

Chandigarh Solar City

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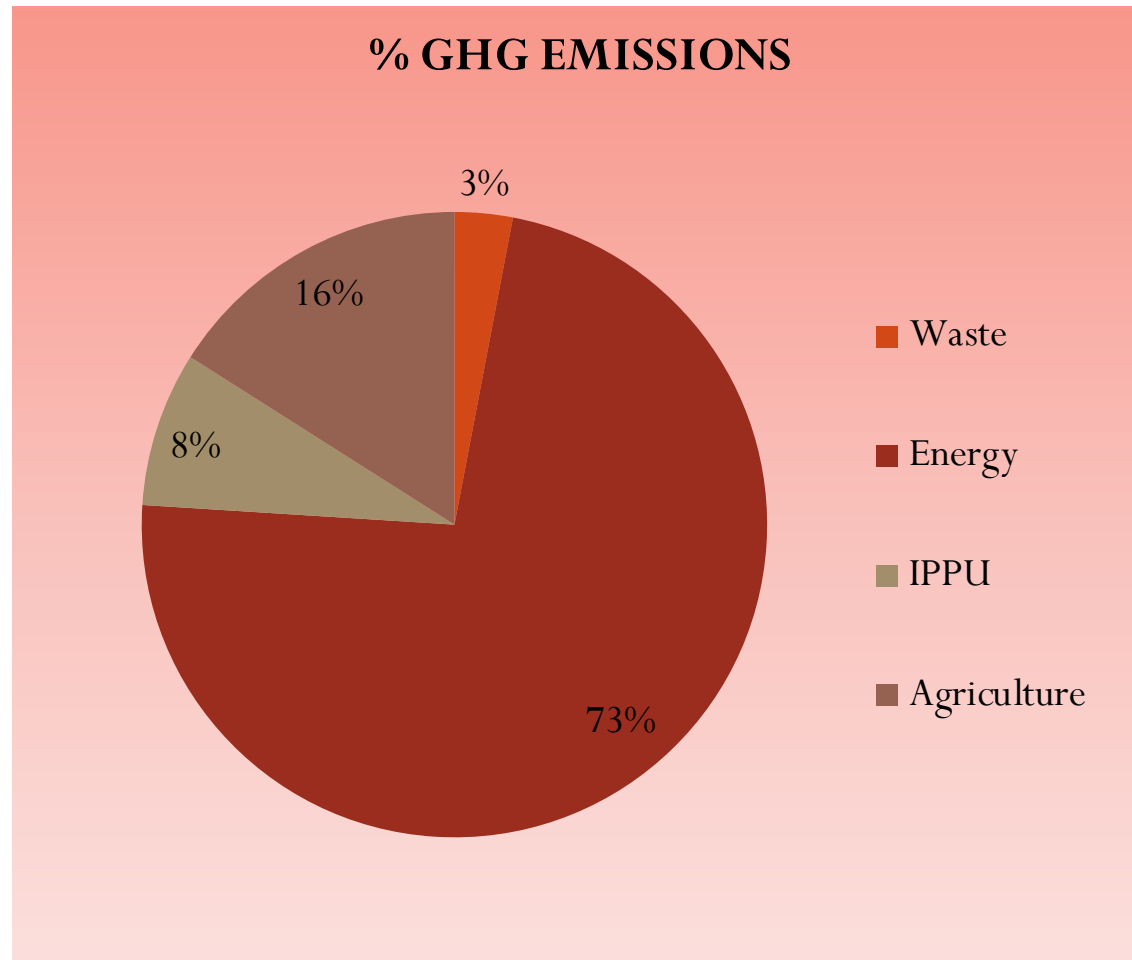
Project Associate

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Background (1)

Sector-wise contribution to GHGs



Electricity and Transport
highest contributor under the
Energy Sector

Source: India's Second Biennial Update Report, 2018

Background (2)

Government of India's Solar City Initiative

- The “Development of Solar Cities” programme started by Ministry of New and Renewable Energy in 2011.
- Support/encourage Urban Local Bodies to prepare a Road Map to guide their cities in becoming ‘renewable energy cities’ or ‘solar cities’.
- Solar City
(10% reduction in projected energy demand-
Renewable energy technologies + energy efficient measures)
- So far, 48 cities have been given approval to be developed as solar cities.

Background: Chandigarh Solar City

- Chandigarh's ever-increasing population has led to a surge in the trend of per capita consumption of electricity.
- The city's electricity sector does not generate electricity of its own.
- Therefore, it becomes imperative for the city to reduce its dependency on the central grid by generating power from renewable energy sources.

Institutional Arrangement

- **Implementing Agency:** Chandigarh Renewable Energy and Science & Technology (CREST)
- **Funding Agency:** Ministry of New and Renewable Energy (MNRE) and Department of Science and Technology (DST), Chandigarh
- **Distribution Company:** Chandigarh Electricity Department (CED)

Activities

- **Preparation of a “Master Plan”:** The Master Plan prepared by TERI in 2012
- **Establishment of Solar City Cell:** Responsible for identifying sites and implementation of solar projects.
- **Awareness raising for solar energy, promotional and capacity building initiatives.**
- **Tracking through MRV system:** Responsibility of monitoring, reporting and verifying power generation from each installed plant

Overcoming the Barriers

Barrier	Solution
Lack of loan products or easy financing options on SPV for residential consumers	<ul style="list-style-type: none">• Creation of online subsidy portal• Vendor empanelment
Low willingness for SPV Installation on residential consumers due to low electricity tariffs	<ul style="list-style-type: none">• Revision of power purchase cost• Promotional activities

Impact of Activities

- **Reduction in CO2 emissions:** As on 1st October 2018, 31,000 metric tons of CO2 emissions equivalent to carbon sequestered by 3.4 million trees have been eliminated.
- **Saving on electricity bills:** Savings of USD 3.426 million have been made by consumers on electricity bills till date.
- **Consistent and reliable power source:** Introduction of solar energy has alleviated burden on the grid
- **Contributing to National Renewable Energy Targets:** Helped in meeting the renewable purchase obligations
- **Achieved milestones**

Good Practices (1)

- **Participatory process:** The preparation of Master Plan involved key stakeholders such as line ministries, urban local bodies and DISCOMs.
- **Exemplary procurement and installation method:** Technical quality and standards are maintained through regular inspections of the installed PVs.

Good Practices (2)

- **Technological innovation:** 10KWp floating SPV set up at Dhanas lake



Good Practices (3)

- **Alignment with SDGs and NDCs**

Power Generation			
Solar PV power plants	NDC Target 3: Reduction in emission intensity of GDP	Use of clean energy	SDG 7.1 : Affordable, reliable & modern energy SDG 7.2: Renewable energy in energy mix
		Reduction in emissions	SDG 7.1 : Affordable, reliable & modern energy SDG 7.3: Energy efficiency
	NDC Target 4: Reduction in Non-fossil fuel installed capacity	Improved health due to decrease in emission and pollution levels	SDG 11.6: Reduce adverse per capita environmental impact of cities.

Success Factors

- **Increased ease of doing business:** Creation of online portal
- **Robust design based on detailed technical and cost analyses:** Actions put forth by Master Plan are based on an extensive scientific and case study analysis.
- **Identifiable co-benefits in the programme:** The programme's activities offer numerous identifiable co-benefits.
- **Long term vision with clearly defined goals:** The master plan sets clear targets for the city to meet in the short, medium and long term for all proposed measures.

Replicating this Practice

- **Deep assessment of needs:** The infrastructural, informational, financial needs must be assessed before suggesting interventions
- **Create dynamic and flexible frameworks:** that can evolve in line with the barriers or risks faced
- **Adopt a co-benefit approach**

Thank You

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Appendix

Efficient devices in villages (Cooking and lighting)	NDC Target 3: Reduction in emission intensity of GDP	Improved health due to reduction in Indoor air pollution	SDG 3.9: Reduce illnesses and deaths from hazardous chemicals and pollution
			SDG 11.6: Reduce adverse per capita environmental impact of cities.
		Reduction in Energy poverty	SDG 7.1: Affordable, reliable & modern energy

Chandigarh Solar City Master Plan

https://mnre.gov.in/file-manager/UserFiles/Master-Plan-Solar-City/Chandigarh_solar_city_master_plan.pdf