

भारत सरकार / Government of India  
परमाणु ऊर्जा विभाग / Department of Atomic Energy  
सचिवालय समन्वय अनुभाग / Secretariat Coordination Section

अणुशक्ति भवन / Anushakti Bhavan,  
छत्रपति शिवाजी महाराज मार्ग / C.S.M. Marg,  
मुंबई / Mumbai - 400 001  
इ-मेल / Email: [sectcord@dae.gov.in](mailto:sectcord@dae.gov.in)  
022-22862661

No.16/54/2021-SCS/E-File/15178

Dated:- 17-12-2021

**पृष्ठांकन / ENDORSEMENT**

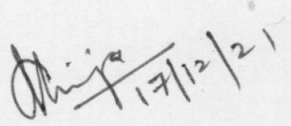
**विषय /:** India Cooling Action Plan (ICAP) – regarding.  
**Subject:**

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उपरोक्त विषय पर आवासन और शहरी कार्य मंत्रालय, नई दिल्ली से प्राप्त दिनांक 27/10/2021 के अर्ध- शासकीय पत्र संख्या K-14011/28/2021-AMRUT-IIA की एक प्रति सूचना एवं अनुपालन हेतु अग्रेषित है।

A copy of D.O. Letter No. K-14011/28/2021-AMRUT-IIA dated 27/10/2021 received from Ministry of Housing and Urban Affairs, New Delhi on the above-mentioned subject is forwarded for information and compliance.

**संलग्न / Encl.: 7 Pages.**

  
(मिनिजा रमेश / Minija Ramesh)  
अनुभाग अधिकारी (एस. सी. एस) / Section Officer (S.C.S)  
(022 – 22862661)

**पठवि के सभी संघटक इकाईयों/सार्वजनिक क्षेत्र के उपक्रमों/ सहायता प्राप्त संस्थानों के प्रशासनिक प्रधान।**  
**All Administrative Heads of Constituent Units/PSUs/Aided Institutions of DAE.**

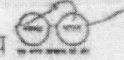
**प्रतिलिपि / Copy to:**

1. All Heads of Constituent Units/PSUs/Aided Institutions of DAE.
2. US(SSS), DAE: For further necessary action w.r.t DAE Sect
3. पठवि के सभी अधिकारी एवं अनुभाग / All Officers & Sections in DAE Secretariat.
4. सचिव, स्टाफ साइड, पठवि विभागीय परिषद् / Secretary, Staff Side, DAE Departmental Council.
5. E- फाइल संख्या / 16/54/2021-SCS/E-File. - For digital Filing
6. Guard File No. 160 / SCS -DAE: For filing

डी० थारा, आई.एस.  
संयुक्त सचिव  
D. Thara, I.A.S.  
Joint Secretary



भारत सरकार  
आवासन और शहरी कार्य मंत्रालय  
GOVERNMENT OF INDIA  
MINISTRY OF HOUSING AND URBAN AFFAIRS



D.O. No. K-14011/28/2021-AMRUT-IIA  
Dated: 27<sup>th</sup> October, 2021

Dear Sir/ Madam,

Ministry of Environment, Forest & Climate Change has released the **India Cooling Action Plan (ICAP)** in March, 2019 as a roadmap for sustainable cooling in India. The ICAP adopts a multi-stakeholder, multi-sectoral approach to **"synergize actions for addressing the cooling demand across all sectors"**. ICAP prioritizes energy efficient and climate-friendly cooling in appliances, buildings, cold chain, and transport sectors." Some of the **co-benefits identified by the ICAP** are as follows:

- Thermal comfort for all with specific focus on cooling in affordable housing projects.
- Sustainable cooling with low emissions from cooling.
- Augment domestic manufacturing of air conditioners and related cooling equipment.
- Robust R&D on alternative cooling technologies.

The copy of Indian Cooling Action Plan can be downloaded from following link:  
<http://ozonecell.nic.in/wp-content/uploads/2019/03/INDIA-COOLING-ACTION-PLAN-e-circulation-version080319.pdf>

2. The important recommendations pertaining to energy efficient buildings are:

- Enforcing efficient building envelope guidelines in construction of commercial and residential building.
- Wider adoption of Energy Conservation Building Code (ECBC) and Energy Conservation Building Code - Residential (ECBC - R) in various infrastructure schemes of Government.
- Awareness campaign to sensitize both the construction community and users regarding efficient buildings.
- Retrofitting and retro commissioning of existing buildings to reduce cooling requirement and energy consumption.

3. In this regard, details of some of the best practices in field of energy conservation and renewable energy sources are attached with this letter. Whereas rooftop solar panels may be used for meeting the energy demands of the buildings, other structures for solar panels such as solar trees can be used in parks or vacant land for energy generation and also for energy needs of various utilities such as Water Treatment Plants, pump houses, Sewerage Treatment Plants etc.

4. In view of the importance of the matter for energy conservation, I would request you to kindly instruct concerned officials to take special care for energy conservation features at planning stage for new buildings. I would also request you to kindly instruct the concerned to explore the possibility for retrofitting the existing buildings to reduce the cooling requirements and energy consumption. Efforts may be made to meet the energy demands of the utilities such as Water Treatment Plants, pump houses, Sewerage Treatment Plants etc through renewable energy sources.

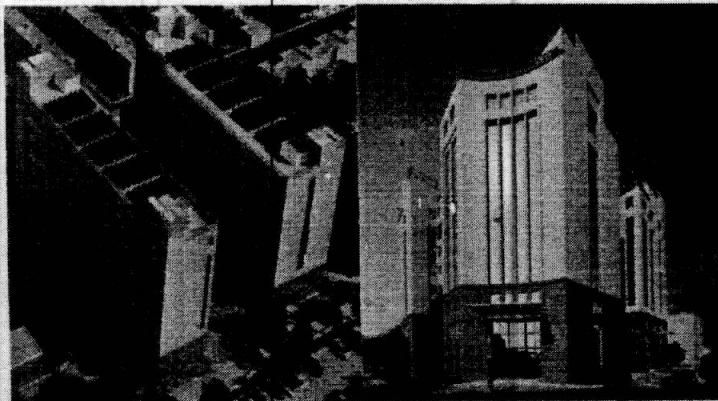
Warm regards,

(D. Thara)

Secretary, All Central Ministries and Departments (As per list attached)  
Principal Secretary/ Secretary (UD), All States/ UTs (As per list attached)

# Innovations in Energy Conservation

Energy efficient elements of office buildings  
for MoD at KG Marg & Africa Avenue, New Delhi



AFRICA AVENUE

KG MARG

## Features

- Grid connected solar power plant (320 KWp capacity)
- All lighting with LED
- Street lighting with solar power (minimum 10 percent of steel lighting)
- Occupancy sensors to control lighting in every cabins & Washrooms
- Cassette type indoor unit with occupancy sensor and temperature control in air conditioning system.
- Central control (BMS) for air conditioning system

## Savings resulting from solar energy

Building	KWp	Tentative MWh/Year	Saving in Electricity Cost in Rs. Lakh @ Rs. 8.5/Unit
<b>Africa Avenue</b>			
Block- A	95	148.8	12.6
Block-B	70	114.2	9.7
Block-C	45	73.4	6.2
Block-D	70	114.2	9.7
<b>Total</b>	<b>280</b>	<b>450.6</b>	<b>38.3</b>
<b>KG Marg</b>			
Block-A	140	237.5	20.2
Block-B	70	114.2	9.7
Block-C	30	48.9	4.2
<b>Total</b>	<b>240</b>	<b>400.7</b>	<b>34.1</b>
<b>Grand Total</b>	<b>520</b>	<b>851.3</b>	<b>72.4 Lakh</b>
Tentative Yearly Maintenance Cost			Rs. 2.4 Lakh
<b>Tentative Yearly Net Saving</b>			<b>Rs. 70 Lakh</b>

### **Energy savings through Terracotta Ventilated Facades**

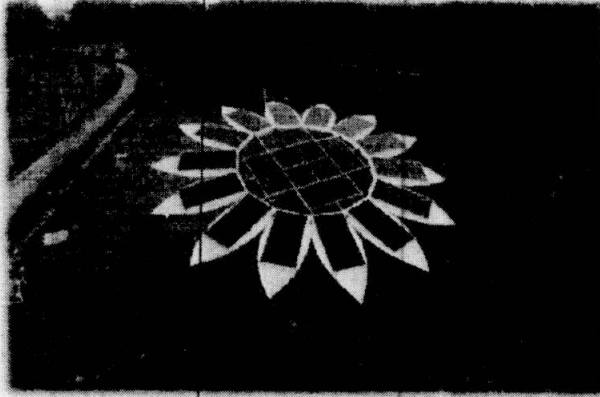
- Reduces solar heat gain of building from the face as a result of thermal insulation, reducing energy requirements for cooling.
- Energy consumption for air-conditioning & heating reduces by 30%.

## **Innovations in Renewable Energy**

### Solar tree

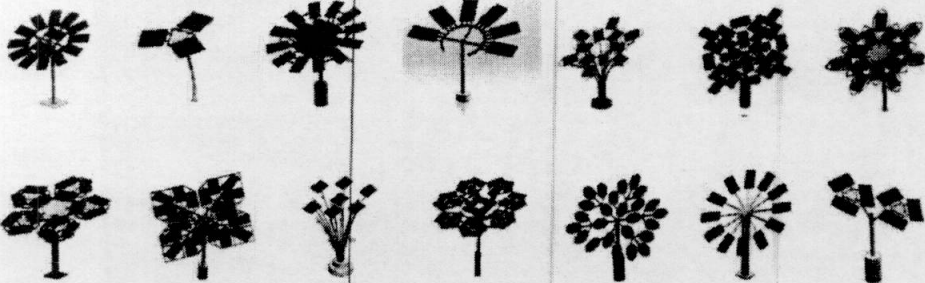


Solar Tracking  
(15% more generation)

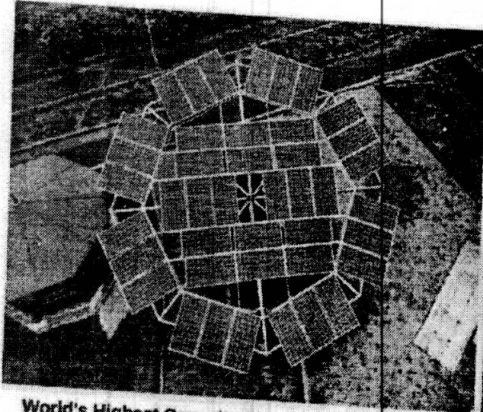


Direct Visibility to  
Solar Energy

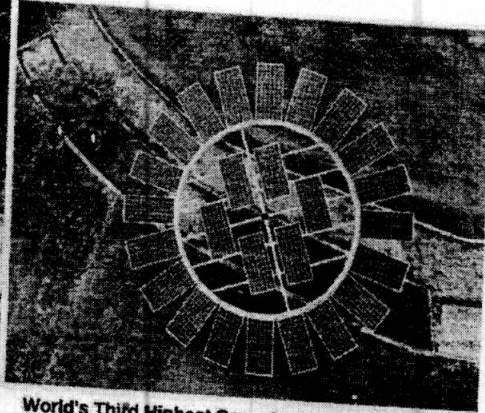
### DESIGNS



**Installations at Vapi Chala Lake, Vapi, Gujarat**

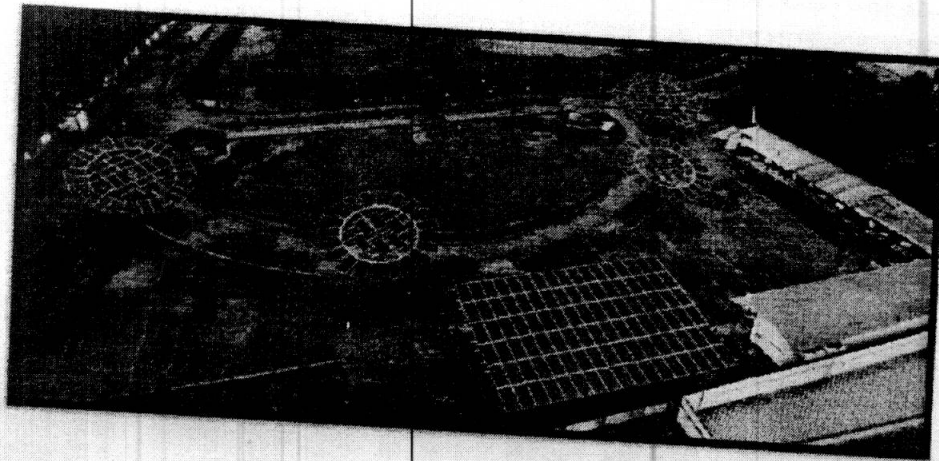


**World's Highest Capacity Solar Tree : 16 Kw**

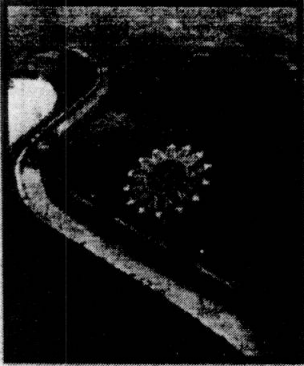


**World's Third Highest Capacity Solar Tree : 11 Kw**

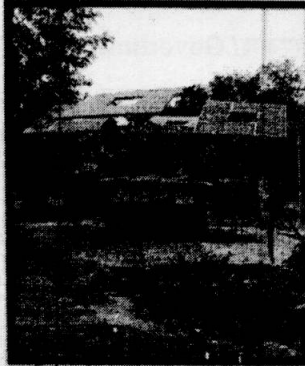
**Vapi Chala Lake, Vapi, Gujarat**



Solar Installation at Sector 1 Lake, Gandhinagar



Solar Installation at Shatrunda Village, Kheda for Safe Drinking Water



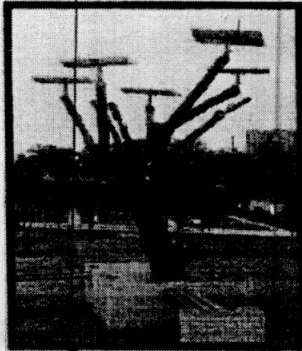
Solar Tree at Sector 8 Garden, Gandhinagar



Solar Tree Installed at Pandit Deendayal Petroleum University



Solar Installation at Ahmedabad Riverfront



Solar Tree Installation at Sarita Udhyan, Gandhinagar

