

### 7.1.7 Green Practices

- **Students, staff using**
  - a) Bicycles*
  - b) Public Transport*
  - c) Pedestrian friendly roads*
- **Plastic-free campus**
- **Paperless office**
- **Green landscaping with trees and plants**

#### **Response:**

Several initiatives have been undertaken by the Institute to implement green practices and develop it into an eco-friendly campus:

- *100% solar powered campus without diesel generators.*
- *Prohibition of Petrol/Diesel motorized vehicles to encourage walking. Only battery operated vehicles permitted.*
- *Campus is non-smoking tobacco free.*
- *Prohibition of plastic carry bags.*
- *Development of green belts.*
- *Rain water harvesting.*
- *Use of e-resources for paperless operation.*

#### **Renewable Energy Initiatives at DEI**

The current renewable energy initiatives are:

##### **Solar thermal and Solar Photovoltaic (SPV) power plants:**

- *658.2kWp powered-campus with 11 Distributed Roof-Top Solar PV Power Plants - multiple Renewable Energy Microgrid.*
- *A 200 kWp Solar Agriculture Farm with multiple land use, is being developed as part of DST Mission Innovation R&D.*
- *50kWpsolar installed at its ODL Centers in various cities*
- *5 kW Solar – Wind integrated power plant at Melathirukenkatanathapuram, Tamil Nadu.*
- *Solar thermal cooking systems in Hostels of DEI and Dayalbagh Colony for boiling amla and decoction of herbs for ayurvedic products when not in use for hostel cooking.*
- *Conversion of a Diesel Van into a Solar Electric Van.*
- *As a result, the Dayalbagh Town Area has been declared as a Green Campus by MNRE, Government of India.*
- *D.E.I. was awarded the Excellence Award and Certificate of Appreciation for effectively using CST system for Community Cooking and Second Prize for Energy Conservation measures adopted in UP State, in 2016.*
- *20 kW biogas plants.*

**Carbon-Free Campus:** No fuel driven vehicles ply in the campus.

### **Design and Fabrication of Electric and Hybrid Vehicles**

#### ***Green landscaping with Trees and Plants***

Around 75% of the campus is covered with lush green gardens and lawns. Annual tree plantation drives through its NSS activities and joint initiatives with SPHEEHA.

**Bio-Diversity Parks:** Two Bio-Diversity Parks spread over more than 15 acres developed with more than 1200 plants to conserve and re-introduce the native species of Agra region.

**Green House:** Two green houses to enhance the income of farmers by growing non-seasonal produce.

#### **Air Quality Monitoring**

Continuous ambient air quality monitoring station for different gases, particulate matter and also an online weather monitoring station.

#### **Some Research Initiatives**

- *Biofabrication of nanobiomaterials (cellulose and its precursor-wood pulp) as natural bio-absorbents for bioremediation of toxic metals from water bodies that include drinking and irrigation water.*
- *Green nanotechnological enhancement in bio-sorption capacity of plant-based products for remediation of toxic metals from water bodies.*
- *Design and development of fiber-optic sensors for water and liquid fuel pollution monitoring.*
- *Development of river filtration system on the banks of river Yamuna in Dayalbagh, Agra, as sustainable solution for meeting drinking water requirement under the DST Water Technology Initiative Programme.*
- *Bio-fertilizer formulations on a lab scale have been developed based on reed bed microbes. Production of these microbes are being scaled up to produce large quantities of bio-fertilizer.*
- *R & D in cost-effective use of petha industry waste for biohydrogen production using dark fermentation technology.*

Environment education is compulsory core course in all UG programmes and environment awareness is also an integral part of the Sigma-Six approach of DEI.

#### **Links**

##### **Environmental Consciousness**

- <https://www.dei.ac.in/dei/files/NAAC/7.1.3%20Environmental%20Consciousness.pdf>

### Green Practices (Please see Section 7.1.7 in NAAC 2018 link below)

- [https://www.dei.ac.in/dei/index.php?option=com\\_content&view=article&id=856&Itemid=418](https://www.dei.ac.in/dei/index.php?option=com_content&view=article&id=856&Itemid=418)

### Swacch Bharat

- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/Swaach%20Bharat%207.1.7.pdf>

### Smart Initiatives Project

- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/GS%20Autonomous%20Vehicle.bmp>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/Clean%20Campus%20submitted.pdf>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/Consolidated%20Answers.pdf>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/Electric%20Vehicle%20Technology%20@%20DEI.pdf>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/Smart%20Agriculture.pdf>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/Smart%20Gaushala,%20Smart%20Truck%20Tracking%20and%20Smart%20Dairy%20Plant.pdf>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/Smart%20technologies%20at%20DEI%20-%20Eclass%20Room.pdf>
- [https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/Wastereport%20\(1\).pdf](https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/Wastereport%20(1).pdf)
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/Writeup%20for%20DEI%20Smart%20Campus.pdf>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/DBD%20Fig%201.jpg>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/DBD%20Fig%202.jpg>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/DBD%20Fig%203.jpg>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/GS%20eclassroom.jpg>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/GS%20live-delivery%20infrastructure.jpg>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/GS%20empowering%20youth%20in%20tribal%20areas%20with%20smart%20classes.png>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/GS%20icnc-tall.png>
- <https://www.dei.ac.in/dei/files/NAAC%20Self%20Qualitative%20Assessment/smart%20initiative%20report%206.5.5/GS%20tablet-based%20teaching.png>