DEPARTMENT OF SCIENCE & TECH. & RENEWABLE ENERGY

MAJOR ACHIEVEMENTS 2018-19

- **Popularization of Science –**
  Sanction was issued to educational institutes for allowing around 8650 students to visit Science City Kapurthala/Science Planetarium Kurukshetra/Energy Park Chandigarh with financial assistance provided under Popularization of Science Scheme.

- **Support to Research Institutions-**
  Financial assistance of Rs. 38.96 lakh was provided under the Research Project scheme to 34 project proponents of various Institutions.

- **State Level Energy Park**–
  Around 3447 visitors (including students) visited the Energy Park during 2018-19.

CHANDIGARH RENEWABLE ENERGY AND SCIENCE & TECHNOLOGY PROMOTION SOCIETY (CREST)

- **Installation of Rooftop Solar PV Systems:**
  Chandigarh Renewable Energy and Science & Technology Promotion Society (CREST) under the Aegis of Department of Science & Technology & Renewable Energy, Chandigarh Administration is mandated for installation of SPV Power Plants in Chandigarh to popularize harnessing solar energy for power generation. Efforts has been made to maximise production of Renewable Energy from Solar.
  During the period **6.435 MW** SPV Power Plants has been installed taking the total figure to **28.373 MW** installed capacity of Solar Power Plants out of which Chandigarh Administration has installed Rooftop SPV Power Plants of overall capacity of **17.981 MW** on **261 Govt. buildings/ sites** of Chandigarh and rest about **10.392 MW** on **1378Nos.** buildings has been installed under private sector buildings including private residential buildings. Work orders for additional **2.611 MW** SPV Power Plants at different Govt. sites in Chandigarh has been placed and work is in progress.

- **Subsidy Release**
  MNRE is providing 30% subsidy to the beneficiaries installing SPV Power Plants at their residences and MNRE (GOI) has allocated the target of 5MW capacity of SPV Power Plants in the domestic sector to CREST vide order No. 318/20/2018-GCRT dated 15.02.2018. MNRE has given the time line for commissioning of projects for 15 months i.e upto **15.05.2019.** U.T. Chandigarh Administration has already amended building bye-laws where installation of SPV Power Plants above plot size of 500 sq. yards is mandatory. Due to vigorous campaign for installation of SPV Power Plants in the domestic sector,

4391 numbers of beneficiaries have applied for installation of SPV Power Plants. CREST has already empanelled 63 Nos. of EPC contractors to achieve the target upto **15.05.2019**. Out of which **1565** systems have already been installed & commissioned for which subsidy of**Rs. 4.63 Cr** has already been released out of total amount of **Rs. 5.01 Cr** released by MNRE (GOI) as advance.

ONGOING PROGRAMMES 2018-19

- **Popularization of Science –**

  The Scheme of Popularization of Science provides for promotion of the activities related to Science popularization including Organizing Science Quizzes, Science Meets, State Level Science Exhibition, Science Tours, Competition on Scientific Models, Essay Writing amongst the school / college students, Publicity in Electronic, print or other media sponsoring innovative projects of students in the institutes/colleges of U.T, Chandigarh.
  Various activities are carried out throughout the year by different modes such as Print Media, Science Slides, Public Debates, Slogan Competition, Hand Bills, Audio & Visual Multimedia CDs, Poster Making, Quiz, Mobile Van, Drama / Skit, Healthcare Talk, Animation Posters etc., Lectures, Mela, Debates, Film Shows, Folk Performances & Science Exhibitions etc.

- **Financial Assistance to Chandigarh Renewable Energy Science & Technology Promotion Society (CREST) –**

  Financial Assistance to Chandigarh Renewable Energy Science & Technology Promotion Society (CREST) is provided every year for the salary of the staff, contingency, funds for different schemes and provision of vehicle etc. The Society has no other source of income except the financial assistance given by the Department of Science & Technology & Renewable Energy. The Chandigarh Administration has form a society "Chandigarh Renewal Energy Science & Technology Promotion Society" (CREST) under Act XXI of 1860 Registration No. 3886 of 2007 on dated 17thMay, 2007 in the Department of Science & Technology to achieve the aim and objective as mentioned below.

  - To create a scientific temper and awareness in the community and develop in them a logical thought process and present the marvels of Science & Technology for public appreciation and understanding with state-of-art gadgets and exhibits. This would further help in supplementing formal science education in the UT by the setting up of science related edutainment centers for the children e.g. mini science park, Energy Park etc.
  - To promote science related activities by facilitating flow of information to educational institutions, government bodies, industries, entrepreneurs, budding scientists and the general public.
  - To promote Bio-Technology and other related fields of Bio-Informatics, Nano Technology, etc by establishment of Bio-Tech. Incubation facilities and provide technical support to the Administration for the establishment of Bio-Tech. Park.

- To promote the development/implementation of alternative non-conventional energy technologies specially Solar Energy as per MRES, GOI guidelines.
- To promote other Science & Technology activities in U.T., Chandigarh.
- To promote other Bio-Technology activities in U.T., Chandigarh.
- Promotion and development/implementation of alternative non-conventional. Energy technologies programs/projects.
- Implementation of a comprehensive energy conservation programme in the industrial, agricultural and commercial as well as household sectors.
- Promotion and development of new and emerging technology areas such as co-generation, Alternative fuels, Battery operated vehicles.
- Collection of energy database to provide policy and planning input to the State Government.
- Promotion of Non-Conventional Energy Source/ Programme in the U.T., Chandigarh.
- To develop Chandigarh as Model Solar City.
- To set in place the policies/guidelines for facilitating private sector participation in Non-Conventional energy based projects.

- **Support to Research Institutions –**

  The objective of the scheme is to support applied Research and Development in the field of Science & Technology, which has direct relevance to the U.T., of Chandigarh. Under this scheme funding is provided to Universities, Colleges, Technical & Educational Institutions or other organizations located in U.T., Chandigarh.

- **Promotion of Model Solar City Programme –**

  The Union Territory of Chandigarh does not have its own power generating unit of any kind. It derives the power from the neighboring states and distributes to the consumer. It has to rely solely on the power generation capacity of these States and in case of any eventuality in these Stations the residents of the Chandigarh have also to suffer. To overcome from this situation, U.T has to produce its own power. The appropriate route for power generation suited to U.T, Chandigarh is Solar Photovoltaic. This is also a green energy initiative. As land is scarce resource in Chandigarh, so rooftop, based SPV plant has been planned.

  The Ministry of New & Renewable Energy (MNRE), Govt. of India. New Delhi has selected Chandigarh to be developed as Model Solar City in July 2009. CHANDIGARH RENEWABLE ENERGY AND SCIENCE & TECHNOLOGY PROMOTION SOCIETY (CREST) is the Nodal Agency for executing Solar & other RE Projects. It works under the aegis of Department of Science & Technology & Renewable Energy of UT Chandigarh which is the Nodal Deptt. for Renewable Energy.

The Master Plan of Chandigarh was approved by MNRE in Jan 2012, as per master plan long term target for installation of rooftop SPV Power plants was 10MWp till 2018. Chandigarh is well ahead in terms of achievement and has already installed & commissioned 28.862 MWp Grid tied Rooftop Solar plants as on 30thApril, 2019 including Private Sectors.

In view of enhanced target of 100 GW for India to be achieved by 2022, Govt of India **has set 69 MW as Solar PV target for Chandigarh Administration to be achieved by 2022,** as a part of Model Solar City Programme under the aegis of National Solar Mission.

The Chandigarh Administration is planning to install about 15 MW rooftop Solar plants over Raw water Tank of sec-39 water works under RESCO mode and 2MWp on STP-3 BRD. In addition, 25.00 MWp SPV Power Plant on Patiala-ki-Rao,(a seasonal rivulet) in Chandigarh is also in pipeline**.**

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- **Biogas Generation Plant From Waste Vegetable/Fruit/Other Wastes.**

  Chandigarh has a big grain/ vegetable market and number of similar markets exist in other parts of the city which produce a lot of vegetable/ fruit waste. This vegetable/ fruit waste can be converted into bio-gas by processing the waste in a specially designed digester and besides this, also produce rich manure. Thus, the city waste can be put to better use and save the city from nauseating, irritating and foul smell. Therefore, the Biogas generation plants are being installed in the required places of UT, Chandigarh.

- **State Level Energy Park**

  The state Level Energy Park has been set up in the Botanical Garden at Sarangpur, U.T. Chandigarh. The State Level Energy Park have different demonstration units based and run by Solar Energy objects on theme Conservation of Energy, Solar run Video Games, Cars, Train, SPV Street Lights, Swimming Pool, Energy Wind Generation Operation Storage of Energy etc.

The land measuring 3.00 acres and other facilities has been provided by the Department of Forests, Chandigarh Administration. The Ministry of New & Renewable Energy, Govt. of India had sanctioned a financial assistance of Rs.88 lakh to meet the procurement cost of different solar devices installed and commissioned in the Energy Park. The rest cost component has been met from U.T. fund.

The Energy Park is being run by Department of Science & Technology and Security staff, technical staff has been deployed for its successful running.

- **Battery Operated Vehicles**

There is a growing concern about environment degradation due to increased number of vehicles that are plying on the Chandigarh roads emitting obnoxious gases polluting the atmosphere with the increase of population and traffic. The number of vehicles that are coming on the road is multiplying day by day and hence the pollution level increasing. Since, emphasis is being laid on the pollution free environment, this can only be achieved through environmental friendly machines. Therefore, there emerges a need to contain the level of pollution and introduce battery operated vehicles in the city on experimental basis so that the city does not develop into the polluted city like Delhi.

In the present day scenario, 80% of other mechanical surface transport depends upon petroleum products with the consequent fall out of toxic and corrosive pollutants. The electric vehicles are therefore, the answer these have the advantages indicated below:-

- *These do not pollute the atmosphere.*
- *The noise level is as low as 70 db as against 95 db of the diesel and petrol run vehicles.*
- *Deployment of the electric vehicles results in conservation of oil.*
- *Electric vehicles are subjected to less vibration and hence they demand less maintenance efforts.*
- *Unlike in diesel/petrol vehicles the electric vehicles are not affected by the idling effects.*
- *The running of electric vehicle is jerk free and smooth and comfortable ride.*

In order to encourage the use of Battery Operated Vehicles for general public (individuals) subsidy would be provided for promotion of these systems. Further, Department of Science & Technology has also purchased few such battery operated vehicle for demonstration effect in the City.

PROPOSED PROGRAMMES 2019-20

In the year 2019-20 all the previous year programmes are proposed to be continued. The budget allotted for the current year for various programmes are as under:-

PROPOSED SCHEME 2019-20

(Rs. in Lakh)

Sr. No.	Name of Project/Scheme	Total Expdr. 2018-19	Budget Outlay (Proposed) 2019-20
1	Popularization of Science	42.100	60.00
2	Financial Assistance to Chandigarh Renewal Energy Science & Technology Promotion Society (CREST)	20.000	50.00
3	Support to Research Institutions (Investments)	39.030	50.00
4	Promotion of Model Solar City Programme (Solar Photovoltaic Power Plant, Solar Photovoltaic)	300.000	300.00
5	Promotion of the Non Conventional Energy Sources (Biogas System, Solar Cooker, Solar Green House and State Level Energy Park)	22.000	10.00
6	Battery Operated Vehicle	10.000	10.00
7	Solar City	599.00	700.00