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ACTION PLAN 2019-20 AT A GLANCE

Sr. No.	Scheme/Programme	Budget In Lakh Rs.	Physical Targets	Expected Capacity Addition
1	Grid Connected Rooftop (GCRT) Solar Power Plants (Including goshal project)	2709	-	113.60 MW
2	Ground Mounted Solar Power Projects	-	-	800.00 MW
3.	Biomass Programme	-	2 no	7.00 MW
4.	Biogas Programme	-	1 no	1.20 MW
5.	Small Hydro Projects	-	-	-
6.	Solar Water Pumping Programme	40000	50000 Off Grid 468 Grid Conn.	241.00 MW
7.	LED Based Home System-Manohar Jyoti.	2500	16700 no	2.505 MW
8.	Off-grid Solar Power Plants Programme	250	-	0.725 MW
9.	Solar Inverter Charger Programme	30	400 no	0.15 MW
10.	LED Street Lighting Programme	400	10000 no	0.4 MW
11.	Solar Water Heating System Programme	130	1,30,000 LPD	1.17 MW
12.	Community/Institutional/ Night Soil Biogas Plants Programme	10	215 Cum	0.02 MW
13.	Information And Public Awareness Programme	170	-	-
14.	Information Technology Plan	81.55	-	-
15.	Rate Contracts/ Supplies pertaining to Energy Efficient Lighting Systems and implementation thereof	-	-	-
16.	Energy Conservation Action Plan	55.00(State) 421.00 (BEE)	-	22.6 MW (Avoided)
17.	State Energy Conservation Award	30	-	-
	TOTAL			1190 MW

1. GRID CONNECTED ROOFTOP (GCRT) SOLAR POWER PLANTS

Objective	• To contribute to National Goal of addition of 1.00 Lac MW of solar Power in the Country by the year 2021-22. • Decentralized generation of power from solar energy, helps in reducing the dependence on conventional power as well as promotion of green and clean power. • This aims to produce energy using solar energy by the consumers of electricity in the State to reduce their electricity bills and also to achieve the Solar RPO target of DISCOMs. • Optimal use of rooftop space for producing energy. • To reduce electricity Bills.
About System	• The GCRT solar power plant produces electricity from solar energy which may be used within the campus and the surplus power if any can be feeded to the grid which may be utilized during non-sunny hours under net metering facility.

Cost, Subsidy and Incentives	• Following is the benchmark cost of the system with 5 years Comprehensive maintenance Contract(CMC):
	  • 1kWp- to 10 kWp :Rs. 49.50 per watt
	  • 11kWp- to 100 kWp :Rs. 41.70 per watt
	  • 101kWp- to 500 kWp :Rs. 40.25 per watt
	• Subsidy @ 30% of the benchmark cost for the capacity 1 kWp to 500 kWp, to the users of all types of residential, Institutional & Social sector excluding government sector and the Commercial & Industrial establishment in private sector.
	• Net Metering facility for GCRT solar power plant.
	• Incentive of Rs. 1/- per unit is being provided by the DISCOM for solar power generated from GCRT solar power plant in domestic sector.
	• Allowed additional increased FAR up to 12% in certain categories of buildings on installation of GCRT solar power plant.

Target for 2019-20	• In private sector, 12 MW cumulative capacity with State budget of Rs. 1790 lakh. • In Gaushalas, 1.6 MW cumulative capacity with State budget of Rs. 919 lakh. • In private sector, 10 MW cumulative capacity

	with MNRE, GoI, Central Financial Assistance (CFA). • In Govt. Sector, 20 MW cumulative capacity under RESCO Mode. • In Govt. Sector, 10 MW cumulative capacity on CAPEX Mode. • In private sector, 60 MW cumulative capacity without subsidy.
Actions	• Rate contract with 5 firms arranged and issued on 22-2-2019 which is available on HAREDA website. • Tariff under RESCO mode has been finalized for 5 MW cumulative capacity for Government sector. • Online applications are being received which are to be sanctioned by the ADCs of respective districts. After installation Project Completion Reports are to be uploaded online by the users and subsidy is to be released through bank account by the ADCs of respective districts. • In government sector, GCRT solar power plants shall be installed from the firms on the rate contract in 4 months' time. • Progress will be reviewed regularly. • All the district Project Officers shall create awareness and motivate eligible beneficiaries to install GCRT solar power plants through seminars, workshops and other means of publicity. Advertisement in News Papers are to be inserted from the head office for publicity. • Tenders for supply of Solar Power under RESCO mode may be invited again in June 2019 for finalizing the tariff.
Outcome	• Total cumulative capacity of 113.6 MW will be installed during the year 2019-20. • About 1700 Lac Units of electricity may be generated annually from solar energy through the above mentioned capacity addition.

(R. Birthal)
Project Officer (NRE)

(Om Dutt Sharma)
Project Director (NRE)

2. GROUND MOUNTED SOLAR POWER PROJECTS

Objective	• To contribute to National Goal of addition of 1.00 Lac MW of solar Power in the Country by the year 2021-22. • Decentralized generation of power from solar energy, helps in reducing the dependence on conventional power as well as promotion of green and clean power. • This aims to produce energy using solar energy by the Independent Project Developers in the State for their captive consumption or for third party sale to reduce their electricity bills and also to achieve the Solar RPO target of obligated entities. • Optimal use of barren land for producing energy.
About System	• Electricity is being produced through ground mounted solar power project at large scale which may be used anywhere by using the transmission lines of Power Utilities.
Cost and Incentives	• The cost of the project may be about Rs. 3.50 to 4.0 Crore per MW excluding the cost of land. • Various incentives are being provided for installation of ground mounted solar power project under Haryana Solar Power Policy 2016.
Target for 2019-20*	• 500 MW cumulative capacity for private sector (Captive/Third Party sale). • 300 MW cumulative capacity for sale of solar power to DISCOMs.
Actions	• Tenders for purchase of solar power of 300 MW is already in process by the DISCOMs/HPPC. • 38.10 MW captive solar power projects have already been approved by HAREDA with all the waivers under the Haryana Solar Power Policy. • 7 nos. Solar Parks have already been approved. • Seminars shall be organized for awareness and motivation of Independent Power Producers (IPPs) for installation of the solar power projects.
Outcome	• Total cumulative capacity of 800 MW will be installed during the year 2019-20. • About 8000 Lac Units of electricity may be

	generated annually from solar energy through the above mentioned capacity addition.

* May be achieved with the active cooperation of the Power Utilities.

With both the above programmes, total 913.6 MW solar power projects may be added during the year 2019-20 through which about 9700 Lac Units of electricity will be generated annually.

(R. Birthal)
Project Officer (NRE)

(Om Dutt Sharma)
Project Director (NRE)

3. BIOMASS PROGRAMME

(i) Biomass Power Projects

- The office had allocated four paddy straw based power project to be set up in paddy dominant districts of Kaithal, Kurukshetra, Jind and Fatehabad for which PPA has been signed in Feb 2019 but the IPPs have sought clarification from the HERC about tariff for which hearing has been held on 1.4.2019. After clarifications from the HERC, the IPPS shall achieve financial closure and start the project at ground. These projects shall be monitored on monthly basis to resolve any hurdles and completion of the projects within prescribed time of 18 months from the date of signing of PPA that is By Aug 2020.

- As Ambala and Karnal are also among the top six paddy dominant districts but projects for these districts could not be allotted in the above said bidding process, HAREDA shall prepare proposal/RFP for inviting bids for setting up of paddy straw based power projects of 5 MW to 15 MW each capacity on tariff based competitive bidding in Ambala and Karnal districts.

- After approval, consent of HPPC shall be taken to authorize HAREDA to float the RFP and procure the power at the discovered discount on HERC/ CERC generic tariff.

- Thereafter, the RFP shall be got approved from HERC after which it shall be floated on e-procurement portal.

- After evaluation by the Technical Appraisal Committee (TAC) constituted by the State Govt., its recommendations shall be placed before the High Powered Committee (HPC) headed by the ACS, NRE as per Haryana Bio-energy Policy-2018.

- After approval by the HPC, LOI shall be issued and MoU will be signed by HAREDA with project developers for execution of the projects in the scheduled time frame mentioned in the MoU. HPPC shall sign the PPA with approval of HERC.

- The projects shall be commissioned within 18 months (earliest by July, 2021) from the signing of PPA as per the following schedule

considering that RFP will be floated in June 2019 after approval of HPPC & HERC:-

Activity	**Time frame (in months)**
Date of Issue of RFP	2
Bid clarification, conference etc. & revision of RFP	
RFP bid submission	
Evaluation by STC and TAC from the date of receipt of proposal	2
Approval by BOG/HPC	
Signing of MOU& Preparation of DPR	1
Evaluation and approval of DPR	1
Signing of PPA from date of approval of DPR	1
Financial closure from the date of approval of DPR	18
Commissioning of the project	
Total Time for commissioning of the project	25

- Likely capacity addition: **49.8 MW in 2020-21**
  20-25 MW in 2021-22.

(ii) Biomass Cogeneration programme:

- HAREDA has already signed MoUs for 3 cogen projects of 20.45 MW and the matter is under consideration of the HERC for approval of PPA since 26.3.2019. Rigorous follow-up will be made to expedite signing of PPA and thereafter execution of the projects. As per discussions with the developers in the review meeting held on 27.3.2019, out of these three projects , one project of 5 MW shall be commissioned in 2019-20 while the other two projects will be commissioned in 2020-21.

- To create awareness and generate fresh proposals, a seminar will be organized in collaboration with Rice Millers Association/ Distillers tentatively in June 2019 with financial assistance of the MNRE, GoI.

- Likely capacity addition: **5.00 MW in 2019-20**
  15.45 MW in 2020-21

(iii) Bagasse Cogeneration Programme

- Bagasse based Cogeneration in Sugar Mills will be facilitated in cooperative and private sugar mills of the State.

- A proposal of 14.8 MW cogen project in Saraswati Sugar Mill, Yamunanagar is under revision after evaluation by TERI. The revised DPR will be sent to HPPC for their comments and thereafter, it will be placed before TAC and HPC for approval. Thereafter, LoI will be issued and MoU will be signed and HPPC will be requested to sign PPA with approval of HERC. After PPA, the project will be commissioned in about 22 months.

- In Haryana there are 10 cooperative sugar mills out of which 5 mills have cogen power plants. The remaining cooperative sugar mills(Panipat, Karnal, Jind, Palwal and Kaithal) shall be motivated to go for cogeneration and proposals of about 30 MW shall be generated which will be commissioned in next two years that is by 2021-22.

(iv) Biomass Gasifier Programme

- HAREDA has already signed MoUs for 2 gasifier projects of 4 MW. PPA for one project of 2 MW at Rewari has been signed on 28.9.2018. The project will regularly monitored to ensure that it is commissioned in the current FY.

- For the other project of 2 MW at Hisar, the matter is under consideration of the HERC for approval of PPA since 26.3.2019. Rigorous follow-up will be made to expedite signing of PPA and thereafter execution of the projects.

- Likely capacity addition**: 2.00 MW in 2019-20,**
  2.00 MW in 2020-21

Biomass PowerProjects to be commissioned in 2019-20: 7.00 MW

(P.K.Nautiyal)
SE-A

(J.S.Kohli)
T.E.

4. BIOGAS POWER PROGRAMME

(i) Biogas based Power plants

- HAREDA invited RfP for setting up of Biogas based Power Plants in the state. In its response, three proposals were finalized and HAREDA conveyed in principle approval to Satish Chopra, Karan Chopra and Haryana City Gas Distribution Pvt. Ltd for setting up of Biogas based power project of 02 MW each at village Kanju of District Yamunanagar, village Andhgarh of District Karnal and village Adoya of District Kurukshetra respectively during the year 2018-19. These firms approached Haryana Power Purchase Center (HPPC) for PPA.

- HPPC evaluated the project-wise levelised tariff and worked out on the basis of the fuel cost quoted/collected as per local market, HERC norms, based on the certain assumptions and other parameters as considered by developers, which works out to be as under:

Name of Project	As per HERC regulations (Generic Tariff)	Discount offered on the tariff on the reference CERC tariff in the RfP floated by HAREDA @ 7.56/kWh		As per HPPC calculations
M/s SKN Haryana City Gas	INR 9.01/kWh	0.24	7.32	INR 2.70/kWh
Mr. Satish Chopra	INR 9.01/kWh	016	7.40	INR 3.26/kWh
Mr. Karan Chopra	INR 9.01/kWh	0.36	7.20	INR 2.70/kWh

- There is huge variation in the tariff offered by IPPs and tariff calculated by HPPC and it was asked from firms to give undertaking to accept the lower of tariff quoted by them in RfP and tariff to be determined by HERC. Firms have not given this undertaking and mentioned that they shall accept the tariff offered by them in the RFP only. Accordingly, HPPC has cancelled the proposal of these firms. But, during the meeting held under the Chairpersonship of Director, HAREDA on 27.03.2019, the representative of these firm

agreed to sign the MoU with HAREDA for these projects and also agreed to give undertaking as desired by HPPC. So all efforts shall be during the year 2019-20 to get these projects installed.

- In addition to above, HAREDA has also signed a MoU with M/s Mor Bio Energy Pvt. Ltd., for setting up of 1.2 MW capacity Biogas based Power Plant at Village Morkhi, Teh.Saffidon, Dist.Jind. The HPPC had obtained the approval of the SCPP and has filed the petition of source approval in HERC. All efforts shall be made in current year get this project commissioned.

- Likely capacity addition during 2019-20: **1.2 MW**

(ii) Compressed Biogas (CBG)

- Memorandum of Understanding has been signed between Indian Oil Corporation Ltd. and HAREDA for setting up Biomass to compressed Bio-Gas (CBG) plants in Haryana. Role of HAREDA is to facilitate identification of land parcels in various location of Haryana for the plants, facilitate and extend its cooperation to the entrepreneurs/ Indian oil to market and sell by-products of the CBG plants including compost, manure and slurry in Haryana, facilitate and extend cooperation for collection, storage and supply of biomass/waste of CBG plants through Urban Local Bodies, Gram Panchayats, Department of Agriculture etc., to facilitate in expeditious obtaining of all the required statutory approvals from State Government like NOC from District Administration and other departments.

- The IOCL has invited Expression of Interest from the interested entrepreneurs for setting up Biomass to compressed Bio-Gas (CBG) plants in India. It has been informed that in its response, 8 firms have submitted 14 project proposals for setting up of the plant in Haryana and IOCL has given them approval to go head. The detail is as under:

S. No	Name and Address of the Entrepreneurs	Location of the Proposed CBG Plant in Haryana	Proposed Capacity (CBG in Tonnes/ Day)
1	Verbio India Pvt. Ltd., 1701/1b, Green Acres, Lokhandwala Complex, Azadnagar, Andheri West	Karnal	30
		Ambala	30

S. No	Name and Address of the Entrepreneurs	Location of the Proposed CBG Plant in Haryana	Proposed Capacity (CBG in Tonnes/ Day)
	,Mumbai 400053		
2	Sam India Private Limited, 235, Ram Krishna Vihar, 29 I.P. Extension, New Delhi, 110092	Sambhli, Karnal, Haryana	5
		Kaithal, Haryana	5
		Dhingsara. Fehtabad, Haryana	5
3	Quality foils (India) Pvt. Ltd., 3, Industrial Development Colony, Hissar 125005 Haryana	Kharkhara	10
		Barwala, Hissar	10
		Hathwala	10
		Kharad	10
4	Quality Stainless Pvt. Ltd,3, Industrial Development Colony, Hissar 125005 Haryana	Kharkada	10
5	Trinix Impex Private Limited,B-21, 2nd Floor, Jitar Nagar, Parwana Road, New Delhi 110051	Charkhi Dadri	2
6	TVISI ENERGY PVT. LTD.,WZ-743, Palam Village, Near Bata Chowk, New Delhi-110045	Palwal	8
7	Matra Energy Private Limited,7/7 Ansari Road, Daryaganj,New Delhi-110002	Harewali	8
8	Adani Port and Special Economic Zone Limited.,Adani House, Navarangpura, Ahemdabad-380009	Patil Gurgaon,Haryana	To be finalized

- A review meeting has been convened under the Chairpersonship of Director, HAREDA on 04.04.2019 in which following 4 firms participated and assured to set up these projects within 2019-20. Efforts shall be made during the year 2019-20 to get prepared the DPR of these projects, get sanction of CFA from MNRE,GOI and commission these projects.
- Likely capacity addition during 2020-21: **100 ton/day**

(Ravinder Poonia)
Project Officer,NRE

(Om Dutt Sharma)
Project Director,NRE

5. SMALL HYDRO PROJECTS

- In Haryana, initially potential for generation of about 90 MW power from small hydro was assessed on canal heads. As hydro projects make non-consumptive use of canal water, no royalty is charged for canal water usage, as per the Policy. So far, projects with cumulative capacity of 73.30 MW have been commissioned, out of which four projects of 10.80 MW have been setup by the Independent Power Producers. The detail is as under:

Sr. No.	Site	Capacity	Year of commissioning
I.	**Commissioned projects**		
1.	Tajewala, Yamuna Nagar (By GENCO)	3 X 16 MW 2 X 7.1 MW	1986-89 2005-06
2.	Kakroi, Sonepat By GENCO	0.3 MW	1987-88
3.	Dadupur, Dist. Yamuna Nagar by M/s Bhoruka Power Corporation Ltd., Bangalore	6.00 MW	2009-10
4.	WJC Main Branch Gogripur (RD 96000) Distt. Karnal by M/s P&R Engineering Services, Chandigarh	2.00 MW	2010-11
5.	Musapur, Indri, Karnal Augmentation Canal SHP by Puri Oil Mills, Delhi	1.4MW	2011-12
6.	Khukni, Karnal Augmentation Canal SHP by Puri Oil Mills, Delhi	1.4 MW	2011-12
	TOTAL	**73.30 MW**	

- In addition to above, tripartite MoU between HAREDA, IPP and Irrigation Department for following projects was also signed during the year 2011-12:

II. Projects under execution	**Capacity**
Augmentation Canal Musapur (RD 30.102 KM & 27.85 clubbed) Distt. Karnal by Puri Oil Mills, Delhi	0.7 MW
Augmentation Canal Khukhni (RD 19.916 KM & 16.836 clubbed) Distt. Karnal by Puri Oil Mills, Delhi	0.7 MW
Augmentation Canal MainmatiDistt. Karnal by Puri Oil Mills, Delhi	2.3 MW
Augmentation Canal KhajuriDistt. Karnal by Puri Oil Mills, Delhi	2.4 MW
Main Line Lower Canal, Ahmadalpur , Yamuna Nagar by M/s JMD Hydro Power Ltd., Faridabad	4.8 MW
TOTAL	**10.90MW**

- The Detailed Project Report of above mentioned projects were submitted by IPPs. Several meetings were organized by HAREDA with IPPs and Irrigation Department on all platforms to get these projects approved, but same were not approved by Irrigation Department. The concerned of Irrigation Department were as under:
  - There is always scarcity of water for irrigation purpose throughout the year. The demand is much higher than supply. Due to which they cannot afford to allow pondage for 4-5 hours in a day for hydro power project as it significantly affect their scheduling.
  - The small hydro projects reduce its carrying capacity due to heavy siltation.

- On basis of above, Irrigation Department has taken blanket decision to not allow any small Hydro Projects on the canals in the State. Accordingly, all the above mentioned project proposals were cancelled.
- HAREDA received project proposal of 10MW capacity at Tohana Canal was submitted by M/S International Coil Ltd., Gurgaon. They intended to use Pitre Augur Turbine (PAT) in which no head is required for generation of electricity. It operates with flow of water. In addition to this, M/s Turiin Soutions Pvt. Ltd., also submitted a request to permit them for Prototype demonstration of generation of electricity from water channels using flow of water. Both these projects were forwarded to Irrigation Department for comments. They again denied the same quoting that it has been decided by their Department to not allow any Small Hydro Project on the canals and they have taken the permission from Government in this regard.
- In the State there is no potential of setting up Small Hydro Projects on the rivers and whatever potential is available is on the canals. Accordingly, during the year 2019-20, all efforts shall be made to convince the Irrigation Department to allow the Small Hydro Projects on canals based on flow of water.
- Efforts shall be made to at least allow M/S Turiin Soutions Pvt. Ltd demonstrate their technology on Tohana Canal in present year i.e 2019-20.

(Ravinder Poonia)
Project Officer,NRE

(Om Dutt Sharma)
Project Director,NRE

6. SOLAR WATER PUMPING SYSTEMS PROGRAMME

A. OFF-GRID SOLAR WATER PUMPING SYSTEMS

BACKGROUND

The State Government has decided that a total of **50,000** solar water pumping systems of different capacities may be promoted in the State as per detail given below:

Type	No. of pumps	Total Installed Capacity in MW*
3HP, Surface/submersible	15000	45.00
5HP, Submersible	25000	120.00
7.5HP, Submersible	7500	50.62
10HP, Sub-surface	2500	22.50
TOTAL	**50,000**	**238.12**

* a total of 2300 pumps has already been taken up and a approx. 14 MW solar capacity has already been added.

ACTION PLAN

In order to achieve this target of 50,000 off-grid solar water pumping systems, following are the action to be taken by the office:

Sr. No.	Deliverables	Action to be taken	Timeline
1	Arranging rate contract of solar water pumping systems	• Tenders are to be invited after getting the permission from the I&C Department w.r.t. MSMEs benefits and MNRE SBD and guidelines under KUSUM • Finalization of rate contract HPPC • Issue of rate contract • Issue of work orders	• 10 days, after completing all the formalities • Within 2 months from the opening of technical bids • Immediately after signing of proceedings by the HPPC • Immediately after issue of Rate contract based on the capacity wise demands from

			the districts
2	Guidelines for solar water pumping programme	Circulation of guidelines of solar water pumping system to the districts after approval of the competent authority	Within next 10 days
3	Publicity and awareness	• Instruction to the districts in this regard is to be issued. • SAKSHAM are to be engaged for the same • Publicity through press media, awareness camps and direct contact with the farmers	Immediately after cessation of model code of conduct
4	Inviting application for solar water pumping programme	• Application shall be invited through SARAL portal	Immediately after cessation of model code of conduct
5	Budget	• Budget provision for 15,000 pumps is already there in the annual budget of 2019-20 • Project Proposal for 35,000 pumps has already been submitted to the FD for forwarding the same to NABARD for sanction of loan under RIDF	

B. PILOT PROJECT ON GRID-CONNECTED SOLAR WATER PUMPING SYSTEMS

BACKGROUND

In order to reduce State AP subsidy burden, the State Government has planned to solarize existing electric operated tube-wells. For this, UHBVN has selected two feeders of Yamunanagar and Karnal districts (287 pumps in Biana feeder in Karnal and 181 pumps in Marupur feeder in Yamunanagar) for implementation of pilot project. The brief of the pilot project feeders are as under:

Feeders	Biana (Karnal)	Marupur (Yamunanagar)
Number of grid-connected farmers	287	181
Distribution of (registered) Connected Load		
3 HP	12	108
5 HP	23	62
7.5 HP	126	05
10 HP	74	06
12.5 HP	44	0
15 HP	08	0
Metered and Unmetered Connections		
- Metered	36	70
- Unmetered	251	111

ACTION PLAN

In order to achieve implement the pilot project of grid solar water pumping systems on 02 selected feeders, following are the action to be taken by the office:

Sr. No.	Deliverables	Action to be taken	Timeline
1	EOI and Identification of beneficiaries (02 ns.) for grid connected solar water pumping systems	EOI for installation of 02 nos. of demonstration solar water pumps.	Immediately after cessation of model code of conduct
2	Arranging rate contract	• Tenders are to be invited after getting the permission from the I&C Department w.r.t. MSMEs benefits and MNRE SBD and guidelines under KUSUM • Finalization of rate contract HPPC • Issue of rate contract • Issue of work orders	• 10 days, after completing all the formalities • Within 2 months from the opening of technical bids • Immediately after signing of proceedings by the HPPC • Immediately after issue of Rate contract

3	Awareness and Inviting application and consent of farmers	• Visit of farmers of these 02 selected feeders would be arranged to make farmers aware about the technology and hand on experience • Application/consent of farmers of two selected feeders shall be invited through district offices	• Immediately after installation and commissioning of demonstration pump. • Immediately after cessation of model code of conduct

Total Capacity Addition:

A.	Off-grid solar pumps	:	238.1 MW
B.	Grid connected solar pumps	:	2.99 MW
	TOTAL	**:**	**241 MW**

(Ajit Kumar)	(P.K.Nautiyal)	(J.S.Kohli)
P.O.	S.E.(A)	T.E.

7. LED BASED HOME SYSTEM (150 W SOLAR HOME SYSTEM) - MANOHAR JYOTI.

Objective

To provide Solar Home System named "Manohar Jyoti") to the households of the state to fulfill their basic energy requirement i.e. lighting and air cooling.

System configuration

150 W Solar PV Module, 12.8 V 80Ah Lithium Ferro Phosphate Battery, Two LED Luminaires of 6Watt each & One LED tube light of 9watt, One DC Ceiling fan of 25 watt and provision for One USB port.

Benefit of Solar Home System:

- No fuel cost-uses abundantly available free sun light
- No conventional electricity required.
- Long operating life.
- Easy to operate and maintain
- Eco-friendly.

Tentative Annual Target for the state

16700 nos (subject to increase as per availability of the budget)

Cost break up per system

Total cost	:	Rs. 22500/-
State financial assistance	:	Rs. 15000/-
User Share	:	Rs. 7500/-.

Target Group:

- Households living in un-electrified dhanis (as per list of the DHBVN).
- Scheduled Caste Families.
- Families living below the poverty line (BPL) – as per ration card issued by Food Supplies Department, Haryana to BPL families.
- Beneficiaries of Prime Minister Awaas Yojna (Gramin/Urban) whose houses have been constructed.
- Households, without electric connection, living in urban slum areas having valid identity (voter card, ration card, aadhar card).
- Women headed households.
- Rural Households.

Mode of implementation

Solar Home Systems will be provided by the Office of Additional Deputy Commissioner-cum-Chief Project Officer of the respective district by Inviting online applications through "Saral Portal".

Time schedule for implementation of scheme:

S. No.	**Activity**	**Tentative Timeline**
1.	Arranging rate contract for supply, installation& commissioning of Solar Home System	Rate & suppliers have been finalized and RC will be issued by 30.04.2019.
2.	Placing of work order with approved supplier	By 31.05.2019.
3.	Online identification of beneficiaries	In progress and to be completed by 31.07.2019.
4.	Distribution of Solar Home systems to the beneficiaries and completion of installation & commissioning of all the targeted systems.	30.09.2019.
5.	To make arrangement for after sales service of installed systems by the suppliers	By 31.12.2019.
6.	Post installation monitoring of installed systems and after sales service facilities	By 28.02.2020.

Expected outcome: Solar Capacity addition of approx. 2505 Kilowatt.

(Suresh Kumar)
A.P.O.

(O.D. Sharma)
P.D.

8. OFF- GRID SOLAR POWER PLANTS PROGRAMME

Brief Of the Scheme	Solar Off- Grid Power Plant are promoted in the State to provide uninterrupted power solution to various types of beneficiaries using solar energy. This plant is installed with battery bank for storage of energy generated during day time. Projects ranging from 1 KW to 100 KW capacity are eligible for State & Central Financial Assistance under the scheme as per the site requirements
Cost and Subsidy	➢ Project cost ranges from 1.10 lac -1.20 per KW depending upon the size of the Plant & storage capacity required. ➢ State Financial Assistance @ 30% of system cost for general public is admissible and balance is as user share. ➢ For Government sector buildings, additional MNRE subsidy of 40 % of the project cost is also admissible.
Budget for 2019-20	➢ Rs. 250 lacs
Action Plan	➢ All the district PO/APOs shall create awareness and motivate eligible beneficiaries to install Off- Grid Solar Power Plant and forward their proposals as per the felt need. ➢ Total proposals of the targeted capacity of about 725 KW shall be finalized by 31st July, 2019. ➢ Rate Contract shall be finalized by the High Powered Purchase Committee of the State Govt. and the process will be completed by 30th September,2019. Thereafter work orders shall be released to execute the work.
Outcome	Through installation of above mentioned 725 KW capacity of Solar Power Plants, there will be a saving of about 10 Lac units of electricity during the year 2019-20.

Amit Dabla (APO) | Vishal Bhatnagar (STM) | O.D. Sharma (PD)

9. SOLAR INVERTER CHARGER PROGRAMME

<table>
<tr><td>About System</td><td colspan="3">The Solar Inverter Charger consist solar panels and interface charge controller and used for charging the battery of existing conventional inverter during day time. Presently, two models of Solar Inverter Charger:-

1. Solar inverter of 300 Watt capacity:-It consists of solar panels of 300 watt capacity and interface charge controller of 20 Amp. The system shall be installed on the existing conventional inverter of 600-800 VA having single battery of 12V DC x 120-180 AH.

2. Solar inverters of 500 Watt capacity:-It consists of solar panels of 500 watt capacity and interface charge controller of 30Amp. The system shall be installed on the existing conventional inverter of 1000- 1800 VA having double battery of 12V DC x 120-180 AH to form the 24 VDC battery bank.</td></tr>
<tr><td>Objective</td><td colspan="3">1. To charge the battery bank of existing inverter from Solar Power thus availability of power during long power cuts.
2. To serve as back up during power cuts.
3. To generate electricity from clean and green energy which lead to saving of grid power in charging the batteries of inverter.
4. DC power generated from Solar is converted into AC by the inverter and used to run domestic applications along with battery power during power cuts.
5. For Effective utilization of existing inverter in generation and utilization of clean and green energy.</td></tr>
<tr><td rowspan="3">Cost & Subsidy</td><td>Item</td><td>Approx. Total Cost</td><td>State Govt. subsidy (Rs.)</td></tr>
<tr><td>300 Watt Solar charger</td><td>Rs.14750/- to Rs.21945/-</td><td>6000</td></tr>
<tr><td>500 Watt Solar charger</td><td>Rs.21000/- to Rs.28665/-</td><td>10000</td></tr>
<tr><td>Target for 2019-20</td><td colspan="3">With a budget provision of Rs. 30 Lakhs, 400 no of system i.e. 250 nos. systems of 300 Watt and 150 nos. of system of 500 watt (18 per district) shall be installed.</td></tr>
<tr><td>Outcome</td><td colspan="3">150 KW systems are to be installed which lead to generation of 2,19,000 units of electricity annually.</td></tr>
</table>

Implementation Plan			
Sr. No.	**Deliverable**	**Action to be taken**	**Timeline**
1.	Issue of Empanelment list of Suppliers	Performance security is to be deposited by supplier and acceptance of Empanelment document for terms and conditions	Upto 30 May 2019
2.	Issue of guidelines to ADCs for implementation of scheme	The guidelines with target allocation is to be issued to ADCs for implementation of scheme	Upto 15 may 2019
3.	Development of Online application form on SARAL portal	i. Direction is to be issued to Service provider to develop Application form on SARAL portal ii. Development of Said Application form on SARAL portal	Issued Upto 15 May 2019
4.	Publicity and awareness	i. Publicity through press media through press release and inserting advertisement ii. Instruction to be issued to the districts for doing wide publicity through press release and inserting advertisement, SAKSHAM are to be engaged, other suitable methods etc	To be issued from 25th Mayto 30th May 2015 Upto 15 May 2019
5.	Inviting Application for identification of beneficiaries	Application Shall be invited through SARAL portal for fixed period of 20 days between 1st June 2019 to 20th June 2019	1st June 2019 to 20th June 2019
6.	Selection of Beneficiaries	Draw is to be conducted by ADCs	21- 25 June 2019
7.	Demanding Additional funds	The proposal shall be submitted to FD for additional funds depends on numbers of application received	July 2019

8.	Installation of said Systems by Beneficiaries	Installation of said systems by beneficiaries from empaneled suppliers	July & August 2019
9.	Application for Release of Subsidy	Prescribed form is to be submitted on WEB portal from selected beneficiaries	July, August & September 2019
10.	Release of Subsidy	i. Verification of installed Systems by ADCs office ii. Release of subsidy	July, August & September 2019

(Sombir Singh)
P.O.

(P.K.Nautiyal)
S.E.(A)

(P.K.Yadav)
C.S.E.

10. LED STREET LIGHTING PROGRAMME

Objective	• To illuminate the streets in Haryana with the help of SPV Technology. • To converse electricity • To increase social security in semi-urban /rural areas where a higher incidence of crimes are reported in night/dark.
About System	• A LED Solar Street Light system consists of a 7 watt LED lamp with 40 watt solar module for charging of 160 Wh lithium ferro-phosphate battery mounted on a 6 meter pole. • The system is capable for operating from dusk to dawn with 2 days autonomy. • The system has the features for auto on/off at dusk and dawn.
Cost and Subsidy	• The system with 5 years AMC presently cost Rs. 12,650/-. • A State subsidy of Rs. 4000/- per system is being provided to non-commercial institute/organization, Zila-parishad, Municipal councils/ corporation/group housing society/Gram-panchayats/Block samiti etc.
Target for 2019-20	• 10,000 nos. with a budget provision of Rs. 400 lakh.
Action Plan	• Rate contract with 5 firms arranged vide no.844-848 dated 08-2-2019 and is available on HAREDA website. • Work orders of 1050 nos. of street lights till date. • All the district Project Officers shall create awareness and motivate eligible beneficiaries to install solar street lights and forward their proposal along with user share to the HAREDA. • HAREDA shall place the work orders. • Street lights shall be installed from the firms on the rate contract in 4 months' time. • Progress will be reviewed quarterly.
Outcome	• 10,000 nos. of LED solar street lights will be installed by 31.03.2020 which will benefit about 100,000 households and about 5,00,000 people. • Capacity Addition of **400 Kw** • Annually 306600 units of electricity will be saved.

(Vishal Bhatnagar)	(P.K.Nautiyal)	(P.K.Yadav)
S.T.M.	S.E.(A)	C.S.E.

11. SOLAR WATER HEATING SYSTEM

INTRODUCTION

With a view to conserve electricity and efficient use of energy, Solar Water Heating Systems in thermal sector play vital role in meeting the hot water requirements. With the use and promotion of Solar Water Heating Systems in various applications, the burden on conventional electricity is reduced to a considerable extent.

COST & SUBSIDY

There are two types of Solar Water Heating Systems. One is Flat Plate Collector (FPC) and other is Evacuated Tube Collector (ETC). The approx. cost of the systems is under:-

Sr. No.	Type of System	Cost Approx. (100 Liter Per Day (LPD)	State Subsidy under Domestic Sector	State Subsidy under Social Sector
1.	Flat Plate Collector (FPC)	22,500/-	Rs. 5,000/- per sq. meter of the collector area subject max. of 6 sq. meter.	50 % of the total project cost
2.	Evacuated Tube Collector (ETC)	13,000/-	Rs. 2,000/- per sq. meter limited to Rs. 9,000/- for 300 LPD capacity.	----

ELIGIBILITY

(a) Domestic Sector:

All Haryana residents and Haryana Govt. employees living in Chandigarh having their own house or Govt. accommodation will be eligible to avail the state subsidy on installation of Solar Water Heating Systems under domestic sector scheme.

(b) Social Sector:

All socially oriented institutions run by the State Govt. / Non Govt. like working women hostels, orphanages, Deaf and Dumb Centers, Crèches, Old age homes, Bal Greh, Nari-Niketans, Bal Niketans, Sports, Hostels, Hostels for the students of scheduled Caste / Weaker section students, Charitable Institutions (working for last three years), Natural Treatment Centres, Red Cross Institutes, Jawahar Navodaya Vidyalya etc are eligible for state subsidy under social sector scheme.

TARGET & FUNDS ALLOCATION FOR THE YEAR 2019-20

Sr. No.	Type of Scheme	Target (LPD)	Funds allocate (Rs. in Lakh)
1.	Domestic Sector	60,000	60.00
2.	Social Sector Scheme	70,000	70.00
Total		1,30,000	130.00

PROPOSED TARGET ALLOCATION TO THE DISTRICTS

Sr. No.	Type of Scheme	Proposed Target per District
1.	Domestic Sector	3000 Liter Per Day (LPD)
2.	Social Sector Scheme	3500 Liter per Per Day (LPD)

ACTION PLAN

I. The Rate Contract has been already finalized.
II. The wide publicity shall be done to promote the scheme through press releases and advertisements and ADC-cum-CPO's office.
III. For Domestic Sector:- The beneficiary/ applicant can install the Solar Water Heating System on own his/ her choice confirming to the specifications for SWHS of the Ministry of New & Renewable Energy, Govt. of India (MNRE/GOI) and apply online on the web portal www.hareda.gov.in for reimbursement of state subsidy.
IV. For Social Sector:- All ADC-cum-CPO's have been requested to generate the proposals and send to this office for sanction/ installation of Solar Water Heating System.

V. The above cited category wise targets of Solar Water Heating System will be achieved on district level through regular review & monitoring.

VI. Per district targets shall be reviewed and reallocation as per achievement & demand.

OUT COME

One 100 LPD Solar Water Heating System saves about 1500 unit of electricity annually. Hence, total 19,50,000 units (**Approx. 1.17 MW Solar Power**) will be saved annually after installation of the 1,30,000 LPD capacity of Solar Water Heating systems.

(RajinderPal)	(J.S.Kohli)	(P.K.Yadav)
A.P.O.	T.E.	C.S.E.

12. COMMUNITY / INSTITUTIONAL/ NIGHT SOIL BIOGAS PLANTS PROGRAMME.

<table>
<tr><td>Brief of the Scheme</td><td>In this Scheme 25 Cu. M. to 85 Cu. M. Biogas Plants are installed to meet out the cooking energy requirements and the small electrical energy requirements of the users.</td></tr>
<tr><td>Objective</td><td>

To utilise the animal dung for gainful purpose in an environment friendly manner for generation of biogas & electricity which is a green & clean energy.
Also manure produced in a Biogas Plant is a good nutrition for the plants & good for soil health.
It will also help in reducing dependence on LPG and the fossil fuels.
It will also improve village / urban sanitation.

</td></tr>
<tr><td>Cost and Subsidy</td><td>To promote Bio gas plants in Gaushalas/Institutions, commercial users, individual dairies etc. in the State with financial assistance as per following pattern:
<table>
<tr><th>Sr. No.</th><th>Capacity</th><th>Cost of the plant (Rs.)</th><th>State Subsidy (4 of the project c with maxim subsidy of (Rs)</th></tr>
<tr><td>1</td><td>25 Cum</td><td>3,18,000</td><td>1,27,200</td></tr>
<tr><td>2</td><td>35 Cum</td><td>5,05,000</td><td>2,02,000</td></tr>
<tr><td>3</td><td>45 Cum</td><td>5,97,000</td><td>2,38,800</td></tr>
<tr><td>4</td><td>60 Cum</td><td>7,56,000</td><td>3,02,400</td></tr>
<tr><td>5</td><td>85 Cum</td><td>9,89,000</td><td>3,95,600</td></tr>
</table>
Such plants if used for power generation using 100% biogas based Genset will also be eligible for Central financial assistance also @ 40% of the project cost limited to Rs.40,000/- per kw for projects upto 20kw capacity, @Rs.35,000/- per kw for projects above 20 kw to 100 kw capacity and Rs.30,000/- per kw for projects above 100 kw to 250 kw capacity.</td></tr>
<tr><td>Budget for</td><td>Rs. 10.0 lac</td></tr>
</table>

2019-20	
Action Plan	➢ All the district PO/APOs shall create awareness and motivate eligible beneficiaries to install Institutions Biogas Plant and forward their proposals along with security deposit amount to the Deptt/HAREDA. ➢ Total proposals of the targeted capacity of about 215 Cubic Metre shall be finalized by 31st August, 2019 & sanctions shall be issued. ➢ A Plant has to be installed within 6 month time of the date of sanction of the Plant. ➢ Progress will be reviewed quarterly.
Outcome	With the above budget of Rs. 10 lac, total 215 Cu. M. Size of biogas plants will be installed and they will generate energy in the form of Biogas which is a clean fuel & will have an energy value equivalent to 156950 units of electricity annually.

Amit Dabla	Vishal Bhatnagar	P.K. Nautiyal	O.D. Sharma
(APO)	(STM)	(SE,A)	(PD)

13. INFORMATION AND PUBLIC AWARENESS PROGRAMME

The Department of Renewable Energy and HAREDA is implementing different schemes like Solar Water Heating Systems , Home Lighting Systems, Solar Street Lighting Systems Energy Conservation, Renewable Energy Projects, Solar Cookers, Small Solar Power Packs, Off-Grid Power Plants for general public /Institutions/Industries. To carry publicity of these schemes the State Govt. has allotted a budget of Rs. 170.00 lacs for the year 2019-2020. Following is the proposed activities for Publicity and Awareness of New & Renewable Department/HAREDA;

Sr. No.	**Proposed Activity**	**Units(Rs.)**	**Total amount Proposed (Rs.)**	**Remarks**
1	Awareness Camps & Seminars, Exhibitions/ Workshops at District Level	1.50 lac per district	33 lacs	To be carried out at District Level
2	Miscellaneous activities related to publicity and awareness at District level i.e. Celebration of Energy Conservation Day, AkshayUrjadiwas, GeetaJayanti, Preparation of Zhanki on 26th January, Hoardings, Printing of Brochures, Wall paintings etc.	2.00 lacs per district	44 lacs	To be carried out at District level
3	Publicity through electronic media i.e. FM Radio spots/ jingles	4 lacs app. Per month on FM Stations	45.00 lacs	To be done at Head Office level
4	Publication of Brochures/ booklets/folders/ Newsletters/ policies/ trade guide, sponsorship etc.	As per requirement/demand	20.00 lacs	To be done at Head Office level
5	Advertisement in News papers/ Publishing of Tenders etc. for all schemes of DNRE & HAREDA		28 lacs	To be done at Head Office level

(Vishal Bhatnagar) S.T.M.

(P.K.Nautiyal) S.E.(A)

(P.K.Yadav) C.S.E.

14. INFORMATION TECHNOLOGY PLAN

The Department of New & Renewable Energy and HAREDA is implementing different schemes like Solar Water Heating System, Solar Home System, Solar Street Lighting Systems, Energy Conversion, Renewable Energy Projects, Solar Cookers, Solar Power Plant, Solar Inverter Charger, Solar Pumping System, Off-Grid Power Plants for general public /institutions/industries. To develop and design of online Software for inviting online applications for the five schemes of the department, the State Govt. has allotted the following budget for the year 2019-20:

Sr. No.	Budget allotted	Under Budget head
1.	Rs.50.00 lacs	2810-51-101-99-51-NV-Grid Connected Rooftop SPV Power Plant programme – I.T.Plan
2.	Rs.25.00 lacs	2810-51-001-99-51-RV-Administrative Set up of New & Renewable Energy – Computerization(I.T.)
3.	Rs.6.55 lacs	3425-60-001-87-99-RV-Rural Energy Programme (State Share)-Computerization (IT)

The activities proposed to be implemented under Information Technology Plan of New & Renewable energy Department/HAREDA are as under:

Sr. No.	Proposed Activities	Remarks
1.	Online Software has been developed by the IT Firm (M/s. We Excel Software Pvt. Ltd.) and department is inviting applications at new developed portal for one scheme i.e. Solar Home systems "Manohar Jyoti". Department is also inviting online applications on old web portal for two schemes of the department (i.e. Solar Power Plant and Solar Water Heating System). Applications for above mentioned	Work order was placed to M/s. We Excel Software Pvt. Ltd. for development of online software at a cost of Rs. 49.00/- Lakh and three year AMC for next Three year for Rs. 21.44 Lakh. Out of the Rs. 50.00 Lakh in the year 2019-20, Rs. 39 Lakh will be paid to IT Firm for online software development (31.85 Lakhs) and one year AMC Charges (

	schemes and other two schemes of the department (i.e. Solar Water Pumping System and Solar Inverter Charger) will be invited through new developed web portal during the year 2019-20.	Rs. 7.15 Lakh) for new web portal.
2	**Computerization (IT)** - The State Govt. has allotted a budget of Rs. 25.00 Lakh for the procurement of Computer and peripherals for Head Office for the year 2019-20.	**Computerization (IT)** – Funds will be utilized for purchase of Computers and peripherals for head office.
3	Budget of Rs. 6.55 Lakh sanctioned by the State Govt. **Computerization (IT)– State Share** for procurement of the Computer Systems and peripherals for the Districts Offices of the State.	**Computerization (IT)- State Share** – Funds will be utilized for purchase of Computers and peripherals for the district offices.

(Pawan Kumar) (Ajit Kumar) (P.K.Yadav)
Programmer P.O. C.S.E.

15. RATE CONTRACTS/ SUPPLIES PERTAINING TO ENERGY EFFICIENT LIGHTING SYSTEMS AND IMPLEMENTATION THEREOF.

- Haryana Renewable Energy Development Agency (HAREDA) is the approved Nodal Agency for finalising all the rate contracts/ supplies pertaining to Energy Efficient Lighting Systems for all the State Government Departments/ Organisations.

- HAREDA, in consultation with major stakeholder Departments/ Organisations, has arranged the rate contract for supply of following LED Street Light Fixtures and has also circulated the RC, issued on 28.02.2019 & to be valid up to 27.08.2019, to all HoDs / MDs of Boards & Corporations , DCs, Commissioners of MCs & ADCs :-

Name of Lighting fixture	Tendered quantity (in Nos)	Rates per unit including GST (In Rs.)
1-18W LED Street light Fixture	61000	990.00
2-35W LED Street light Fixture	10000	1950.00
3-70W LED Street light Fixture	11000	2500.00
4-130W LED Street light Fixture	1500	4200.00
5-100W LED Flood Light	1000	3900.00

- Replacement / retrofitting of Old Street Lighting Fixtures with Energy efficient LED Street Lighting Fixtures will likely result in energy saving as below:-

S. No.	Existing fixture & wattage	To be replaced with	Tentative energy saving per unit in wattage	Tentative no. of fixtures to be replaced (in nos)	Total tentative energy savings (in KW)
1.	28 Watt T5 Street Light fixture	18 Watt LED Street Light fixture	10 watt	61000	610
2.	70 Watt Sodium Street Light Fixture	35 Watt LED Street Light fixture	35 watt	10000	350
3.	150 Watt Sodium Street	70 Watt LED Street Light	80 watt	11000	880

	Light Fixture	fixture			
4.	250 Watt Sodium Street Light Fixture	130 Watt LED Street Light fixture	120 watt	1500	180
5.	2X 70 Watt Sodium Flood Light fixture	100 Watt LED Flood light fixture	40 watt	1000	40
Total					2060 say 2.06 MW
Energy savings per day in Kwh (8 hours operation per day)					16480 Kwh

Outcome: Annual expected electricity saving - 60.15 Lakh units

Monitoring Mechanism

Progress on use of LED Lighting Fixtures will be collected through HODs of major stakeholder departments/ organisation and ADCs. This task will be commenced from the month of June, 2019 and progress reports will be compiled by 30.11.2019.

Special Target

The energy savings outcome from the use of LED Street lighting Fixtures will be compiled with the energy savings from other sources/ programme like replacement of inefficient lighting/ fans in Govt. Buildings, energy savings by providing LED Bulbs in identified villages etc. with the objective to send nomination for "National Energy Conservation Award for the year 2019-2020".

- ✓ Since, there is vast scope in energy savings in indoor lighting; therefore, demand for indoor LED Lights, energy efficient fans, occupancy sensors will be collected from 1st June, 2019 all the Government departments/ Organisations for arranging rate contract for these items too. It is targeted to arrange rate contract of indoor items by 30.09.2019.
- ✓ Since, the present Rate contract for LED Street Lighting fixtures is valid up to 27.08.2019, therefore, demand for arranging new rate contract from Departments/ Organisations shall be collected from 1st September, 2019 and after floating e-tender, it is targeted to arrange new rate contract for energy efficient LED Outdoor items by 31.01.2020.

(Suresh Kumar)
A.P.O.

(O.D.Sharma)
P.D.

16. ENERGY CONSERVATION ACTION PLAN (ECAP)

The Govt. of Haryana has designated the Department of New and Renewable Energy as the State Designated Agency (SDA) to co-ordinate, regulate and enforce the provision of the Energy Conservation Act-2001 in the State of Haryana. Highlights of budget and energy saving potential for implementation of Energy Conservation Action Plan (ECAP) 2019-20 are as under:

Total Energy Saving Potential: 13.47 MW

Budget

Total budget ;Rs 475.86 Lakh
State Govt. Budget : Rs 55.00 Lakh
BEE Financial Support : Rs 420.86 Lakh

List of various energy conservation activities to be carried out by the Department/ HAREDA from BEE financial support and State budget under Energy Conservation Action Plan (ECAP) for the year 2019-20 are as under:

A. ACTIVITIES UNDER BEE FINANCIAL SUPPORT

i. State Partnership for Energy Efficiency Demonstrations (SPEED)

Objective

The main objectives of these demonstration projects are:

- To showcase the effectiveness of energy efficient devices / technologies through practical demonstrations.
- To create awareness about energy conservation

Sr. No.	Sub-Component	Budget	Targets	Outcomes
a	**IMPLEMENTATION Of EE ACTIVITIES IN GOVT. SCHOOLS**			
About Project	Implementation of energy saving measures in rural area Govt. schools (During 2018-19, programme was implemented in	Rs92.40 Lakh	Implementation of programme in 220 nos Govt. Schools (10 Schools per district) of Haryana by providing 30	• To avoid conventional generation capacity of 1168.2 kW • Inculcation of habit of use of energy efficient

	110 nos Govt. schools from BEE financial support)		nos LED bulbs, 30 nos LED Tube lights and 30 nos five star rated fans to each school.	devices / technologies among students by creating awareness
Action Plan	The project will be implemented in 220 nos Govt. Schools by selecting 10 nos Govt. Schools per districts. The Schools will be nominated by concerned ADC offices in consultation with DEO/ Education department. The financial assistance will be provided to concerned ADC office and project will be implemented as per approved implementation methodology. Appliances will be purchased from EESL.			
b	**IMPLEMENTATION Of ENERGY SAVING MEASURES IN KARNAL JAIL**			
About Project	Energy Audit of Karnal Jail was carried out by a team of Department and District Jail Karnal officials and it was suggested to replace all inefficient bulbs / tubelights with LED bulbs/ tubelights and all inefficient fans with energy efficient fans.	Rs 20.0 Lakh.	• Replacement of approx. 2153 nos CFL/ bulbs/ conventional fixtures with LED lights / fixtures • Replacement of approx. 1387 nos Fans	• To avoid conventional generation capacity of 97 kW • Replication of these projects will result in increased energy saving
Action Plan	The financial assistance of Rs 20.0 lakh has been sanctioned to District Jail Karnal. District Jail Karnal will purchase the outdoor lights as per Rate Contract finalized by HPPC. Indoor lights and fans will be purchased from EESL and project will be implemented as per approved implementation methodology in six months.			
c	**IMPLEMENTATION OF ENERGY SAVING MEASURES IN DISTRICT CIVIL HOSPITALS**			
About Project	Office has conducted survey of District Civil	Rs 22 Lakh for 22 nos	Replacement of approx.. 1980 fans	• To avoid conventional generation

	hospitals and it has been observed that there is huge potential of energy saving in District Civil hospital buildings.	District Civil Hospitals	conventional fans with BEE five star rated	capacity of approx 100 kW • Replication of these projects will result in increased energy saving.
Action Plan	Amount of Rs 1.0 Lakh/ District has been already released to ADC offices. The project will be implemented jointly by ADC office and concerned District Civil Hospital officials. The Fans and lights (in case fame requirement is less) will be purchased from EESL and project will be implemented as per approved implementation methodology in six months			
d	**PROJECTS UNDER MUNICIPAL DEMAND SIDE MANAGEMENT (MUDSM):**			
About Project	BEE had provided financial support of Rs 1.276 Crores for implementation of MuDSM pilot projects at Faridabad and Yamunanagar MC area with 90:10 share of HAREDA and concerned MC.	Rs 136.6 Lakh BEE support: Rs 122.6 Lakh	• Replacement of approx. 642-1620 nos fixtures at Faridabad MC area and approx. 1230-1620 nos fixtures at Yamunanagar MC area	• Avoided generation capacity potential of 80-190 kW at Faridabad Municipal Corporation area • Avoided generation capacity potential of 150-190 kW at Yamunanagar MC area
Action Plan	In order to operationalize the projects a meeting was conducted under the chairpersonship of Director NRE/HAREDA. The projects will be implemented by MC Faridabad &Yamunanagar and LED fixtures will be purchased as per Rate contract finalized by HPPC. Installation and all other expenditure for commissioning of LED fixtures will be borne by concerned Municipal Corporation.			
e	**OTHER DEMONSTRATION PROJECTS**			
About Project	Under the Energy Conservation Action Plan for the year 2019-20,	Rs 10.0 lakh	Under this project replacement of	• There will be potential of avoided generation

	BEE has approval a proposal of the Department/ HAREDA for implementation of Energy saving measures in any Heritage/religious site like BrahmSrovar or at any public place or at any Jail:		conventional appliances will be carried out with energy efficient appliances (Preferably replacement of 75 W or above conventional lights is carried out with 35 W LED lights at Rate Contract of LED lights)	capacity of 50 kW. • Replication of the project will result in increased energy saving
Action Plan	Detailed modalities of the Project (s) under this component will be workout in consultation with stakeholders and field offices. Project will be selected based on its energy saving potential/ innovation in Technology etc as per BEE guidelines.			

ii. Promotional Activities under BEE Financial Support

Objective:

- Taking up innovative research projects in the field of energy efficiency and its conservation through educational institutions, college students and individual researchers.
- To organize workshops at regular interval to disseminate information regarding energy efficiency to energy professionals.
- To create awareness about energy conservation and energy efficiency among masses.

Sr. No.	Sub-Component	BUDGET	Targets	Outcomes
a	**STATE ENERGY EFFICIENCY RESEARCH & OUTREACH PROGRAMME:**			
Activity	Under the Energy Conservation Action Plan for the year 2019-	Rs 30.0 Lakh	Demonstration of energy efficiency / research of new and	• Taking up innovative research projects in the field of energy

	20, BEE has approved an amount of Rs 30.0 lakh underState Energy Efficiency Research & Outreach Programmes.		innovative energy efficiency pilot project like liter of light, alternate for battery storage etc. (Four Demo Projects/Research projects).	efficiency and its conservation • Creating mass awareness on EC and EE
Action Plan	Most of the activities will be conducted under MoU signed by HAREDA with NIT Kurukshetra.			
b	**WORKSHOPS / CAPACITY BUILDING OF ENERGY PROFESSIONALS**			
Activity	To organize workshops at regular interval for energy professionals like Accredited / Certified Energy Auditors, Energy Managers, Designated Consumers, building professionals, architects, ECBC Master Trainers, and retailers, DISCOM officials, etc.	Rs 20.0 Lakh	To organiseatleast 5 nos of workshops/ capacity building programmes: • State level Capacity building Programme on Energy Efficiency • Four Training Programmes for capacity building of Stakeholders at district/ Division level	• To increase pool of energy professionals • Development of enhancement skills of energy professionals • Periodic redressed of practical issues faced by these energy professionals. • To address issues faced by stakeholders.
Action Plan	State level workshop will be conducted under the guidance of BEE. Division level workshops will be conducted in association with ADC offices.			

c	**GENERAL AWARENESS PROGRAMME**			
Activity	General awareness programmes for public, students and other stakeholder	Rs 30.0 Lakh	• Development and providing Publicity Material • News Paper advt. on energy efficiency, standard, energy audit, labelling programmes and ECBC etc. • Awareness campaign/ banners/ standees etc for 22 districts. • Preparing and airing Radio Jingles of 10 to 40 sec. duration	• Enhancing awareness among the masses about the benefits of energy efficiency and energy conservations.
Action Plan	Activities will be conducted jointly by Head-office and field offices of the Department. Newspaper advt. and Radio Jingles will be aired through DIPR. Publicity activities like campaigns/ distribution of publicity materials will be carried out through field offices. Development of promotional material etc will be carried out at HQ level.			
d	**SCHOOL AWARENESS PROGRAMME / SCHOOL CAPACITY BUILDING PROGRAMME**			
Activity	School Awareness Programme / School Capacity Building Programme	Rs 20.0 Lakh	• Distribution of publicity material / promotional study kits, quiz competition, study visits, Tip sheets	Inculcation of habit of use of energy efficient devices / technologies among students by creating awareness

			etc. • Energy Clubs in Schools.	
Action Plan	Activities will be carried out through NIT Kurukshetra and field offices of the Department.			

B. ENERGY CONSERVATION ACTION PLAN FOR THE YEAR 2019-20 UNDER STATE BUDGET

Sr. No.	Sub-Component	BUDGET	Targets	Outcomes
a	**PROMOTION OF ENERGY EFFICIENT DEVICES**			
Activity	LED village campaign for providing 9 Watt LED Bulbs @ Rs 20/LED Bulb (User Share @ Rs. 20/- per Bulb and Govt. Share @ Rs 45/- per Bulb) is being organised in all villages of Karnal Block and Bawal Constituency. Each household is being provided with 2 nos LED bulbs	An amount of Rs 50.00 Lakh allocated for the year 2019-20 under State Budget subhead "Promotion of Energy Efficient Devices". Balance will be met from BEE funds and collected user share	During the financial year 2019-20, LED village campaign will be organised in all villages of Nangal Chaudhry Block, Mahendragarh and Hatin Block, Palwal Approx. 128472 bulbs will be distributed to 64236 nos households	• The extended project will have avoided Generation capacity potential of approx 12 MW as compare to ICL and implementation of complete project will have avoided Generation capacity potential of approx. 21 MW • Creating mass awareness on EC and EE
Action Plan	LED bulbs have been purchased from EESL. The LED village campaign will be organized in every village by concerned ADC office by collecting user share along with application / request form and other documents like Aadhar Card/ Ration card copy / Electricity bill copy etc. Maximum 2 nos. LED bulbs will be provided to each household.			

<table>
<tr><td>Objective</td><td colspan="4">• To promote usage of various Energy Efficient Lighting / Devices among individuals.
• To initiate various activities namely Energy Efficient Lighting (LED) / Devices distribution and their promotion Campaigns especially in rural sector, Schools / Colleges etc.</td></tr>
<tr><td>b</td><td colspan="4">ENERGY AUDIT & ITS IMPLEMENTATION SCHEME</td></tr>
<tr><td>Activity</td><td>Under the scheme, the State Govt. provide 100% financial assistance for conduct of energy audit by Govt. & Semi. Govt. Buildings. For other buildings financial assistance of 50% of the cost subject to the max. of Rs. 50000/- is being provided</td><td>An amount of Rs 5.0 Lakh is allocated in the sanction budget for the year 2019-20.</td><td>Energy Audit of 10 buildings/ Industries will be facilitated by Department/ HAREDA under the scheme during 2019-20.</td><td>To identify the areas where excess where excess energy consumption or wastage of energy is taking place.</td></tr>
<tr><td>Action Plan</td><td colspan="4">• Application for conduct of energy audit shall be submitted by concerned Department/ Building Owner/ Industries to concerned ADC office, as per Energy Audit scheme guidelines in the prescribed format.
• On receipt of application Department / HAREDA, will grant consent to those governments building who are eligible under the scheme. The consent shall be valid for maximum of six months.
• Concerned building owner/ industry/ department shall submit energy audit report to Director New and Renewable Energy Department & HAREDA, Panchkula through concerned district ADC office.
• Energy Auditor of the firm needs to make a presentation on the finding of energy audit, before the Committee of New and Renewable Energy Department. On acceptance of energy audit report by Committee, financial assistance will be released to the concerned Department.</td></tr>
<tr><td>Objective</td><td colspan="4">The objective of the scheme is to identify areas where excess energy consumption or wastage of energy is taking place</td></tr>
</table>

C. OTHER ACTIVITIES TO BE CARRIED OUT FOR EFFECTIVEIMPLEMENTATION OF ENERGY CONSERVATION ACT 2001.

i. Perform Achieve & Trade (PAT)

Central Government vide notification S.O. 687 (E) dated 30 March 2012, has specified the designated Consumers and also Notified Energy Conservation Rules (PAT Rules) on 30th March 2012, ref. No G.S.R. 269(E). About 478 designated consumers in these sectors have been brought under the umbrella of the PAT Cycle 1. Presently, PAT cycle – I have been completed, wherein 7 Designed consumers of Haryana were covered. Energy Saving Certificates has been issued (140764 nos to six DCs) by BEE to these DCs and 100% compliance of Designated Consumers of Haryana was observed wherein energy equivalent to 1.40 Lakh Ton of oil equivalent was saved by Designated Consumes of Haryana.

In PAT cycle II, six new Designated consumers of Haryana were included along with existing 7 Designated Consumers. The PAT II (3-year) cycle will be completed in March 2019. Further, in PAT Cycle III and IV four more designated consumers were added. Hence, so far 17 nos Designated Consumers are covered under PAT Scheme.

Targets:

- As notified by BEE for each Designated consumers (which will be approx. 5-6% energy saving from baseline year).
- Energy Audit of selected feeder of Discoms (DHBVNL & UHBVNL)

Budget: Rs 10 lakh (only for conduct of energy audit of Discoms @Rs 5.0 Lakh/ Discom).

Action Plan: The PAT Cycle II will be completed in March 2019. The Designated Consumers are required to submit the energy return forms and other requisites documents to this office within three months i.e. by 30 June 2019. The energy returns forms and other requisites documents will be evaluated by Department and recommendations will be sent to BEE for further necessary action. For conduct of energy audit of selected feeder of Discoms, sanction have been already granted to DHBVNL and UHBVNL.

b. Implementation of Energy Conservation Building Code (ECBC).

To ensure implementation of ECBC in Haryana, the State Govt. has issued directions vide notification no. 19/6/2016-5P dated 31.03.2016, for making ECBC mandatory for the commercial buildings of following categories having connected load of 100 kW and above or contract demand of 120 kVA or above:-

i) Commercial Complexes, Shopping Malls, Trade Buildings.
ii) Hotels, Motels, Restaurants, Transit-cum-Boarding Houses, Banquet Halls, JanjGhars, Resorts.
iii) Cinema Halls, Auditoriums, Clubs, Convention Centres, Concert Halls.
iv) Office Buildings, Banks, Public Assistance Institutions.
v) Hospitals, Institutional Care Centers, Institutional Buildings, Information and Technology Parks, Cyber Parks and Business Process Outsourcing (BPO) Buildings.

ECBC cell has been also setup at HAREDA for effective implementation of ECBC with the financial support from BEE. Following activities will be carried out by ECBC during the year.

- Drafting and submission of revised ECBC Notification, Draft bye-laws and ECBC rules documents
- Evaluation and Techno-commercial feasibility report of 6 nos buildings for ECBC compliance.
- 9nosTraining programme on ECBC will be organised during the year for eg. Administrators, Government officials, Architects , Engineers, builders etc
- Submission of draft on buildings having consumption above 100 kW or 120 kVA.

Budget: BEE had engaged M/s GreenTree Building Energy Pvt. Ltd by inviting RFP with financial sanction of Rs 34.86 Lakh.

Action Plan: The activities will be organized by ECBC cell under BEE and Department support. The progress will be reviewed by BEE and HAREDA from time to time.

(Sukhchain Singh)	(P.K.Nautiyal)	(O.D.Sharma)
P.M.	S.E.(A)	P.D.

17. STATE ENERGY CONSERVATION AWARDS

Under this scheme awards are given to those consumers of industrial, commercial, govt. buildings, educational institutions, hospitals, municipal committees / corporations and individuals who have excelled in adopting the various energy conservation measures in their buildings / units to save electricity / other fuels.

Objective of the scheme:

- To create awareness among the Industrial, Commercial, Govt. Buildings and Educational Institutes sectors about the energy conservation.
- To recognize the efforts of the Industrial, Commercial, Govt. Buildings and Educational Institutes sector consumers in conserving energy by way of giving them awards/certificates of merit.

About Scheme

The Haryana Govt. has identified energy conservation as one of the thrust areas and many initiatives have been taken in this regard. One of the initiative is to give awards to those Industrial, Commercial, Govt. Buildings, Educational and consumers opting innovation in technology who have excelled in adopting the various energy conservation measures in their buildings / units to save electricity / other fuels. As per scheme guidelines following are Categories of consumers and award money:

Cat. No.	Category of Award	Award money
1.	Industries	
	i. Connected Load 1 MW and above	i. First prize Rs.3.0 lac and certificate & Shield ii. Second Prize Rs.2.0 lac and certificate & Shield
	ii. Connected Load below 1 MW	i. First prize Rs.2.0 lac and certificate & Shield ii. Second Prize Rs.1.0 lac and certificate & Shield

2.	Any type Commercial Buildings (Shopping Malls/ Plazas / Hotel/ Hospitals/Corporate/ Resorts etc) including GRIHA/ LEED or IGBC/ ECBC compliant buildings: i. Connected Load 1 MW and above ii. Connected Load below 1 MW	 i. First prize Rs.2.0 lac and certificate & Shield ii. Second Prize Rs.1.0 lac and certificate & Shield i. First prize Rs.1.0 lac and certificate & Shield ii. Second Prize Rs.0.50 lac and certificate & Shield
3.	a. Govt. Buildings/ Offices with covered area of min. 5000 sq. feet. including LEED /green Building, GRIHA rated or ECBC Compliant building (having connected load above 500 kW) b. Govt. Buildings/ Offices with covered area of minimum 5,000 Sq. feet (having connected load below 500 kW)	i. First Prize Rs.2.0 lac and certificate & Shield ii. 2nd Prize Rs.1.0 lac and certificate & Shield i. First Prize Rs.1.0 lac and certificate & Shield ii. 2nd Prize Rs 0.50 lac and certificate & Shield
4.	a. Institutions & Organizations (Pvt. Schools/ Universities, Colleges educational, Govt./ Govt. aided Schools/Universities/ Colleges, Organizations (Having connected load more than 30kW) b. Residential Building/ Societies having load more than 10kW	i. First Prize Rs.2.0 lac and certificate & Shield ii. 2nd Prize Rs.1.0 lac and certificate & Shield i. Rs. 0.50 lac and certificate & Shield
5.	Innovation/ New Technologies / R&D Projects including innovative promotional Projects , Research & Innovation in energy conservation, energy efficiency, Waste to Energy and Renewable Energy Area	i. First Prize Rs.2.0 lac and certificate & Shield ii. 2nd Prize Rs.1.0 lac and certificate & Shield
	Total Award Money	Rs.23.50 lac

	Total Budget required for organizing the Ceremony + associated expenditure on prize money, shields, certificates etc.	**Rs.30.0 lac**

Target for 2019-20

During the year State Energy Conservation Awards will be given for the year 2016-17 and invited for 2017-18 which will be evaluated and distributed.

Financial Budget

There is budget provision of Rs 30.0 lakh in the State annual budget.

Outcomes

These Awards will be given to Industrial, Commercial, Govt. buildings, Institutional and residential buildings who have done excellent work in the area of energy conservation, with an objective of promotion of energy conservation activities in the State.

Action Plan

SECA for the year 2016-17 are under final stage. Department will invite the nominations for SECA for the year 2017-18 through press advertisement and through concerned ADC offices. The applications will be evaluated by the Department/ HAREDA and recommendations will be sent to State level committee for finalization of award.

(Vishal Bhatnagar)	(P.K.Nautiyal)	(P.K.Yadav)
S.T.M.	S.E.(A)	C.S.E.

NEW & RENEWABLE ENERGY DEPARTMENT, HARYANA DETAILS OF BUDGET ESTIMATES FOR THE YEAR 2019-20		
S. No.	**NAME OF SCHEME & SCHEME CODE**	**Budget 2019-20**
A	**RECURRING**	**(Rs. in lakh)**
1	**Administrative Set up of New & Renewable Energy--P-01-40-2810-51-001-99-51-RV-RECURRING**	
	01- Salary	215.00
	03- Dearness Allowance	32.00
	04- Travel Expenses	1.50
	05- Office Expenses	1.40
	12-Schlorship & stipends	3.00
	21- Motor Vehicle	2.00
	33- Professional & special services	2.00
	45- POL	3.50
	67- Medical reimbursement	3.00
	69- contractual Services	7.60
	70- Leave Travel Concession	5.00
	79- Ex -Gratia	4.00
	88- Compuerisation (IT)	25.00
	TOTAL	**305.00**
2	**Promotion of New & Renewable energy Source-11 SUBSUDIES- P-01-40-2810-51-102-99-51-RV- Solar Invertor Charger**	**30**
3	**Supporting Programme for promotion of New & Renewable Energy Sources and energy Conservation -P-01-40-2810-51-190-99-51-RV**	
	09- Grant In Aid- ADMN. Set up of HAREDA	150.00
	TOTAL	**150.00**
4	**Rural Energy Programme (State Share) State share-P01-40-2810-3425-60-001-87-99-RV**	
	01- Salary	555.00
	03- Dearness Allowance	82.00
	04- Travel Expenses	4.00
	05- Office Expenses	7.00
	12-Schlorship & stipends	6.50
	21- Motor Vehicle	0.75
	45- POL	3.00
	67- Medical reimbursement	7.00
	69- contractual Services	1.00
	70- Leave Travel Concession	10.00
	79- Ex -Gratia	11.20
	88- Computerisation (IT)	6.55
	92- Energy Charges	2.00
	TOTAL	**696.00**
	TOTAL - A (RECURRING)	**1181.00**

S.No.	Name of Scheme	Budget 2019-20
B	**NON RECURRING**	(Rs. In lakh)
5	**Installation of Solar Water Pumping System in the State 011- subsidies-P-01-40-2810-51-101-98-51-N.V.**	40000.00
6	**Grid Connected Rooftop SPV Power Plant Programme- 11- SUBSIDIES -P-01-40-2810-51-101-99-51-NV-NON RECURRING**	
	Grid Connected Rooftop (GCRT)Solar Power Plant Programme	1790.00
	LED based SPV Home Lighting	2500.00
	SPV Street Lighting System for Rural area	400.00
	Off Grid Power Plant	250.00
	CBP/IBP/NSBP	10.00
	I.T. Plan	50.00
	TOTAL	**5000.00**
7	**Promotion for New &Renewble Energy for Urban, Insustrial and commercial Application-P-01-40-2810-51-103-99-51-NV**	
i	Demonstration applications of Solar Thermal Technology for Social Sector	70.00
ii	Promoting Solar Water Heating Systems for general public/ Solar Cities	60.00
	TOTAL	**130.00**
8	**Research,Design and development in Renewable Energy- 11 Subsidies-P01-40-2810-104-99-51-NV-NON RECURRING**	
	Publicity & Awareness Programme.	170.00
	EC Awards	30.00
	Scheme on Promotion of Energy Efficiency Initiatives (BURM)	0.00
	Energy Audit & its implementation	5.00
	Energy Audit of Villages	0.00
	Promotion of EEE devices	50.00
	TOTAL	**255.00**
	Kalpana Chawla Haryana Solar Award- HAREDA -P-01-40-2810-51-105-99-99-N.V.	
9	**Energy Efficient Building Programme-34 OTHR CHARGES--P01-40-2810-51-190-98-51-NV**	
	34- Other Charges	70.00
	69- Contractual Services	35.00
	TOTAL	**105.00**

S.No.	Name of Scheme	Budget 2019-20
10	**Shikshadeep scheme on LED based Solar Larterns for SC students-*P01-40-2810-51-789-99-51-NV-NON RECURRING**	1.00
11	**Purchase and Installation of Solar Panel and Allied Equipments- Installation of Solar Power Plants in Goshalas in the State P-01-40-4810-51-101-99-99-N.V.19-Machinery and Equipment**	919.01
	TOTAL - B- NON RECURRING	46410.01
	GRAND TOTAL (A+B)	**47591.01**