAHAJ BIJLI HAR GHAR YOJANA (SAUBHAGYA) SCHEME

Central Government of India declared Pradhanmanti Sahaj Bijli Har Ghar (Saubhagya) Yojana on 20th Oct. 2017. According to Guidelines of Saubhagya it is proposed to install 250-Watt Solar Home Light System with 5-year CMC at remote unelectrified villages. REC has given Sanction of Rs.117.80 Cr for 23560 for Household to be electrified by off-grid mode. In this Regards MSEDCL informed about electrification of 30538 No. of households by solar home light systems in total 849 villages / Wadipada. Accordingly, MEDA has published tender and issued Work order to 3 Manufacturers and installation of Solar Home Light Systems is completed.

## 5. RENEWABLE ENERGY GOM POLICY-2015- GRID CONNECTED SOLAR POWER GENERATION PROJECT SCHEME

Government of Maharashtra has declared a composite RE Policy 2015 on dated 20th July 2015. Target ~ 7500 MW MAHAGENCO ~ 2500 MW with PPP mode Private Developers ~ 5000 MW Project capacity ~ Min. 1 MW Sale of Power PPP mode ~ Sale to MSEDCL at preferential tariff for RPO compliance. To develop 10% of PPP target on places viz. lakes, canals, local self Govt. land. Developer ~ Sale to DISCOMs at competitive bidding with consent from MERC, Captive & 3rd Party Sale within / outside state & REC route. Electricity Duty – exempted for captive consumption upto 10 years from DoC. Target for Grid Connected Solar Power Projects Under GoM Policy 2015 ~ 7500 MW 1662.2 MW of Solar Project Commissioned till date.

## 6. INSTALLATION OF WATER HEATER SYSTEM ON GOVERNMENT / OTHER ORGANIZATION: -

Government of Maharashtra announced scheme for Solar Water Heater System on Government / Other Organization on 11th February, 2016. Under this scheme 500 LPD & above water heater systems are installed on Government / Other Organization with Rs. 1500/- Per sq. Mt area financial assistance from Govt. of Maharashtra. Till date around 103153 Sq. Mt area of water heater system are installed & commissioned successfully.

## 7. GRID CONNECTED ROOFTOP SYSTEM SCHEME(MH-GCRT)

- MH-GCRT 2017-18

  Ministry of New and Renewable Energy, GoI has announced a scheme for implementation of grid connected rooftop solar power plant with maximum 30% central financial assistance on 26th June, 2014. MEDA has received Sanction from MNRE, GoI for cumulative project capacity of 100 MW vide its letter dated 26th April 2016. Under this scheme MEDA achieved 55 MW capacity installations for around 6040 nos. of beneficiaries.

- MH-GCRT 2018-19

  MEDA has received Sanction from MNRE, GoI for cumulative project capacity of 50 MW vide its letter dated 15th February 2018. Under this scheme MEDA achieved 50 MW capacity installations for around 6041 nos. of beneficiaries.

# 7. BIO-ENERGY

India is recognized as one of the fastest growing economies of the world. Improving living standards, increasing populations, industrial expansions in the country has possessed serious challenges on energy sector and accelerated the energy demand, due to which basic energy needs of thousands of millions of its citizens are yet to be fulfilled. The rising energy demand in India is expected to lead to a further increase in the use of fossil fuels. Hence, this will not only lead to growing GHG emissions and increased environmental problems, but will also to vast social problems such as inequalities between rural and urban populations, health-related disorders, and other community-level issues. Bio-energy, solar, wind and small hydro have been identified as the thrust areas of renewable energy development in India. Bio-energy is one of the key focus areas of renewable energy programs in India and its resources are relatively uniformly available in India compared to other renewable sources.

Bio-energy is the energy derived from waste like urban, industrial & agricultural residues etc. and which can also be utilized as a feedstock in the manufacture of biofuels. Mainly, Generation of wastes is the one of the environmental growing concern in today's society. Due to rapid growth in urbanization and industrialization the collection, treatment and safe disposal of wastes has become a matter of concern. In recent years, technologies have been developed & those are helpful in generating substantial quantity of energy by treatment on different wastes resulting in its safe disposal and provide opportunities for meeting energy needs in a sustainable manner, improving quality of life and protecting the environment, including addressing climate change. Energy in the form of biogas, Bio-CNG, heat or power is seen as additional benefits, which improves the viability of such projects. Also, there exist huge potential in the state for setting up small scale decentralized biogas energy recovery projects based on biodegradable organic waste viz. animal waste, segregated MSW etc.

Realizing the potential, Ministry of New and Renewable Energy (MNRE), GoI has initiated several programs with encouraging fiscal and financial support. MNRE-GoI is also promoting the various technological options for setting up projects for recovery of energy from wastes. Beside this, Maharashtra Energy Development Agency (MEDA) has also come up with RE policies to support such projects in the state.

The brief information of various schemes/programmes promoted by Government of Maharashtra and Ministry of New and Renewable Energy, GoI is furnished below;

**1) <u>Government policy</u>**

A) Comprehensive Policy on Decentralised (off-grid) Energy Generation Projects based on New & Renewable Energy (Non-conventional) Energy Sources-2016 dated 11.02.2016 & its methodology dated 08.06.2016.

**Eligible projects for subsidy :**

- Municipal Corporations/Corporations/ Urban Local Bodies or Gram panchayat
- Government/Semi-government organizations (viz. Prisons, Animal Husbandry Departments Bull rearing centres/Pedigree of bull's frozen semen laboratory etc., canteens of Industrial/Commercial organizations etc.) or private mode or Individual person etc.

**Subsidy :**

| Capacity Range | Eligible Subsidy |
|---|---|
| 3 kW - 250 kW | Rs. 40,000 per kW |

**B) Achievement in this year:**

| Sr. No. | Name of Project | Capacity (kW) |
|---|---|---|
| 1. | M/s Avee Broilers at Gat No. 375, A/p Shirsane, Tal. Chandwad, Dist. Nashik SFA 01.11.2019 | 168 |
| 2. | M/s Indo Count Industries Ltd., T-3, Kagal-Hatkanangale, Five Star MIDC Industrial Area, Dist. Kolhapur 05.11.2018/SFA 31.03.2020 | 200 |
| 3. | Shri Vinod Ramkrishna Kulkarni 22.04.2019/SFA 31.03.2020 | 192 |
| 4. | Shri. Namdev Laxman Ghojge, A/p Jambhavade, Tal. Maval, Dist. Pune SFA 07.10.2019 | 24 |
| 5. | Shri. Haribhau Maruti Sutar, A/p Chale, Tal. Mulshi, Dist. Pune SFA 24.07.2019 | 24 |
| | **Total** | **608** |

**2) Biomass Briquette/Pellet Scheme dated 11.09.2007:**

**a) Eligible projects for subsidy:** Proprietary firms/Partnership firms/Company etc.
**b) Subsidy:** 20% of the briquette/pellet machine cost or max. Rs. 4 lakhs whichever is less.
**Achievement :**
**Proposed plan for this year: Sr. No.Name of Projects**

| Sr. No. | Name of Projects |
|---|---|
| 1 | M/s Sun Eco, Gut No. 89, Jangamwadi, Tal. Hatkanangale, Dist. Kolhapur 07.05.2019 |
| 2 | M/s. Piyush Bio Fuels, S.no.-11/12 k. Muja Heti Kundi, Tal. Karnja Dist. Wardha 05.10.2019 |
| 3 | M/s Shiro Pharmachem Pvt. Ltd., Gat No. 2321, Pomendi, Tal. Guhaghar, Dist. Ratnagiri 02.12.2019 |

| | |
|---|---|
| 4 | M/s Sumlex Biocoals, S/No.654, Solewadi, Tal. -Asti, Dist.-Beed 11.12.2019 |
| 5. | M/s. Pawar Industries, Tal.Malegao Dist. Nashik 07.02.2020 |
| 6. | M/s. Rahul Bricks Industries, Tal. Karanja (Lad) Dist. Vashim 16.01.2020 |
| 7. | M/s. Global Industries Tal. Kavthemahankal Dist. Sangli 19.03.2020 |

**3) Central Government Programmes : -**

**A) Biogas Power/Thermal (Off-Grid) Programme dated 29.11.2018**

**Eligible projects for subsidy :**

- Municipal Corporations/Corporations/ Urban Local Bodies or Grampanchayat'
- Government/Semi-government organizations (viz. Prisons, Animal Husbandry Departments Bull rearing centers/Pedigree of bull's frozen semen laboratory etc., canteens of Industrial/Commercial organizations etc.) or private mode or Individual person etc.

**Central Financial Assistance :**

| Sr. No. | Capacity Range (kW) | Power Generation (□/kW) | | Thermal Application (□/$kW_{eq.}$) | |
|---|---|---|---|---|---|
| | | SC/ST | Others | SC/ST | Others |
| 1. | 3-20 | 40,000/- | 35,000/- | 20,000/- | 17,500/- |
| 2. | 20-100 | 35,000/- | 30,000/- | 17,500/- | 15,000/- |
| 3. | 100-250 | 30,000/- | 25,000/- | 15,000/- | 12,500/- |

**Achievement in this year:**

| Sr. No. | Name of Project | Capacity (kW) |
|---|---|---|
| 1. | M/s. Ahmednagar District Goat Rearing and Processing Co-op. Fed. Ltd., A/p Wadgaon Tandali, Ahmednagar -414006 | 37.5 |
| 2. | M/s Avee Broilers, A/p Shirsane, Tal. Chandwad, Dist. Nashik-423101 | 175 |
| 3. | Shri. Shubham Bhaskar Ghule, at Village Dhandarphal, Tal. Sangamner, Dist. Ahmednagar | 12.5 |
| 4. | Mr. Shivaji Manikrao Pawar, A/p Muli, Tal. - Gangakhed, Dist.- Parbhani | 6.25 |
| 5. | Mr. Gujeba Abaji Mehetre, Dahid Khurd, Tal. Buldhana, Dist. Buldhana | 6.25 |
| 6. | Mrs.Rukminbai Khobaraji Bhumare, Muli, Tal. Gangakhed, Dist. Parbhani | 6.25 |
| 7. | M/s Indo Count Industries Ltd., T-3, Kagal-Hatkanangale, Five Star MIDC Industrial Area, Dist. Kolhapur | 200 |
| 8. | M/s Geetanjali Breeders Pvt. Ltd., At Karnalwadi, Post. Gulunche, Tal. Purandar, Dist. Pune | 36 |

| Sr. No. | Name of Project | Capacity (kW) |
|---|---|---|
| 9. | M/s Om Chicks (I) Pvt. Ltd., Khutbav, Tal Daund, Dist. Pune | 100 |
| 10. | M/s Parbhani Agrotech Pvt. Ltd., Ranjani, Tal. Ghansavangi, Dist. Jalna | 62.5 |
| 11. | Shri. Zumbarlal Dnyaneshwar Murkute, At Pachane, Post. Chandkhed, Tal. Maval, Dist. Pune | 12 |
| 12. | Shri. Deepak Narayan Kargal, A/p Golegaon, Tal. Shirur, Dist. Pune | 12 |
| 13. | Shri. Praveen Pralhadrao Sawarkar,, At village Yelwan, Tal. & Dist. Akola | 12 |
| 14. | Shri. Shivam Bharat Jadhav, A/p Pusegaon, Tal. Khatav, Dist. Satara | 24 |
| 15. | Shri. Haribhau Maruti Sutar, Post. Chale, Tal. Mulshi, Dist. Pune | 24 |
| 16. | Shri. Namdev Laxman Ghojge, Post. Jambhavade, Tal. Maval, Dist. Pune | 24 |
| 17. | M/s Bhagyalaxmi Dairy Farm, Sultanpur, Post. Manchar, Tal. Ambegaon, Dist. Pune | 250 |
| 18. | M/s. MGM college of Agricultural Biotechnology, Aurangabad | 24 |
| 19. | M/s. Sushila Agrovet Pvt. Ltd. Satara | 96 |
| | **Total** | **1120.25** |


**B) Programme dated 30.07.2018 on Energy from Urban, Industrial & Agricultural Waste/Residues**

**Objectives:**

a) To promote setting up of projects for recovery of energy from Urban, Industrial & Agricultural wastes;

b) To create conducive conditions & environment with fiscal and financial regime, to develop, demonstrate and disseminate utilization of wastes and residues for recovery of energy.

**Eligible projects for subsidy:**

The scheme provides Central Financial Assistance for following applications;

**I) Project based on Biogas production**

| Output | Capital Subsidy | Description |
|---|---|---|
| Biogas | Rs. 1 Crore Per 12000 $m^3$ Biogas/day (Max. Rs. 10 Crore/project) | Biogas generation from Urban Waste/ Agricultural Waste/ Industrial Waste/ Effluents or mix of these wastes. (Distillery waste is excluded) |

**ii) Project based on Power generation**

| Output | Capital Subsidy | Description |
|---|---|---|
| Power | Rs. 3 Crore Per MW (Max. Rs. 10 Crore/project) | Power generation based on Biogas generated from Urban Waste/ Agricultural Waste/ Industrial Waste / Effluents or mix of these wastes. In case, developer wants to set up power generating unit at already existing Biogas generation unit, in that case, the applicable CFA will be only Rs. 2 crore per MW. |

**ili) Project based on Production of Bio-CNG**

| Output | Capital Subsidy | Description |
|---|---|---|
| Bio-CNG/ Enriched Biogas | Rs. 4 Crore<br>Per 4800 kgs of Bio-CNG/ day generated from 12000 $m^3$ of Biogas/day.<br>(Max. Rs. 10 Crore/project) | Bio-CNG generation based on Biogas generated from Urban Waste / Agricultural Waste/ Industrial Waste / Effluents or mix of these wastes.<br><br>In case, developer wants to set up Bio-CNG unit at already existing Biogas generation unit, in that case, the applicable CFA will be only Rs. 3 crores. |

**iv) Project based on Biomass Gasifier**

| Output | Capital Subsidy | Description |
|---|---|---|
| Gasifier Thermal/ Electrical in Industries/ Villages | Electrical<br>• Rs. 2500 per kW with dual fuel engines.<br>• Rs. 15000 per kW with 100% gas engines.<br>Thermal<br>• Rs. 2 lakh per 300 kW for thermal applications. | Biomass Gasifier based Captive Power and thermal applications in industries.<br><br>Distributed off-grid power for villages using Biomass Power Systems. |

**Achievement in this year : (Proposal forwarded to MNRE for CFA)**

| S.N. | Name of Project Promoter | Capacity (MW) |
|---|---|---|
| **Industrial Waste to Power: -** | | |
| 1. | M/s Embio Ltd. Raigad | 1.5 MW |

**C) National Policy on Biofuels dated 04.06.2018**

**Salient Features :**

- An indicative target of 20% blending of ethanol in petrol and 5% of biodiesel in diesel is proposed by 2030
- Reinforcing ongoing ethanol/biodiesel supplies through increasing domestic production
- Setting up Second Generation (2G) bio refineries

- Development of new feedstock for biofuels
- Development of new technologies for conversion to biofuels
- Creating suitable environment for biofuels and its integration with main fuels.
- Blending ethanol in petrol through Ethanol Blended Petrol (EBP) Programme using ethanol derived from multiple feedstock
- Development Second Generation (2G) ethanol technologies & its commercialization
- Blending biodiesel in diesel through Biodiesel Blending Programme exploring multiple feedstocks including straight vegetable oil in stationery, low RPM engines
- Focus on drop-in fuels produced from MSW, industrial wastes, biomass etc.
- Focus on advanced biofuels including bio-CNG, bio-methanol, DME, bio-hydrogen, bio-jet fuel etc.
- Government of Maharashtra is planning to set up Biofuel Board in the State.

# 8. ENERGY CONSERVATION

## 1. Introduction

With the intent of legislature to provide energy efficiency in Indian economy, the National Energy Conservation Act, 2001 came into force on 1st March 2002. The Government of India has set up Bureau of Energy Efficiency (BEE) on 1st March 2002 under the provision of the Energy Conservation Act, 2001. The mission of Bureau of Energy Efficiency is to assist in developing policies and strategies with a thrust on self-regulation and market principles with the primary objective of reducing energy intensity of the Indian economy within the overall framework of the Energy Conservation Act, 2001. This will be achieved with active participation of all stakeholders, resulting into accelerated and sustained adoption of energy efficiency in all sectors.

The Energy Conservation Act (EC Act), 2001 mandates creation of a two-tier organization structure to promote the efficient use of energy and its conservation in the country with BEE as the nodal agency at central level and SDAs as nodal agencies at State level. Section 15(d) of the EC Act stipulated that the State Government may designate any agency at the State level to co-ordinate, regulate and enforce the provisions of the Act within the State. In-line with this, Government of Maharashtra (GoM) vide notification dated 12th March, 2003, appointed Maharashtra Energy Development Agency (MEDA), as the State Designated Agency.

For effective implementation of provisions under EC Act 2001 in the State, GoM formulated "State Energy Conservation Committee" on dated 30th April 2005 and restructured the same on 1st July 2011. In exercise of the powers conferred by sub-section (1) and (4) of section 16 of EC Act 2001, GoM on 12th February 2013, notified Maharashtra State Energy Conservation Fund Rules, 2013 for the purpose of promotion of efficient use of energy and its conservation within the State.

## 2. State Level Energy Conservation Schemes

MEDA has implemented following State Government Energy Conservation schemes in Maharashtra.

### a. Save Energy Programme

Maharashtra Energy Development Agency (MEDA) has implemented energy conservation programme in different sectors, since inception. Under "Save Energy Programme" MEDA provides financial assistance to conduct detailed energy audit in potential sectors. MEDA has done remarkable work up to March, 2020 and total 1620 energy audits have been carried out in various sectors, which has resulted in substantial energy saving in the various sectors.

### b. Walk Through Energy Audit (SME scheme)

Scheme aims to promote energy efficiency in small and medium enterprises (SMEs) by providing technical and financial assistance for conducting walk through energy audit (WTA). MEDA provides financial assistance to Empanelled Auditing Firm of Rs.3000/- per unit (SME). Under this scheme, around 3609 Walk through Energy Audits in SMEs have been completed up to March, 2020.

**c. Scheme for implementing demonstration projects in Government / Semi Government/ Urban Local Bodies buildings.**

There is scope of around 20-25% energy saving in building sector. A scheme is designed for Government/ Semi Government and Urban Local Bodies for implementation of energy conservation demonstration projects in their buildings. Under this programme financial assistance is up to Rs. 25 lakhs per building. Under this programme total 113 buildings are covered up to the financial year March, 2020.

**d. Energy Efficiency in Streetlights in Municipal Councils / Municipal Corporations/ Maharashtra Jeevan Pradhikaran.**

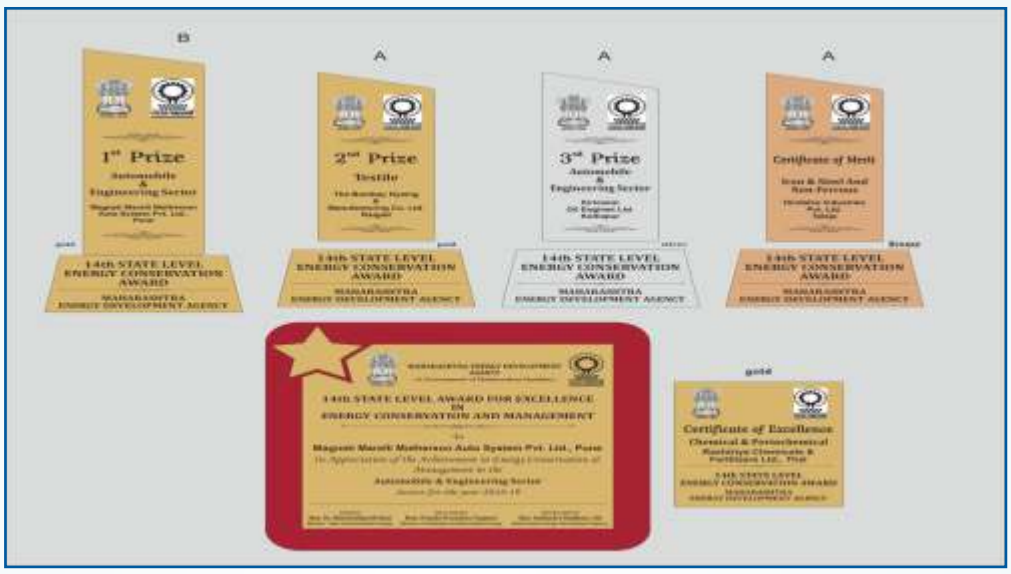
Street lighting systems of municipal and other bodies use 1.5 to 2% of State's total energy consumption while water pumping systems use 4% of State's total energy consumption. 30% energy savings can be achieved by installation of energy saving devices in street lighting and water pumping systems. Under this programme financial assistance is up to Rs. 25 lakhs. Under this programme total 39 Municipal Councils / Corporations are covered up to the financial year March, 2020.

**e. State Level Energy Conservation Award Scheme**

The Energy Conservation Award Scheme motivates the participating units to undertake serious efforts in energy saving by implementing energy conservation measures and adoption of latest energy efficient technologies. During FY 2019-20, the participating units have saved approx. **24648** Million kWh of electrical energy, which is equivalent to the energy generated form a **3538.9** MW thermal power.

In the last 15 years of Award Scheme (2003-2020), the participating units have collectively saved approx. **5014** Crores & during FY 2019-20 its around Rs. **352** Crores. In energy terms, **2883** Million kWh of electrical energy and **470** MW equivalent avoided capacity was saved through the energy conservation measures by the all-participating units during FY 2019-20.

This year due to Covid-19 pandemic, 14th State Level EC award ceremony has been cancelled. Awards and certificates have been delivered to all the winners at their respective places. List of the winners is uploaded on www.mahaurja.com.



**YEAR WISE ENERGY SAVINGS ACHIEVED BY PARTICIPATING UNITS IN MEDA'S ENERGY CONSERVATION AWARD SCHEME**

| Year | Award Scheme | No. of partici-pating units | Annual Saving in Rs. Crores | One-time Investment in Rs. Crores | Equivalent Electrical Energy Saving (Electrical + Thermal) | |
|---|---|---|---|---|---|---|
| | | | | | Million kWh | Equivalent Avoided Capacity in MW |
| 2003-04 | 1st | 46 | 150 | 205 | 317 | 25 |
| 2004 -05 | 2nd | 50 | 200 | 285 | 400 | 37 |
| 2005 -06 | 3rd | 75 | 292 | 356 | 584 | 45 |
| 2006 -07 | 4th | 68 | 394 | 442 | 789 | 90 |
| 2007-08 | 5th | 113 | 502 | 448 | 964 | 114 |
| 2008 -09 | 6th | 117 | 515 | - | 1031 | 117 |
| 2009 -10 | 7th | 67 | 304 | - | 608 | 88.9 |
| 2011- 12 | 8th | 113 | 330 | - | 2100 | 308 |
| 2012-13 | 9th | 114 | 349 | 556 | 2880 | 422 |
| 2014-15 | 10th | 110 | 155 | 86 | 1843 | 270 |
| 2015-16 | 11th | 136 | 421 | 577 | 2640 | 386 |
| 2016-17 | 12th | 120 | 316 | 436 | 2430 | 355 |
| 2017-18 | 13th | 100 | 287 | 407 | 2210 | 327 |
| 2018-19 | 14th | 87 | 447 | 444 | 2969 | 484 |
| 2019-20 | 15th | 77 | 352 | 194 | 2883 | 470 |
| **Total 15 Years** | | **1393** | **5014** | **4350** | **24648** | **3538.9** |

### 3. Bureau of Energy Efficiency (BEE) Schemes

In order to build and strengthen the institutional, technical and financial capacities and capabilities of the MEDA for undertaking energy efficiency activities at the State level, BEE provides financial assistance to the MEDA under two major components cited as below.

i. Providing financial assistance to the MEDA to coordinate, regulate and enforce efficient use of energy and its conservation.
ii. Contribution to State Energy Conservation Fund (SECF).

The activities covered under each of these above components are as follows.

**Providing financial assistance to the MEDA to coordinate, regulate and enforce efficient use of energy and its conservation.**

**1. State Partnership for Energy Efficiency Demonstrations (SPEED)**

a. Implementation of energy efficiency demonstration projects – Demonstration projects mainly in areas buildings retrofitting have been taken up for implementation by the MEDA. MEDA has taken up Walk through energy audits & detailed energy audits in government building and water supply system of municipal corporation / Municipal Council and propose to implement Energy Efficiency in due course. These projects have been successful in facilitating most of the State Governments in replicating the demonstrated technology through various departments / agencies.

b. Implementation of energy efficiency activities in Government schools – Replacement of existing conventional appliances with energy efficient appliances in Govt. schools is undertaken by MEDA under this head. MEDA is implementing this demonstration project in 100 Government Schools in the State of Maharashtra. The main objectives of these activities are to make schools energy efficient by replacing old luminaries & fan with energy efficient one and disseminate the awareness of energy efficiency and energy conservation amongst the school children. MEDA has awarded tender for implementation of Energy Efficient Activities in total 100 Schools and additional 100 schools are proposed for implementation in coming year. Energy Saving Potential 431618 kWh/year and CO2 reduction 353.92 tone per year is estimated.

**2. Model Energy Efficient Village Campaign**

The Model Energy Efficient Village Campaign is initiated to convert villages into model energy efficient villages by replacing existing inefficient electrical equipment / appliances with BEE star rated appliances including bulbs, street lights, fans, water pumps, etc.

MEDA has implemented this campaign in 2 villages (Village Dudhgaon Tal & Dist. Osmanabad & Village Dhanora Tal & Dist Yavatmal) from Marathwada and Vidarbha region. Estimated energy saving potential for Village Dudhgaon Tal & Dist. Osmanabad is 57600 kWh/year and CO2 reduction 47.23 tone per year and for Village Dhanora Tal & Dist Yavatmal is 19400 kWh/year and CO2 reduction 15.90 tone per year.

In addition to this MEDA has completed Detailed Energy Audit and proposed to implement this campaign in additional 3 villages namely –

i) Village Radhanagari, Tal. Radhanagari, Dist. Kolhapur
ii) Village Jategaon, Tal. Shirur, Dist. Pune
iii) Village Nategaon, Tal. Mahad, Dist. Raigad

Estimated Energy Saving Potential of above 3 villages is 201241 kWh/year and CO2 reduction 165.017 tone per year.

### 3. Workshops/Trainings on Energy Conservation programmes

MEDA conducted various workshops, seminars and capacity building programme of energy professionals in the area of Energy Conservation Building Codes, Capacity Building of DISCOMs, Energy Efficiency in Industrial clusters and Energy Efficiency Financing for Financial Institution.

a. Capacity Building of DISCOMs program under Demand Side Management Scheme on 18th July, 2019 at Mumbai, Maharashtra


b. One Day Business Meet Energy Cost Reduction & Mix Optimization, Sugar Factories in the State of Maharashtra on 27th December, 2020.


c. One Day Business Meet Energy Cost Reduction & Mix Optimization, Dairies in the State of Maharashtra on 3rd January, 2020.


d. One day interactive awareness and training programme on "Draft MAHA ECB Rules, 2019" on 15th Feb 2019 at Sangli and 22nd Feb 2019 at Pune.

e. Two-day interactive awareness and training programme on "Draft MAHA ECB Rules, 2019 at Nagpur, Kolhapur and Pune in Feb & March 2019.

**4. Energy club:**

MEDA has established total 102 Energy clubs in schools in State of Maharashtra under BEE program "Student Capacity Building Program." Under this program, MEDA provided financial assistance of Rs. 5000/- per school. Through these established energy clubs, various energy conservation activities are implemented by schools like – Elocution competitions, Essay competition, Painting competition, Slogan Competition, Quiz contest and celebration EC week etc.

**5. Energy Conservation Day and Energy Conservation Week:**

Every year MEDA celebrates National Energy Conservation day on 14th December and Energy Conservation week from 14th to 20th December on large scale. Following activities have taken up in the week for creation of awareness.

- Industries, Industries association, all government departments, all local organizations were asked to celebrate the EC day and EC Week by carrying out various activities like:

➢ Administer Energy Conservation pledge by employees.
➢ Display of banner and posters at various locations to create mass awareness.
➢ Distribution of pamphlets giving tips on energy conservation and energy pledge.
➢ Energy conservation slogan competition for employees and their wards.
➢ Seminar for employees on energy conservation activities in the plant

- MEDA also distributed leaflets, banners and posters to more than 1551 Government/ Semi-Government Offices, Designated Consumers and State Level EC Award participants.

- The promotional material was specifically prepared for celebration of the energy conservation day and week.




**6. Establishment of Energy Conservation Building Code in state**

The Central Government vide notification dated 13th February, 2018 in consultation with Bureau of Energy Efficiency notified the Energy Conservation Building Code (ECBC) in 2007 which got amended in 2017. The code is applicable to all commercial buildings having connected load of 100 KW or above or contract demand of 120 kVA or above.

Energy Department, Govt of Maharashtra under section 57 (2) of Energy Conservation Act, 2001 published the draft "MAHA ECB Rules, 2019" on August 22nd, 2019 in official gazette No. MAHBIL/2009/31733 for comments & suggestions in public domain. all the received comments & suggestions have been compiled & the rules have been amended and submitted to GoM for consideration.

Further, Bureau of Energy Efficiency (BEE) established ECBC cell in Maharashtra, which are taking up the activity of demonstration projects for recognition and awareness of the ECBC compliant buildings. A total 6 demo projects are undertaken by MEDA for preparation of techno commercial feasibility under ECBC.

**7. Van Activation and Promotion Program**

A major activity carried out in FY 2019-20 the "Van Activation and Promotion Program" to create mass awareness on energy conservation measures. This program was organized by BEE and supervised and monitored by MEDA. During this campaign energy awareness messages were propagated through films on LCD TV and through a street play on a branded mobile vehicle. On an average 2 locations per day were covered totalling 70 locations during this campaign in 30 days. Gifts with the messages of energy conservation and promotional literature was also distributed to the general public.

**8. National Energy Conservation Award 2020: -**

Ministry of Power, in association with Bureau of Energy Efficiency (BEE), organised the 30th National Energy Conservation Awards (NECA) function 2020. This year, due to the COVID pandemic, the function was organised as a Hybrid event transmitted from Vigyan Bhawan. Stakeholders from across the country and the Awardees participated through virtual platform.

MEDA received National Energy Conservation Award (NECA) 2020 ***"Certificate of Merit"*** in appreciation of MEDA's efforts in Energy Conservation in the State Level performance award category for FY 2019-20.

**9. Perform, Achieve & Trade (PAT) Scheme:**

Perform Achieve and Trade (PAT) scheme is a flagship programme of Bureau of Energy Efficiency under the National Mission for Enhanced Energy Efficiency (NMEEE). NMEEE is one of the eight national missions under the National Action Plan on Climate Change (NAPCC) launched by the Government of India in the year 2008.

Perform Achieve and Trade (PAT) scheme is a market-based compliance mechanism to accelerate improvements in energy efficiency in energy intensive industries. The energy savings achieved by notified industries is converted into tradable instruments called Energy Saving Certificates (ESCerts). The ESCerts after issuance by Bureau of Energy Efficiency (BEE) are traded at Power Exchanges.

BEE launched new PATNet portal (https://escerts.gov.in) on 17th March 2019, for Designated Consumers (DCs), SDAs, EmAEAs for filling up forms, giving comments and registration. Role of MEDA as a SDA is to maintain list of DCs, to perform scrutiny documents uploaded by DCs and give comments on submissions of Form 1/2/3, Performance Assessment Document (Form A), cross check Monitoring & Verification (M&V) report and subsequently issue show cause notice to DCs for non-compliance.

**Overall achievement of PAT scheme in Maharashtra**:

| PAT CYCLE | TARGET YEAR | NO OF DCs | OVERALL ACHIEVEMENT (ESCerts | TOTAL ENERGY SAVING (Million TOE) | GHG EMISSION REDUCTION (Million Tonnes of CO2) |
|---|---|---|---|---|---|
| I | 2014-15 | 45 | 1,60,003 | 0.16 | 0.46 |
| II | 2018-19 | 57 | 8,51,208 (Proposed) | 0.85(Proposed) | 2.5 (Proposed) |

# 9. PUBLICITY AND MASS AWARENESS PROGRAMME

During 2019-20 MEDA carried out wide publicity campaigns through various media like exhibition, electronic media, print media etc.

**Exhibitions :**

1. **Green Idea 2019** - Mumbai Tarun Bharat Organized this Exhibition at Shivaji Maidan, Jambhali Naka Thane from 5th to 7th June 2019. MEDA Division Office Mumbai Participated in this Exhibition. MEDA stall displayed information boards about New & Renewable energy & Energy conservation schemes Information brochures and MEDA Books distributed among the people who visited the MEDA Stall.

2. **Masma Solar Expo 2019** - Maharashtra Solar Manufactures Association organized Masma Solar Exhibition at Siddhi Banquets, in front of Mhatre Bridge, D.P.Road, Pune from 9th to 10th Nov., 2019. MEDA Division office, Pune participated in this exhibition. MEDA stall displayed information boards about New & Renewable energy & Energy conservation schemes.

3. **Agrovision 2019** – Agrovision 2019 foundation organized this Exhibition at Reshimbaug Maidan, Nagpur from 22 to 25 Nov., 2019. Agrovision is organized under the able guidance of its Chief Patron, Shri Nitin Gadkari, Hon'ble Minister for Road Transport & Highways; Micro, Small and Medium Enterprises, GoI and Dr. C. D. Mayee, Chairman - Advisory Council, Agrovision. Agrovision is supported by Ministry of Agriculture & Farmers Welfare, GoI, Ministry of Micro, Small and Medium Enterprises, GoI, Govt. of Maharashtra, Skill India, GoI, Crop Care Federation of India (CCFI), Croplife India, National Small Industries Corporation (NSIC) and National Seeds Associations of India (NSAI). The vision of this Exhibition is to create a prosperous agrarian society where farmers are well informed about the latest practices and agriculture becomes a remunerative and attractive profession. The theme of the 11th Agrovision has been "Smart Technologies for Sustainable Development". MEDA demonstrated live demo of grid connected solar system, LED Highmast, Solar Street light, solar water heater, solar rural water supply schemes etc. Information regarding renewable energy was given to farmers, students who visited MEDA stall. Information Brouchers were distributed to visitors.

4. **Krishithon – 2019 -** Media Exhibitors Pvt. Ltd. organized Krishithon exhibition at Thakkar Ground, Tryambak Road, Nashik from 21th to 25th Nov. 2019. MEDA Division office, Nashik participated in this exhibition. MEDA stall displayed information boards about Solar Agriculture Pump, Solar Roof Top system, Solar Power Project etc. About 3 lakh people visited to exhibition. MEDA information brouchers, books distributed to visitors

5. **Kisan-2019 -** This Exhibition was held at Moshi, Tal. Haveli. Dist. Pune from 11th to 15th Dec., 2019. MEDA Division office, Pune participated in this exhibition. MEDA stall displayed information about New & Renewable energy & Energy conservation schemes through Digital boards. There was also demo model of Grid connected solar system and Solar Agriculture Pump etc. Brochures and MEDA Books were distributed among the people who visited the MEDA Stall. Around 90 thousand people visited MEDA stall.

6. **Agrotech - 2019 -** MEDA District office, Akola Participated in Agrotech 2019 Exhibition which held at Dr. Punjabrao Deshmukh Krushi Vidyapeeth, Akola from 27th to 29th Dec., 2019. This Exhibition was inaugurated by Hon. District Collector of Akola along with other delegates. MEDA stall displayed the information about New and Renewable Energy and Energy Conservations Scheme implemented by MEDA through Digital boards. About 6.5 to 7 Lakhs people visited to MEDA stall.

7. **Agrovan Agro-expo -2019 -** This Exhibition was organized by Agrovan Sakal Media Pvt.ltd at Jabinda Maidan, Beed Bypass, Aurangabad from 27th to 31th Dec., 2019. MEDA Division office, Aurangabad participated in this Exhibition. This Exhibition was inaugurated by Hon. Shri. Popatrao Pawar. Farmers from various districts visited the Exhibition. Around 60 thousand people visited the stall.

8. **Advantage Maharashtra Expo 2020 -** Marathwada Association of small-scale industries & agriculture (MASSIA) organized this Exhibition at Chikalthana MIDC, Aurangabad from 9th to 12th Jan., 2020. MEDA Division office, Aurangabad participated in this Exhibition. This Exhibition was inaugurated by Hon. Shri. Uddhav Thackerey, Chief Minister, Maharashtra in the presence of other delegates. MEDA stall Demonstrated demo model of Grid connected solar system and Solar Agriculture Pump etc. Information Brochures and MEDA Books distributed among the people who visited MEDA Stall. Around 90 thousand people visited MEDA stall.

9. **Krishi Pradarshan 2020 –** Shri. Sidheshwar Devasthan organized this Exhibition at Solapur from 13th Jan. to 17th Jan., 2020. MEDA Division office Solapur participated in this Exhibition. Information regarding renewable energy was given to farmers and people who visited MEDA Stall. Information Brouchers were distributed to visitors.

10. **Krishi Vishwa 2020** – M/s. Resources, Sangli organized Krishi Vishwa from 15th to 19th January, 2020. MEDA Division office, Kolhapur participated in this exhibition. In this Exhibition MEDA demonstrated live demo of grid connected solar system, LED Highmast, Solar Street light, Solar water heater, Solar rural water supply schemes etc. Information regarding renewable energy was given to farmers, students. Information Brouchers distributed to visitors.

11. **Krishi Mahotsav 2020 -** This Exhibition was organized by Shanti Events & Management at Science core Ground, Amaravati from 18th to 22th January 2020. This program was inaugurated by Hon. Shreemati Navneet Rana, MP, Amaravati. MEDA Division office, Amaravati participated in this Exhibition. In this Exhibition MEDA demonstrated live demo of grid connected solar system, Chief Minister Solar Agriculture Feeder, Solar drinking water supply, Solar Street Lights, Solar Water Heating System, Solar Cooker etc. Advantages of Non conventional Energy & Energy Conservation products were given to the people who visited MEDA stall at Exhibition. Information Brochures was distributed among the Peoples who visited the Exhibition.

12. **Krishi Pradarshan 2020 -** Chatrapati Yuva Pratishtan, Kalas organized this Exhibition at I.T.I. College Ground, Akole from 23 th to 26th Jan., 2020. MEDA Division office, Nashik participated in this exhibition. MEDA stall displayed information about Solar Agriculture Pump, Solar Roof Top system, Solar Power etc. through boards. About 2 lakh people visited to exhibition. MEDA information brochures, books distributed to visitors.

13. **Krushi Mahotsav 2020 -** Swami Samarth Krushi Vikas and Sanshodhan Charitable Trust Organized this Exhibition at Dongare hostel ground, Gangapur Road Nashik from 23th to 27th Jan., 2020 MEDA Division Office, Nashik participated in this Exhibition. Information Brochures and MEDA Books were distributed among the people who visited the MEDA Stall. People got information about Solar Agriculture Pump, Grid connected roof top, solar water heater byvisiting MEDA stall. Around 2 Lakhs people visited MEDA stall.


14. **VSI Exhibition 2020**- Vasantdada Sugar Institute, Pune organized exhibition on Sustainability - Innovation and Diversification in Sugar and Allied Industry at Vasantdada Sugar Institute, Manjari, Pune from 31 Jan. to 2 Feb. 2020. MEDA Divisional office, Pune participated in the exhibition. MEDA stall Demonstrated demo model of Grid connected solar system, Saur Sheti, and Solar Agriculture Pump etc. Information Brochures and MEDA Books distributed among the people who visited the MEDA Stall

15. **Agroworld Exhibition 2020** – Agroworld, Jalgaon organized this exhibition at S.S.V.P.S College Ground, Dhule from 7th to 10th Feb, 2020. MEDA Division office, Nashik participated in this exhibition. MEDA stall displayed information about New & Renewable energy &Energy conservation schemes through Digital boards. Around 70 thousand peoples visited stall.

16. **Mitcon Seminar** – MEDA and Mitcon consultancy & Engineering jointly organize a One-day business meet for Sugar factories on December 27, 2019 and for Dairies on January 3, 2020 at Hotel Sheraton Grand, Pune with the objective to sensitize the sugar factories and Dairies regarding the possible ways and areas for energy cost reduction and mix optimization.

**Publicity through Electronic Media –**

For promotion of Renewable Energy & Energy Conservation in the State by MEDA electronic media is one of the effective medium. MEDA TV spot was broadcasted on News 18 lokmat, Sam TV and TV 9 Marathi.

**Publicity through Outdoor Media –**

**Bus stop Shelter –**

Advertising through Bus stop shelters is also an effective mode of creating awareness about renewable energy. Total 80 Bus stop shelters from Pune and Nagpur were used for displaying advertisement to promote use of Renewable Energy and Energy conservation. 40 Back lit type bus stop shelters in Pune city and 40 Back lit type bus stop shelter in Nagpur city. Prime locations like squares on major roads, nearby premises of schools and Bus stands.

**Publicity through Print Media –**

**Advertisements –**

Advertisements are published in various leading newspapers, magazines and special supplements to promote renewable energy and energy conservation aiming at the target group of industries, private investors etc. The advertisement on Renewable Energy was released in leading newspaper Dainik Samana, MEDA advertisements were also released in leading Magazine such as Amrutwel, Environ Friend, Tarun Bharat, Diwali ank etc.

**Information Brochures –**

To illustrate various renewable energy programmes being implemented by MEDA and renewable energy technology MEDA printed around 10000 information brochures. These brochures were distributed among the peoples to create awareness of Renewable Energy and Energy Conservation.

**MEDA Founding day –**

MEDA celebrate its 35$^{th}$ founding day at Alpabachat Bhavan, Camp, Pune on 26$^{th}$ July, 2019. Shri. Chandrashekhar Bawankle, Minister for Energy, New and Renewable Energy, GoM. There was Van Activation and Promotion Campaign for Space Cooling sponsored by Bureau of Energy Efficiency at the hands of Hon Minister, Energy.

# 10. HUMAN RESOURCE AND ORGANIZATION DEVELOPMENT

Human Resource Development plays an important and vital role in effective management of an organization.

Maharashtra Energy Development Agency, during financial year 2019-20, has nominated its staff members from various levels for short and long-term training courses all over India. This was particularly done taking into consideration their job requirements and academic qualifications. The details of category-wise staff attended various training courses during the period is as under.

| | | | |
|---|---|---|---|
| General Manager | - | 02 | - |
| Account Officer | - | 01 | |
| Deputy Director (Account) | - | 01 | |
| Project Executive officer | - | 01 | |
| Project Officer | - | 02 | |

MEDA has spent 1,35,700/- on these training programs during financial year 2019-20.

# 11. RPO, REC and R & D Programme

**Renewable Purchase Obligation (RPO) –**

Maharashtra Electricity Regulatory Commission (MERC) has declared (Renewable Purchase Obligation, Its Compliance and Implementation of REC Framework) Regulation, 2010 vide its order dated.7th June 2010. For implementation of this regulation MEDA has been designated as State Agency in Maharashtra State.

Renewable Purchase Obligation (RPO) is the obligation mandated by the Maharashtra Electricity Regulatory Commission (MERC) under the Act, to purchase minimum level of renewable energy with respect to the total consumption by the Obligated Entity.

As per MERC (Renewable Purchase Obligation, Its Compliance and Implementation of REC Framework) Regulations, 2016. RPO obligation shall be applicable to all Distribution licencees, Open Access Consumers and captive users within the Maharashtra, subject to the following conditions:

(a) Any person who owns a grid-connected Captive Generating Plant based on conventional fossil fuel with installed capacity of 5MW and above, or such other capacity as may be stipulated by the state commission from time to time and consumes electricity generated from such plant for his own use shall be subject to RPO to the extend of a percentage of his consumption met through such fossil fuel based captive source:

(b) Any person having a contract demand of not less than 5MVA and who consumes electricity procured from conventional fossil fuel-based generation through open access shall be subject to RPO to the extent of a percentage of his consumption met through such fossil fuel based open access source:

Every Obligated Entity may meet its RPO target by way of (i) Own generation or procurement of power from RE developer or (ii) Purchase from other licensee or (iii) Purchase of renewable energy certificate or (iv) Combination of any of the above options.

Obligation to purchase electricity generation based on solar as RE source can be fulfilled by purchase of solar REC only. Obligation to purchase electricity generation based on non-solar as RE source can be fulfilled by purchase of non-solar REC only. Procurement of REC's issued for RE generation outside the State of Maharashtra as well as REC's issued for renewable energy generation within the State of Maharashtra shall be considered as an eligible instrument for the purpose of RPO compliance.

RPO Targets as per MERC's RPO-REC Regulation 2016 are as below:

| Year | Quantum of purchase (In %) from Renewable Energy sources (In terms of energy equivalent in KWh) | | |
|---|---|---|---|
| | Solar | Non-Solar (other RE) | Total |
| 2016-17 | 1.00% | 10.00% | 11.00% |
| 2017-18 | 2.00% | 10.50% | 12.50% |
| 2018-19 | 2.75% | 11.00% | 13.75% |
| 2019-20 | 3.50% | 11.50% | 15.00% |

**REC (Renewable Energy Certificate) Mechanism -**

REC (Renewable Energy Certificate) is a market-based instrument to promote renewable energy and to address the mis-match between available RE sources and the requirement of the obligated entities to meet their renewable purchase obligations.

For meeting the RPO targets Purchase of renewable energy certificate is an option for obligated entities. Obligation to purchase electricity generation based on solar as RE source can be fulfilled by purchase of solar REC only. Obligation to purchase electricity generation based on non-solar as RE source can be fulfilled by purchase of non-solar REC only. Procurement of REC's issued for RE generation outside the State of Maharashtra as well as REC's issued for renewable energy generation within the State of Maharashtra shall be considered as an eligible instrument for the purpose of RPO compliance. Others details of REC can be viewed from MERC website www.recregistryindia.nic.in

**Significant Characteristics of the REC Framework**

- According to Maharashtra Electricity Regulatory Commission (Renewable Purchase Obligation, Its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2016 dated. 30.03.2016 Maharashtra Energy Development Agency (MEDA) has designated as a State Agency to undertake functions of this Regulation.

- MEDA as a State Agency will give REC Accreditation only to RE Generators. REC would be issued to RE generators and to the eligible Distribution Licensee. Grid connected RE Technologies approved by MNRE would be eligible under this scheme.

- There will be a Central Agency designated by the Central Commission i.e., National Load Dispatch Centre (NLDC) for registration of RE generators participating in the scheme.

- The RE generators will have two options - either to sell the renewable energy at preferential tariff fixed by the concerned Electricity Regulatory Commission or to sell the electricity generation and environmental attributes associated with RE generation separately in the form of REC.

- The REC once issued shall remain valid for One thousand and ninety-five days from the date of issuance of such Certificate.

- The Central Agency NLDC will issue the REC to RE generators. The value of REC will be equivalent to 1MWh of electricity injected into the grid from renewable energy sources.

- The REC will be traded only in the Power Exchanges approved by CERC within the band of a floor price and a forbearance (ceiling) price to be determined by CERC from time to time.

- There are two categories of RECs, viz., solar RECs and non-solar RECs.

  a) Solar RECs are issued to eligible entities for generation of electricity based on solar as renewable energy source & non-solar RECs are issued to eligible entities for generation of electricity based

on renewable energy sources other than solar.

b) The solar certificate shall be sold to the obligated entities to enable them to meet their renewable purchase obligation for solar, and non-solar certificate shall be sold to the obligated entities to enable them to meet their obligation for purchase from renewable energy sources other than solar.

- The price of REC would be determined in power exchange. REC would be traded in power exchange within the forbearance price and floor price determined by CERC from time to time.

The floor and forbearance price as determined by the Commission to be applicable from 1st April 2017 are as under :

| | Non solar REC (₹/MWh) | Solar REC (₹/ MWh) |
|---|---|---|
| Forbearance Price | 2900 | 2500 |
| Floor Price | 1000 | 1000 |

- The distribution companies, Open Access consumer, Captive Power Plants (CPPs) will have option of purchasing the REC to meet their Renewable Purchase Obligations (RPO). Pertinently, RPO is the obligation mandated by the State Electricity Regulatory Commission (SERC) under the Act, to purchase minimum level of renewable energy out of the total consumption in the area of a distribution licensee.

- There will also be compliance auditors to ensure compliance of the requirement of the REC by the participants of the scheme.

On national level REC mechanism has been started in November 2010. Accordingly, MEDA received applications from RE generators for getting accreditation to their projects. MEDA in first stage scrutinize the application & enclosures submitted by RE generator. In second stage carry out field inspection & confirm the eligibility of project and after that issue an approval to concern RE project for accreditation.

**Accreditation status:**

| **Particulars** | **Total Capacity accredited till 31st March 2020** | |
|---|---|---|
| **Source** | **Nos. Of Project** | **MW** |
| **Wind** | **225** | **556.43** |
| **Solar PV** | **72** | **123.11** |
| **Small Hydro** | **10** | **31.5** |
| **Others** | **1** | **1.668** |
| **Bio-mass** | **4** | **43.5** |
| **Bio fuel Co-generation** | **26** | **214.195** |
| **Total** | **338** | **970.403** |

**R&D (Research & Development) -**
**MEDA as a State Nodal Agency implementing New Technology programme of MNRE in the state as under:**

**R&D Programmes :**

- Solar https://mnre.gov.in/research-and-development/solar
- Wind https://mnre.gov.in/research-and-development/wind
- Small Hydro https://mnre.gov.in/research-and-development/small-hydro
- Waste to Energy https://mnre.gov.in/research-and-development/waste-to-energy
- Bio Energy https://mnre.gov.in/research-and-development/bio-energy

**Informative :-**

1) **Hydrogen Energy :-**
MNRE has been supporting a broad-based Research Development and Demonstration (R&D) programme on Hydrogen Energy and Fuel. Projects are supported in industrial, academic and research institutions to address challenges in production of hydrogen from renewable energy sources, its safe and efficient storage, and its utilization for energy a transport application through combustion or fuel cells. With respect to transportation, major work has been supported to Banaras Hindu University, IIT Delhi, and Mahindra & Mahindra. This has resulted in development and demonstration of internal combustion engines, two wheelers, three wheelers, and mini buses that run on hydrogen fuel. Two hydrogen refuelling stations have been established (one each at Indian Oil R&D Centre, Faridabad and National Institute of Solar Energy, Gurugram).
https://mnre.gov.in/new-technologies/hydrogen-energy

2) **Energy storage :-**
Energy storage can play a very important role in grid integration and balancing of variable generation sources. By increasing the system's overall flexibility, it can improve power quality, reduce peak demand, enhance capacity of distribution / transmission grids, avoid/reduce deviation penalties etc. Use of energy storage systems by residential, commercial or industrial consumers, in conjunction with renewable energy has potential to improve power quality and reliability for such consumers. This would also allow for minimization of diesel consumption from back-up power applications. Energy storage is the main component of EVs both in terms of cost and performance determination. The thrust for electric mobility utilizing indigenous modern and reliable energy storage would significantly reduce the country's dependence on imported fossil fuels and energy storage systems. The NITI Aayog is coordinating the work relating to energy storage.
https://mnre.gov.in/new-technologies/energy-storage

### 3) Ocean Energy:-

As per a study conducted by the Indian Institute of Technology, Chennai in association with CRISIL Risk and Infrastructure Solutions Limited in December 2014, the tidal power potential is estimated at around 12,455 MW. The potential areas with low/medium tidal wave strength are in the Gulf of Khambat, Gulf of Kutch & southern regions in Gujarat, Palk Bay- Mannar Channel in Tamil Nadu, and Hoogly river, South Haldia & Sunderbans in West Bengal. Tidal energy is still in Research & Development (R&D) phase and has not been implemented on a commercial scale in India. The earlier efforts for harnessing tidal power were not successful due to high capital cost ranging from Rs. 30 crore to Rs. 60 crore per MW.

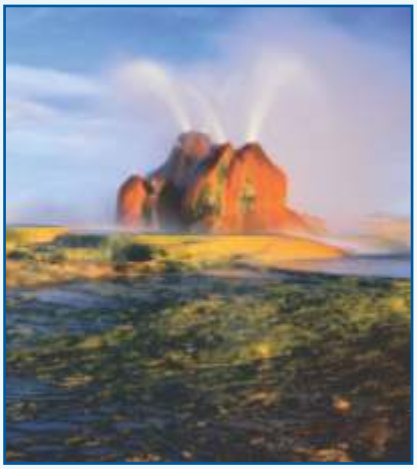
https://mnre.gov.in/new-technologies/ocean-energy

### 4) Geothermal Energy: -

Geo-thermal resources in India have been mapped by Geological Survey of India (GSI). Broad estimate suggests that there could be 10 GW geo-thermal power potential. Present efforts are towards establishing cost-competitive geo-thermal potential in India.

https://mnre.gov.in/new-technologies/geo-thermal-energy

**Geothermal Power**



**Hot Spring**

Geothermal energy is the natural heat generated within the earth due to radioactive activities. Earth has a large reservoir of geothermal heat and its potential has not been completely exploited for the process heat or power generation. The survey conducted by the Geological Survey of India regarding the available stored energy in the upper 3 km- depth range, estimates the potential of 40.9 x 1018 calorie in 13 well - defined and structurally controlled "Geothermal Provinces" [A. B. Dhaulakhandi et.al. SESI Journal 6(1): 9-27, 1996].

Among these provinces, Maharashtra shares

West Coast (Konkan) geothermal province

Narmada-Tapi Garben geothermal province

Godavari valley geothermal province.

Some of the identified sites are Tapi basin, Jalgaon, Dhule and Salbardi hot spring in Maharashtra. Nearly 340 hot springs have been identified in the country having temperatures in the range of 60-120°C

Some of the possible use patterns of geothermal energy are space heating, binary-cycle power generation, food processing, refrigeration, cold storage etc. Space heating and refrigeration have already been tried successfully at Manikaran, (Himachal Pradesh) and Puga (J&K). A pilot power plant of 5 kW based on close loop organic Rankine cycle was installed in Manikaran. Most of the geothermal sites are in low and moderate temperature range.

**Deep Hot Spring Illustration**

## Wave Power

### Overview

Sea waves are the result of transfer of mechanical energy of wind to wave energy. The wave quality varies for different periods and seasons. It is possible to have a realistic formula to calculate the overall wave energy potential. A general study of the wave nature has shown that there is potential of 40,000 MW along the Indian coasts.

A similar study along the coast of Maharashtra has shown that there are some potential sites such as Vengurla rocks, Malvan rocks, Redi, Pawas, Ratnagiri and Girye, possessing an average annual wave energy potential of 5 to 8 kW/m and monsoon potential of 15 to 20 kW/m. Considering this, the total potential along the 720 km-stretch of Maharashtra coast is approximately 500 MW for wave energy power plants. Fortunately, after decades of research and development activities all over the world, some technologies are now available commercially. We need to explore the possibility of wave energy power plants at the identified sites by inviting proposals from private investors / promoters / technology providers from all over the world. They attract the private investment to the tune of Rs3000 crores. The Govt. of Maharashtra and Govt. of India have plans to announce policies to attract private investors in this field on BOO (Build Own Operate) basis.

### Energy Potential of Sea Waves

Wave energy is, in fact, the storage of mechanical energy of wind in the sea water. Sea waves are variable in nature and their height and width changes with time and season. The power available in a sea wave is expressed as the following formula: -

The average potential along the Indian coast is around 5 to 10 kW /m. India has a coast line of approximately 7500 km. Thus, the total potential comes to around 40,000 MW. Even a 15% utilization would mean the availability of approximately 6000 MW. Generally, it has been observed that the western coast is more useful than the eastern coast. This is because the former has more stable waves and is less vulnerable to cyclones that can damage the power plant.

### Status In Maharashtra

MEDA sponsored a study, conducted by Centre for Earth Science Studies

Thiruvananthapuram, to find the wave energy potential along the Maharashtra coast. The study completed in 1994, has shown the Maharashtra coast has an annual wave potential ranging between 4 to 8 kW per metre of the length of the wave crest. During the monsoon, i.e., between June and August, the potential is quite high, i.e., 12 to 20 kW/m. The wave energy potential of the most feasible sites in Maharashtra is estimated as given in the following table: -

| Wave power at selected sites along Maharashtra coast | | | | | |
|---|---|---|---|---|---|
| **OFF SHORE Avg.Wave Power kW/m** | | | **COASTAL Avg.Wave Power kW/m** | | |
| Site | Annual | (Jun-August) | Site | Annual | (Jun-August) |
| Vengurla Rock | 8.01 | 20.61 | Girye | 5.90 | 14.21 |
| Square Rock | 6.79 | 16.64 | Vijaydurg | 5.86 | 13.58 |
| Redi | 6.35 | 16.57 | Ambolgarh | 5.74 | 13.48 |
| Malvan Rock | 6.91 | 16.73 | Kunkeshwar | 5.64 | 13.35 |
| Kura Inset | 5.79 | 13.74 | Pawa Point | 5.36 | 13.10 |
| | | | Wagapur | 5.70 | 13.10 |

The Vengurla and Malvan rocks and Redi are on the top among the offshore locations. In the other group, Pawas and Ratnagiri top the list followed by Girye and Miyet point.

DEVELOPMENT IN MAHARASHTRA

Power Generation Projects based on Wave Energy are not yet commercially established in India.

# 12. FINANCIAL REPORT

**Malani Somani Chandak & Associates**
Chartered Accountants

Date: 15/01/2021

To,
The Director General,
Maharashtra Energy Development Agency,
Yerawada,
Pune

**Subject:- Financial Statements and Audit Report for the year ended 31st March 2020.**

Dear Sir,

We are submitting herewith the Balance Sheet, Income & Expenditure Account of Maharashtra Energy Development Agency and our Audit Report thereon for the year ended 31st March 2020.

Our Audit Report is subject to and inclusive of the notes on accounts attached with the Financial Statements and Audit Observations attached as Annexure.

We are thankful to your team for co-ordination extended to us during our audit.

Thanking you,

Yours faithfully,

For Malani Somani Chandak & Associates
Chartered Accountants
F.R. No. 119584W

CA N R Malani
Partner
M. No.042589
Place: Pune

2, Dream Presidency, 1202/17 E. Apte Road,Santosh Bakery Lane, Deccan Gymkhana,Pune 411004
Ph. +91-20-25538240,25538241,25538242 | E: mscassociates@gmail.com

THE BOMBAY PUBLIC TRUSTS ACT 1950

(SCHEDULE VIII [Vide Rule 17(2) ]

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY ( Registration No. F-11906 )

### CONSOLIDATED BALANCE SHEET AS AT 31ST MARCH, 2020

| FUNDS & LIABILITIES | SCD. | AMOUNT (RS) | AMOUNT (RS) | PROPERTY & ASSETS | SCD. | AMOUNT (RS) | AMOUNT (RS) |
|---|---|---|---|---|---|---|---|
| TRUSTS FUNDS OR CORPUS | | | | IMMOVABLE PROPERTIES (at cost) | F (A) | | 150,317,929 |
| TRUST FUNDS | | | | | | | |
| Balance as per last Balance Sheet | | 208,921,993 | 208,921,993 | FURNITURE & FIXTURES | F (B) | | 12,798,559 |
| Adjust-ment during the year | | | | OTHER FIXED ASSETS | F(C) | | 839,082,302 |
| | | | | BUILDING WORK IN PROGRESS | F(D) | | 302,597,000 |
| OTHER EARMARKED FUNDS | | | | ADVANCES | G | 20,597,320 | 20,597,320 |
| Development Fund (created under the provision of the Trust Deed of Scheme or out of the income ) | | 2,453,969,771 | | CASH AND BANK BALANCE | | | |
| | | | | a) In Current / Saving Account | | 547,476,831 | |
| Infrastructure Rd/WPP fund | | 177,137,801 | | b) Fixed Deposits | | 8,868,543,622 | |
| Publicity Fund | | 4,554,459 | | C) Cash in hand | | 15,520,904 | |
| Depreciaton Fund | | 748,721,326 | 3,384,383,357 | d) Cheque in hand | | 10,781,711 | 9,442,323,068 |
| LIABILITIES | | | | OTHER CURRENT ASSETS | H | 460,157,366 | 460,157,366 |
| For Expenses | A | 314,040,625 | | | | | |
| For Beneficiary Contributions | B | 536,133,016 | | | | | |
| For Rent & Deposits | C | 399,946,437 | | DUTIES & TAXES | | | 171,223,418 |
| For Unspent amount received against Government Schemes | D | 740,491,789 | 1,990,611,867 | | | | |
| GRANTS PAYABLE TO GRANTORS INCLUDING GREEN CESS FUND | E | 854,399 | 854,399 | | | | |
| INCOME & EXPENDITURE ACCOUNT | | | | | | | |
| Balance as per last Balance Sheet | | 10,193,065,887 | | | | | |
| Add : Deficit as per Income and Expenditure a/c | | (4,378,740,541) | | | | | |
| Add :Income in respect of previous year | | - | 5,814,325,346 | | | | |
| TOTAL | | | 11,399,096,962 | TOTAL | | | 11,399,096,962 |

Notes forming part of Balance Sheet

As per our report of even date
FOR MALANI SOMANI CHANDAK & ASSOCIATES
*Chartered Accountants*
*F.R. No. 119584W*

NANDKISHOR R MALANI
Partner
M. No.042589
Place : Pune
Date: 15/01/2021

The above Balance Sheet to the Best of our belief contains a true account of the Funds and Libilities and of the Property and Assets of the Trust.
FOR MAHARASHTRA ENERGY DEVELOPMENT AGENCY

Director General
Place : Pune
Date : 15/01/2021

THE BOMBAY PUBLIC TRUSTS ACT, 1950

(SCHEDULE IX (Vide Rule 17(2) )

MAHARASHTRA ENERGY DEVELOPMENT AGENCY ( REGISTRATION NO. F - 11906 )

CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2020

| EXPENDITURE | SCHE-DULE | AMOUNT (RS) | INCOME | SCHE-DULE | AMOUNT (RS) |
|---|---|---|---|---|---|
| TO EXP IN RESPECT OF PROPERTIES | | | Interest | K | 692,761,475 |
| Rates and Taxes | | 342,178 | | | |
| Depreciation | F | 84,822,378 | Receipt against Government Schemes | L | 1,134,536,250 |
| Establishment Expenses | I | 382,890,839 | Income from Other Sources (in details as far as possible) | M | 106,968,706 |
| Expenditure on objects of the Trusts | | | | | |
| a) Religious | | | | | |
| b) Educational | | | | | |
| c) Medical Relief | | | | | |
| d) Relief of Poverty | | | Deficit carried over to | | 4,378,740,541 |
| e) Other Charitable objects | J | 5,844,951,577 | Balance Sheet | | |
| TOTAL | | 6,313,006,972 | TOTAL | | 6,313,006,972 |

Notes forming part of Income and Expenditure Account

As per our report of even date

FOR MALANI SOMANI CHANDAK & ASSOCIATES

*Chartered Accountants*

F.R. No. 119584W

NANDKISHOR R MALANI

Partner

M. No.042589

Place : Pune

Date: 15/01/2021

FOR MAHARASHTRA ENERGY DEVELOPMENT AGENCY

Director General

Place : Pune

Date : 15/01/2021

MAHARASHTRA ENERGY DEVELOPMENT AGENCY

SCHEDULES FORMING PART OF CONSOLIDATED BALANCE SHEET

AS AT 31 st MARCH 2020

| PARTICULAR | AMT (RS) | AMT (RS) |
|---|---|---|
| **SCHEDULE A** | | |
| **LIABILITY FOR EXPENSES** | | |
| RECOVERY OF EMPLOYEES ON DEPUTATION | 6,618 | |
| GROUP INSURANCE SCHEME | 929 | |
| LIB E C Act 2001 BEE- 1604 | 66,426,541 | |
| LIB ENERGY CONSERVATION FUND 2012 | 56,794,410 | |
| LIB INFRASTRUCTURE ROAD MAINTAINANCE | 28,760,042 | |
| RPO RENEWABLE PURCHASE OBL | 23,116,664 | |
| EC ENERGY EFFNT ST LIGHT FITTING 15-16 | 15,295,794 | |
| LIB SERVICE TAX | 3,000 | |
| LIB GRANT FOR SPECIFIC PURPOSE | 15,595 | |
| LIB - OUTSTANDING STATE GRANT EXPS 1433 | 10,276,258 | |
| LIB ROAD REPAIR & MAINT. 1010 A[POLICY 2015] | 81,920,000 | |
| LIB TDS 2% CONTRACTOR PAY-1461 | 9,079,341 | |
| LIB.TDS CGST1% ON CONTRACTOR (DIVISIONAL OFF.) | 34,710 | |
| LIB TDS CONTRACTOR PROFESSIONAL PAY 1464-10% | 367,860 | |
| LIB.TDS.IGST ON CONTRACTOR (DIVISIONAL OFF.) | (94,271) | |
| LIB. T D S ON CONTRACTOR [DIVISIONAL OFF.] | 33,665 | |
| LIB.TDS ON NON-RESIDENT SEC.-195 (10%) | (2,902,266) | |
| LIB.TDS ON PROFESSIONAL FESS | (157,391) | |
| LIB TDS ON RENT | 27,844 | |
| LIB.TDS SGST1% ON CONTRACTOR (DIVISIONAL OFF.) | 14,328 | |
| LIB TDS ON SALARY | 110,000 | |
| LIB.BANK STALE CHEQUE | 2,425,000 | |
| LIB TDS PAID | (62,728) | |
| LIB OTHER DEDUCTION | 12,720 | |
| CHEQUES FOR CLEARING | 1,143,134 | |
| LABOUR WELFARE CESS | 70,051 | |
| LIB. OUTSTANDING FUND [BANK] | 21,320,633 | |
| SALARY PAYABLE | 1,417 | |
| SUNDRY PAYABLES | 726 | 314,040,625 |
| **Total of Schedule A** | | **314,040,625** |

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| PARTICULAR | AMT (RS) | AMT (RS) |
|---|---|---|
| **SCHEDULE B** | | |
| **LIABILITY FOR BENEFICARY CONTRIBUTION** | | |
| BEN. CONT.- SOLAR POWER PLANT-4274 | 19,619,378 | |
| BEN CONT PROJECT LIABILITIES | 106,483,467 | |
| BEN CONTRIBUTION SOLAR POWER PLANT | 59,232,431 | |
| BEN CONTRIBUTION SOLAR ROOF TOP | 34,491,867 | |
| BEN CONTRIBUTION SOLAR WATER HEATER | 670,715 | |
| BEN KHASDAR NIDHI | 2,926,666 | |
| BEN. CONT. SOLAR POWER PLANT 1234 | 75,423,524 | |
| BEN.CON.SOLAR HYBRID SYSTEM | 7,650,000 | |
| BEN.CONT WIND SOLAR HYBRID SYSTEM | 127,244 | |
| BEN.CONT,SOLAR ROOFTOP | 16,289,600 | |
| DEV FUND SPV SOLAR POWER PLANT | 7,602,320 | |
| HIGHMAST PROJECT | 3,300,000 | |
| MNRE BIOGAS POWER GENRATION | 356,574 | |
| MNRE GRID CONNECT.SOLAR ROOFOP PLANT PROG. | 14,223,977 | |
| MNRE SOLAR WATER HEATING SYSTEM PROJ EXP 6016 | 20,222,474 | |
| ON GRID GCRT KINWAT | 2,583,000 | |
| OTHER BIOGAS PROJECT & ON GRID GCRT KINWAT | 86,152 | |
| RURAL VILLAGE ELECTRIFICATION 7091 | 38,026,800 | |
| SPV SOLAR POWER PLANT | 41,492,735 | |
| SPV SOLAR WATER PUMPING SYSTEM | 43,824,497 | |
| OTHER PAYABLES | 41,499,595 | 536,133,016 |
| | | |
| **Total of schedule B** | | **536,133,016** |

| PARTICULAR | AMT (RS) | AMT (RS) |
|---|---|---|
| **SCHEDULE C** | | |
| **OTHER LIABILITIES- For Rent and Other Deposits** | | |
| EARNEST MONEY DEPOSIT - 1301 | 16,929,437 | |
| PENALTY RECOVERED-1305 | 1,065,635 | |
| LIB.SECURITY DEPO.(ROOF TOP) | 17,989,469 | |
| LIB SECURITY DEPOSIT-1302 | 72,542,526 | |
| LIB WPP SECURITY DEPO 1006 A [POLICY 2015] | 90,150,000 | |
| LIB WPP SECURITY DEPOSIT 1006 | 201,108,750 | |
| PENALTY [DIVISIONAL OFFICER ENQUIRY] | 10,000 | |
| C P F [Deput. M S E B] | (4,840) | |
| TECHNICAL SERVICE CHARGES DEPOSIT | 155,460 | 399,946,437 |
| | | |
| **Total of schedule C** | | **399,946,437** |

| PARTICULAR | AMOUNT (RS.) | AMOUNT (RS) |
|---|---|---|
| SCHEDULE D | | |
| UNSPENT AMOUNT RECEIVED AGAINST GOVERNMENT SCHEMES | | |
| UNSPENT AMOUNT RECEIVED FROM CENTRAL GOVT | | |
| CENT.SUB.- SAHAJ BIJLEE SAUBHGYA | 256,310,522 | 256,310,522 |
| | | |
| UNSPENT AMOUNT RECEIVED FROM STATE GOVT | | |
| GREEN CESS FUND 2019-20 | 357,549,000 | 357,549,000 |
| | | |
| UNSPENT AMOUNT BENEFICIARY SHARE | | |
| BEN CONT MAJID MEMON MP FUND | 1,747,546 | |
| BEN. CONT.- SOLAR POWER PLANT 4274 | 90,113,844 | |
| BEN.CONT.SOLAR ROOFTOP GRID- | 34,770,877 | 126,632,267 |
| | | |
| | | |
| | | |
| Total of schedule D | | 740,491,789 |
| | | |
| | | |
| | | |

| PARTICULAR | AMT (RS) | AMT (RS) |
|---|---|---|
| | | |
| SCHEDULE E | | |
| GRANTS PAYABLE TO GRANTORS | | |
| LIB GREEN CESS FUND 1419 | 815,124 | |
| LIB TSP GRANT 1606 | 39,275 | |
| | | 854,399 |
| | | |
| Total of schedule E | | 854,399 |
| | | |
| | | |



## Maharashtra Energy Development Agency
### SCHEDULE - F : FIXED ASSETS

| Particulars | Gross as on 01-04-2019 | Additions | Adjust. | Ded. For the year | Total as on 31.03.2020 | Depreciation as on 01.04.2019 | Depr writt back during the year | Depreciation for the year | Total Depn as at 31.03.2020 |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 (1+2-3-4) | 6 | 7 | 8 | 9 |
| IMMOVABLE PPERTIES | | | | | | | | | |
| Building [ H O ] | 64,80,407 | | - | - | 64,80,407 | 43,17,435 | - | 2,26,297 | 45,33,732 |
| Land [ V'durg ] | 19,25,678 | | - | - | 19,25,678 | - | - | - | - |
| Building [ C'wadi ] | 36,13,346 | | - | - | 36,13,346 | 32,42,286 | - | 37,056 | 32,79,842 |
| Land [ C'wadi ] | 14,01,950 | | - | - | 14,01,950 | - | - | - | - |
| Land [ Sautada ] | 1,66,04,242 | | - | - | 1,66,04,242 | - | - | - | - |
| Land [ Motha ] | 24,10,482 | | - | - | 24,10,482 | - | - | - | - |
| Building [ V'durg ] | 31,06,818 | | - | - | 31,06,818 | 29,10,711 | - | 19,611 | 29,30,322 |
| Road [ Thosegar ] | 25,49,053 | | - | - | 25,49,053 | - | - | - | - |
| Building guest house | 41,80,509 | | - | - | 41,80,509 | 31,17,107 | - | 1,06,339 | 32,23,446 |
| Mumbai Office | 65,71,064 | 2,69,78,710 | - | - | 3,35,49,774 | 49,50,342 | - | 28,59,943 | 78,10,285 |
| Land [ Panumbre ] | 3,88,335 | | - | - | 3,88,335 | - | - | - | - |
| Land [ G' pachgani ] | 4,44,947 | | - | - | 4,44,947 | - | - | - | - |
| Land MEDA HO | 5,40,45,000 | | - | - | 5,40,45,000 | - | - | - | - |
| Building at Kolhapur office | 32,96,500 | | - | - | 32,96,500 | 21,47,082 | - | 1,14,842 | 22,61,924 |
| Peshwe Park Buiding | 1,42,62,817 | | - | - | 1,42,62,817 | 1,05,85,898 | - | 3,67,692 | 1,09,53,590 |
| H O Land (fencing) | 1,74,886 | | - | - | 1,74,886 | 1,07,132 | - | 6,775 | 1,13,907 |
| Aurangabad | 43,050 | | | | 43,050 | - | | - | - |
| Mumbai Office | - | 18,40,144 | | | 18,40,144 | - | | 91,007 | 91,007 |
| SUB TOTAL (A) | 12,14,99,075 | 2,88,18,854 | - | - | 15,03,17,929 | 3,13,78,493 | - | 38,20,662 | 3,51,99,156 |
| FURNITURE AND FIXTURES | | | | | | | | | |
| Furniture & Fixture | 74,35,402 | 37,108 | - | - | 74,72,510 | 55,31,723 | - | 2,12,553 | 55,44,277 |
| Furniture & Fixture at Divisions | 23,48,623 | 19,61,077 | - | - | 53,26,049 | 4,00,331 | | 4,83,022 | 8,83,353 |
| SUB TOTAL (B) | 97,84,025 | 19,98,085 | - | - | 1,27,98,559 | 57,32,054 | - | 6,95,575 | 64,27,630 |

| | Particulars | Gross as on 01-04-2019 | Additions | Adjust. | Ded. for the year | Total as on 31.03.2020 | Depreciation as on 01.04.2019 | Depr written back during the year | Depreciation for the year | Total Dep. as at 31.03.2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| C | Other Fixed Assets | | | | | | | | | |
| 21 | Vehicles | 2,38,85,972 | | - | 77,402 | 2,38,08,570 | 1,14,36,999 | - | 18,67,346 | 1,33,04,345 |
| 22 | Project Equipments | 21,90,807 | | - | - | 21,90,807 | 15,21,683 | - | 1,00,369 | 16,22,052 |
| 23 | Office Equipments | 67,09,597 | 57,421 | - | - | 68,06,958 | 49,47,625 | - | 2,72,502 | 52,20,126 |
| 24 | Electrical Fittings | 5,77,885 | - | - | - | 5,77,885 | 5,14,360 | - | 6,352 | 5,20,712 |
| 25 | Computers | 1,91,16,579 | 22,14,237 | - | - | 2,13,40,817 | 1,46,61,180 | - | 26,93,914 | 1,72,92,496 |
| 26 | Computer Software Purchased | 4,87,901 | - | - | - | 4,87,901 | 2,81,885 | - | 1,41,487 | 4,23,372 |
| 27 | Software Purchased | 21,31,96,025 | 3,17,75,875 | - | - | 24,49,72,000 | 5,87,88,090 | - | 2,48,81,564 | 13,36,69,654 |
| 28 | P & M [ V'dung ] | 5,58,25,378 | - | - | - | 5,58,25,378 | 5,58,25,378 | - | - | 5,58,25,378 |
| 29 | Elect Inst. [ V'dung ] | 96,19,893 | - | - | - | 96,19,893 | 96,19,893 | - | - | 96,19,893 |
| 30 | P & M [ C'wadi ] | 7,80,74,338 | - | - | - | 7,80,74,338 | 7,80,74,338 | - | - | 7,80,74,338 |
| 31 | P & M [ H.O ] | 9,22,231 | - | - | - | 9,11,531 | 9,11,531 | - | - | 9,11,531 |
| 32 | P & M [ Matha ] | 9,80,38,000 | - | - | - | 9,80,38,000 | 9,80,38,000 | - | - | 9,80,38,000 |
| 33 | Elect Inst. [ C'wadi ] | 1,59,59,070 | - | - | - | 1,59,59,070 | 1,59,59,070 | - | - | 1,59,59,070 |
| 34 | Elect Inst. [ Thoregar ] | 69,387 | - | - | - | 69,387 | 69,387 | - | - | 69,387 |
| 35 | P & M [ G'pachgani ] | 8,04,72,000 | - | - | - | 8,04,72,000 | 8,04,72,000 | - | - | 8,04,72,000 |
| 36 | Elect Inst [ G'pachg ] | 1,53,14,428 | - | - | - | 1,53,14,428 | 1,53,14,428 | - | - | 1,53,14,428 |
| 37 | Elect Inst. [ Matha ] | 5,26,622 | - | - | - | 5,26,622 | 5,26,622 | - | - | 5,26,622 |
| 38 | P & M [ C'wadi II] | 14,24,67,000 | - | - | - | 14,24,67,000 | 14,24,46,959 | - | 97 | 14,24,46,456 |
| 39 | Books & periodicals | 1,73,525 | - | - | - | 1,73,525 | 1,73,525 | - | - | 1,73,525 |
| 40 | Peshwe Park Machinery | 74,04,570 | - | - | - | 74,04,570 | 74,04,570 | - | - | 74,04,570 |
| 41 | Seven stage Evaporator Machine | 2,92,51,334 | - | - | - | 2,92,51,334 | 2,92,51,334 | - | - | 2,92,51,334 |
| 42 | Other Fixed Assets At Divisions | 34,00,907 | 4,00,180 | - | - | 32,07,287 | 3,30,134 | - | 6,04,707 | 9,34,841 |
| | SUB TOTAL (C) | 80,26,45,881 | 3,43,13,823 | | 77,402 | 83,90,10,302 | 62,67,88,940 | | 8,08,08,166 | 70,70,94,529 |
| 43 | Green Building WIP | 19,95,00,000 | 10,30,97,000 | - | - | 30,25,97,000 | - | - | - | - |
| | SUB TOTAL (D) | 19,95,00,000 | 10,30,97,000 | - | - | 30,25,97,000 | - | - | - | |
| | GRAND TOTAL (A+B+C+D) | 1,13,36,26,980 | 17,04,28,762 | - | 77,402 | 1,30,47,05,780 | 66,38,98,928 | - | 8,13,22,970 | 73,87,21,355 |

| PARTICULAR | AMOUNT (RS.) | AMOUNT (RS) |
|---|---|---|
| **SCHEDULE G** | | |
| **ADVANCES- To Employees** | | |
| PROJECT OFFICE | 477,859 | |
| H.O. EMPLOYEES | 161,869 | |
| COMPUTER ADVANCE | 246,248 | |
| FESTIVAL ADVANCE | 214,750 | |
| ADVANCE FOR FUEL | 170,146 | |
| ADVANCE TO DIRECTOR GENERAL | 15,160 | |
| HOUSE BUILDING ADVANCE | 19,023,288 | |
| ADVANCES TO SUPPLIERS | 288,000 | 20,597,320 |
| | | |
| **Total of Schedule G** | | **20,597,320** |

| PARTICULAR | AMOUNT (RS.) | AMOUNT (RS) |
|---|---|---|
| **SCHEDULE H** | | |
| **OTHER CURRENT ASSETS** | | |
| DEPOSITS | 2,432,398 | |
| OTHER CURRENT ASSETS | 457,724,968 | 460,157,366 |
| | | |
| **Branch and Division** | | |
| PROJECT OFFICE-AKOLA DIVISIONAL OFFICE | (7,671,232) | |
| PROJECT OFFICE-AMRAVATI DIVISIONAL OFFICE | (12,081,910) | |
| PROJECT OFFICE-AURANGABAD DIVISIONAL OFFICE EXPS. | (18,617,268) | |
| PROJECT OFFICE BEED DIVISIONAL OFFICE | (396,000) | |
| PROJECT OFFICE BHANDARA DIVISIONAL OFFICE | (1,226,000) | |
| PROJECT OFFICE-CHANDRAPUR DIVISIONAL OFFICE EXPS. | (4,637,176) | |
| PROJECT OFFICE-KOLHAPUR DIVISIONAL OFFICE EXPS. | (14,575,190) | |
| PROJECT OFFICE-LATUR DIVISIONAL OFFICE | (11,122,407) | |
| PROJECT OFFICE-NAGPUR DIVISIONAL OFF EXPS | (143,207,769) | |
| PROJECT OFFICE-NASIK DIVISIONAL OFFICE EXPS | (17,047,316) | |
| PROJECT OFFICE PARBHANI DIVISIONAL OFFICE | (193,068) | |
| PROJECT OFFICE-PUNE DIVISIONAL OFFICE EXPS | (14,320,516) | |
| PROJECT OFFICE RATNAGIRI DIVISIONAL OFFICE | (131,000) | |
| PROJECT OFFICE SOLAPUR DIVISIONAL OFFICE | (69,000) | |
| PROJECT OFFICE THANE DIVISIONAL OFFICE. | (500,000) | |
| PROJECT OFFICE WARDHA DIVISIONAL OFFICE | (878,992) | |
| PROJECT OFFICE YAVATMAL DIVISIONAL OFFICE | (948,499) | |
| PROJECT OFF- MUMBAI DIVISIONAL OFFICE | (27,121,556) | |
| PROJ.OFFICE -REGIONAL DIRECTOR OFFICE-PUNE | (2,966,722) | |
| PUNE HO | 277,711,623 | 0 |
| | | |
| **Total of Schedule H** | | **460,157,366** |

## MAHARASHTRA ENERGY DEVELOPMENT AGENCY
### SCHEDULES FORMING PART OF CONSOLIDATED INCOME EXPENDITURE ACCOUNT
### FOR THE YEAR ENDED 31 st MARCH 2020

| PARTICULAR | AMT (RS) | AMT (RS) |
|---|---|---|
| **SCHEDULE I** | | |
| **ESTABLISHMENT EXPENSES** | | |
| ADDITIONAL ALLOWANCE 5609 | 29,325 | |
| ADVERTSING EXPENSES | 1,971,581 | |
| AIR FARE CHARGES | 48,336 | |
| AUDIT FEES 5656 | 134,745 | |
| BANK CHARGES | 63,086 | |
| BOOKS & PERIODICAL 5643 | 29,802 | |
| COMPUTER EXPENSES 5645 | 1,812,126 | |
| CONVEYANCE | 25,427 | |
| EC ACT EXPENSES | 260,914 | |
| ELECTRICITY EXPENSES | 1,555,237 | |
| ENERGY CONSERVATION PROGRAM | 900,000 | |
| EXHIBITION CHARGES | 5,602 | |
| GST EXPENSES | 103,525,604 | |
| INSURANCE 5642 | 700 | |
| INTEREST ON LATE PAYMENT OF TDS | 17,973 | |
| INTERNET EXPENSES 5671 | 372,642 | |
| ITC W/O | 63,076 | |
| LEAVE TRAVEL CONCESSION [L T C] 5610 | 8,376 | |
| MEETING EXPENSES 5644 | 511,749 | |
| MUNCIPAL TAX | 24,713 | |
| NEWS PAPER EXPENSES | 36,113 | |
| OFFICE EXPENSES | 92,355,058 | |
| PETROL EXPENSES | 906,149 | |
| POSTAGE & TELEGRAM 5622 | 537,537 | |
| PRINTING STATIONERY | 1,536,976 | |
| PROFESSIONAL CHARGES 5650 | 1,425,517 | |
| PROJECT EXPS ( ADVT ) | 61,568 | |
| PUBLIC RELATIONS EXPENSE 5655 | 1,093,107 | |
| PRIOR PERIOD EXPENDITURE | 739,715 | |
| RENT | 9,782,388 | |
| REPAIR & MAINTENANCE | 1,106,136 | |
| ROUND OFF | (76) | |
| STAFF EXPENSES | 138,034,201 | |
| STAFF WELFARE EXPENSES 5603 | 73,074 | |
| TELEPHONE EXPENSES | 1,162,659 | |
| TRAVELLING EXPENSES | 10,611,636 | |
| VEHICLE EXPENSES | 11,705,257 | |
| XEROX EXPENSES | 362,811 | 382,890,839 |
| | | |
| **Total of Schedule I** | | **382,890,839** |

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| PARTICULAR | AMT (RS) | AMT (RS) |
|---|---|---|
| **SCHEDULE J** | | |
| **Schedule J1** | | |
| **EXPENSES INCURRED FROM STATE FUND** | | |
| **13TH FINANCE COMM.16-17** | | |
| PROJ.EXP.MSEDCL PURCHASE ELECTRICITY-RE.13TH.16-17 | 350,000,000 | 350,000,000 |
| **13TH FINANCE COMMISSION 2018-19** | | |
| PROJ.EXPS.ATAL SOLAR KRUSHI PUMP Y.-2.-13.FIN.18-19 | 434,945,097 | |
| PROJ.EXPS.BIOGAS POWER PROJECT.13TH FIN.COM.2018-19 | 4,800,000 | |
| PROJ.EXPS NEW & RENW.E.(REC FUND)MSEDCL-13 FIN18-19 | 865,200,000 | |
| PROJ.EXPS.PM S.BIJLI SAUBHAGYA -13TH FIN.2018-19 | 436,032,660 | |
| PROJ.EXPS.SOLAR THERMAL SYS.PROG 13.FIN.COMM(18-19) | 610,169 | |
| PROJ.EXPS SOLAR WATER HEATER SYS.6016-13TH FIN18-19 | 68,268,625 | |
| PROJ.EXPS.SPV POWER PLANT GOVT.BD-13TH FIN.COM18-19 | 9,921,976 | 1,819,778,527 |
| **GREEN CESS FUND 2017-18** | | |
| PROJ.EXPS.- INFRAS.ROAD REPAIR [ GCF] 17-18 | 38,719,000 | |
| PROJ.EXPS RAJBHAVAN PUNE SPECIAL PROJ GCF-2017-18 | 18,137,000 | |
| PROJ.EXPS WIND POWER PROJ EVACUTION-GCF 17-18 | (67,729,000) | (10,873,000) |
| **GREEN CESS FUND 2018-19** | | |
| GREEN CESS FUND 2018-19 REFUND STATE GOVT. | 222,018,600 | |
| PROJ.EXPS BAGASSE CO-GEN.P.P.GCFUND.18-19.EVACUCATI | 68,096,500 | |
| PROJ.EXPS BAGASSE CO-GEN P.PROJ.CAP.SUB.GCF2018-19 | 20,000,000 | |
| PROJ.EXPS.C.M.SOLAR AGRICUL. FEEDER SCHEME-GCF18-19 | 990,700,000 | |
| PROJ.EXPS.INFRAS.ROAD REPAIR [GCF]2018-19 | 183,353,936 | |
| PROJ.EXPS SMALL HYDRO PROJ.CAPITAL SUB-GCF-18-19 | 10,000,000 | |
| PROJ.EXPS SMALL HYDRO PROJ.EVAUCATION-GCF2018-19 | 13,772,000 | |
| PROJ.EXPS WIND POWER PROJ.EVACUTION-GCF 2018-19 | 131,348,200 | 1,639,289,236 |
| **GREEN CESS FUND 2019-20** | | |
| PROJ.EXPS.BAGASSE CO GEN P PROJ CAP SUB GCF 19-20 | 10,000,000 | |
| PROJ.EXPS. BIOGAS PROJECT GCF 2019-20 | 19,520,000 | |
| PROJ.EXPS.SMALL HYDRO PROJ.CAPITAL-GCF 2019-20 | 10,000,000 | |
| PROJ.EXPS.SMALL HYDRO PROJ.EVAUCATION-GCF2019-20 | 10,000,000 | 49,520,000 |
| **N R S E 2012-13** | | |
| PROJ.EXPS SITE SURVEY | 308,220 | 308,220 |
| **N R S E 2013-14** | | |
| Proj.Exps Energy Conservation 5062 | 167,746 | 167,746 |
| **N R S E 2014-15** | | |
| E C Save Energy Pro | 872,300 | |
| E C - E C Award State Level 5062 | 134,725 | |
| E C - Public Awareness Prog 5062 | 15,530 | 1,022,555 |
| **N R S E 2015-16** | | |
| Energy Conversion | (5,000) | |
| Proj Expenses Exhibition Expenses | 6,190 | |
| Proj.Exps.Save Energy Prog[Energy Audit] | 598,754 | |
| Proj.Exps SME Prog.[Walk Thru Audit] | 228,000 | |
| E C-Energy Efficiency St.Light Fitting [T 15-16] | 3,340,360 | 4,168,304 |
| **N R S E 2016-17** | | |
| E.C Energy Audit 2016-17 | 114,406 | 114,406 |

| | | |
|---|---|---|
| **N R S E 2017-18** | | |
| PROJ.EXPS.DIVISIONAL OFFICE PUNE.N-17-18 | (250) | |
| PROJ EXPS SPV POWER PLANT (N 17-18) | 18,359,494 | |
| PROJ.EXPS WIND MONITORING [N 17-18] 5043 | 89,160 | |
| Energy Conservation 5062 | 9,634,732 | |
| Save Energy Programme | 150,000 | |
| Walk Through Energy Programme | 15,254 | 28,248,390 |
| **N R S E 2018-19** | | |
| PROJ.EXPS.ENERGY CONSERVATION-N 2018-19 | | |
| EC.EC MESURES IN GOVT./SEMI GOVT.BLDG.N-18-19 | 12,354,029 | |
| E C ENERGY CONSERVATION AWARD PROG.N-2018-19 | 2,736,370 | |
| E C-PUBLIC AWARNESS PROG. N 2018-19 | 4,304,096 | |
| EC .EC.LED PILOT PROJEC.89.VILLAGES.NRSE-18-19 | 244,491,980 | |
| N R S E 2018-19 REFUND STATE GOVT. | 8,019,000 | |
| PROJ.EXPS.ADVT.& PUBLICITY 5506[N 18-19] | 12,567,134 | |
| PROJ.EXPS.BIOMASS BRIQUETTING [N-2018-19] | 1,392,669 | |
| PROJ.EXPS SOLAR POWER PLANT GOVT.BLDG.-N-2018-19 | 13,801,933 | |
| EC- Save Energy Audit (N 2018-19) | 253,982 | 299,921,193 |
| **N R S E 2019-20** | | |
| E C- Save Energy Prog [Energy Audit]19-20 | 1,125,000 | |
| Proj.Exps.Exhibition Expenses | 103,927 | |
| E C-Energy Audit-[Save Energy] Prog.2018-19 | 392,000 | 1,620,927 |
| **SOLAR KRUSHI PUMP YOJANA-2018-19** | | |
| PROJ.EXPS.ATAL SAUR KRUSHI PUMP Y2-7.85CR.SKPY18-19 | 68,665,983 | |
| PROJ.EXPS.ATAL SAUR KRUSHI PUMP Y-SKPY 2018-19 | 96,536,550 | |
| Proj.Exps.Save Energy Prog[Energy Audit] | 246,500 | |
| EC-Energy Audit [Save Energy Prog] 16-17 | 7,130 | 165,456,163 |
| | | |
| **Total of Schedule J1** | | **4,348,742,667** |
| | | |
| **Schedule J2** | | |
| **EXPENSES INCURRED FROM CENTRAL FUND** | | |
| MNRE Atal Solar Krushi Pump Yoj-2 | 304,865,137 | |
| MNRE Biogass Power Gen Project 6075 | 2,725,000 | |
| MNRE Grid Connect Solar Rooftoop 40.36 Cr | 279,294,588 | |
| MNRE Grid Connect Solar Rooftop Sys 27.00 Cr | 229,144,382 | |
| MNRE PM Sahaj Bijli Saubhagya Scheme (DDUGJY) | 165,558,574 | |
| MNRE Rural Village Electrification Prog. 6091 | 1,291,875 | |
| MNRE Skill Development Prog. | 5,077,748 | |
| MNRE Solar Water Heating System Proj Exp 6016 | (3,858,073) | |
| MNRE S P V Power Pumps-6099 | 61,292,000 | |
| MNRE Wind Solar Hybrid System-6044 | 8,713,600 | |
| MNRE Exhibition Prog. Expenses 6502 | 40,000 | 1,054,144,831 |
| | | |
| **Total of Schedule J2** | | **1,054,144,831** |

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|---|---|---|
| **Schedule J3** | | |
| **EXPENSES INCURRED FROM BENEFICIARY FUND** | | |
| BEN.PAY.ATAL SOUR KRUSHI PUMP YOJ.2 | 50,539,770 | |
| BEN.PAY SOLAR WATER HEATING SYS. INDUSTRIAL | 719,097 | |
| BEN. CONT.- SOLAR POWER PLANT 4274 | 3,371,517 | |
| BEN.PAY.ENERGY AUDIT-8261 | 35,000 | |
| BEN.PAY PHOTOVOLTAIC STEET LIGHT | 791,687 | |
| BEN.PAY.SOLAR POWER PLANT 8274 | 13,979,773 | |
| BEN.PAY ENERGY AUDIT | 12,500 | |
| BEN PAYT | 252,725 | |
| BEN PAY SOLAR POWER BASE PUMPING SYSTEM | 20,391,175 | |
| BEN.PAY.SOLAR POWER PLANT 8074 | 165,254,239 | |
| BEN.PAY SOLAR WATER HEATING SYS. INDUSTRIAL | 280,000 | |
| BEN.PAY.SOLAR POWER PLANT | 13,752,703 | 269,380,185 |
| | | |
| **Total of Schedule J3** | | **269,380,185** |
| | | |
| **Schedule J4** | | |
| **EXPENSES INCURRED FROM OWN / DEV FUND** | | |
| DEV FUND ADVT & PUBLICITY EXPENSES-7506 | 13,787,306 | |
| DEV FUND CHALKEWADI PROJECT EXPS 7047 | 5,119,148 | |
| DEV FUND-C M SOLAR KRUSHI VAHINI PROJ. | (25,000,000) | |
| DEV FUND ENERGY CONSERVATION 7062 | 73,424,003 | |
| DEV FUND FOREIGN TOUR | 11,590,613 | |
| DEV FUND FOUNDATION DAY | 362,141 | |
| DEV FUND G'PACHGANI W F EXPS 7048 | 27,600 | |
| DEV FUND MOTHA WIND FARM EXPS 7049 | 2,143,009 | |
| DEV FUND PROFESSIONAL CHARGES | 101,000 | |
| DEV FUND RAJBHAVAN,PUNE.SOLAR POWER PROJ. | 419,000 | |
| DEV FUND RURAL VILLAGE ELECTIFICATION 7091 | 1,085,791 | |
| DEV FUND SOLAR LANTERN | 724,381 | |
| DEV FUND SOLAR POWER SCIENCE KIDS ZONE PLANT,KORADI | 50,000,000 | |
| DEV FUND SPV SOLAR POWER PLANT | 16,858,964 | |
| DEV FUND SPV WATER PUMPING SYS | 12,872,376 | |
| DEV.FUND - STAFF WELFARE ACTIVITIES | 2,601,039 | |
| DEV FUND TRAINING PROG. EXPENSES | 384,423 | |
| DEV FUND VIJAYDURG PROJECT EXPS 7046 | 625,278 | |
| DEV FUND WIND MONITORING STATION7043 | 195,000 | |
| FINANCIAL ASSISTANCE FOR WELFARE ACTIVITIES | 3,728,960 | |
| DEV FUND ENERGY CONSERVATION 7062 | (916,337) | |
| DEV FUND SPV WATER PUMPING SYS | (525,805) | |
| DEV FUND EXIBITION EXPENSES 7502 | 51,450 | |
| DEV FUND EXIBITION EXPENSES 7502 | 38,945 | |
| DEV FUND EXIBITION EXPENSES 7502 | 2,890,819 | |
| DEV FUND EXIBITION EXPENSES | 94,792 | 172,683,894 |
| | | |
| **Total of Schedule J4** | | **172,683,894** |
| | | |
| **Total of Schedule J** | | **5,844,951,577** |

| PARTICULAR | AMT (RS) | AMT (RS) |
|---|---|---|
| | | |
| SCHEDULE K | | |
| INTEREST RECEIVED | | |
| FROM BANK AND INVESTMENTS | 692,761,475 | 692,761,475 |
| | | |
| Total of Schedule K | | 692,761,475 |
| | | |
| | | |
| | | |

| PARTICULAR | AMT (RS) | AMT (RS) |
|---|---|---|
| SCHEDULE L | | |
| RECEIPTS AGAINST GOVERNMENT SCHEMES | | |
| | | |
| SCHEDULE L1 | | |
| RECEIPTS FROM CENTRAL GOVERMENT | | |
| CENT SUB BIOGASS POWER GENERATION-4075 | 2,725,000 | |
| CENT.SUB.- SAHAJ BIJLEE SAUBHGYA | 177,380,824 | |
| CENT.SUB.SPV POWER PUMPS PROG.- 4099 | 347,664,800 | |
| CENT.SUB SURYAMITRA SKILL DEVELOPMENT PROG. | 5,056,675 | 532,827,299 |
| | | |
| Total of Schedule L1 | | 532,827,299 |
| Schedule L2 | | |
| RECEIPTS FROM STATE GOVERMENT | | |
| GREEN CESS FUND 2019-20 | 49,520,000 | |
| STATE GRANT-13TH FINANACE COMM.17-18 | 350,000,000 | |
| STATE GRANT N R S E 2016-17 | (19,383,600) | 380,136,400 |
| | | |
| Total of Schedule L2 | | 380,136,400 |
| Schedule L3 | | |
| BENEFICIARY SHARE RECEIVED | | |
| ATAL SOUR PUMP YOAJANA | 4,819,127 | |
| ATAL SAUR KRUSHI PUMP YOJANA 18-19 - 2 | 20,556,863 | |
| BEN PAY SOLAR POWER PLANT | 193,201,156 | |
| BEN KHASDAR NIDHI | 77,040 | |
| ZILHA KRIDA SANKUL SANGLI | 2,919,000 | |
| MNRE ENERGY CONSERVATION | (635) | 221,572,551 |
| Total of Schedule L3 | | 221,572,551 |
| | | |
| Total of Schedule L | | 1,134,536,250 |
| | | |
| | | |

| PARTICULAR | AMT (RS) | AMT (RS) |
|---|---|---|
| SCHEDULE M | | |
| INCOME FROM OTHER SOURCES | | |
| 1 % TECHNICAL SANCTION FEES | 16,508,822 | |
| 5 % IMPLEMENTATION FEES | 3,412,778 | |
| 5% PROJECT MANAGEMENT FEES | 18,786,054 | |
| MISCELLOUSE RECEIPTS | 1,655,885 | |
| REGISTRATION FEES | 30,900 | |
| RECT ACCREDITION FEES & CHARGES 4620 | 5,196,800 | |
| RECT CONSULTANCY CHARGES | 56,535 | |
| RECT INTEREST ON ACRREDITATION | 40,660 | |
| RECT MISCELLANOUS INCOME 4603 | 95,860 | |
| RECT OTHER INCOME 4649 | 9,280 | |
| RECT REGISTRATION FEES-4602 | 14,583,380 | |
| RECT SERVICE CHARGES 4655 | 34,902,721 | |
| RECT TENDER FEES-4601 | 2,530,085 | |
| RECT TRANSFER AND CLEARANCE FEES-4622 | 5,765,000 | |
| RECT WIND FARM CHALKEWADI M S E D C L 4647 | 785,145 | |
| RECT WIND FARM GUDEPANCHGANI MSEDCL | 2,274,895 | |
| RECT WIND FARM VIJAYDURG MSEDCL | 333,907 | 106,968,706 |
| | | |
| | | |
| Total of Schedule M | | 106,968,706 |
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MEDA महाऊर्जा

# MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)

( A Govt. of Maharashtra Institution )

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