

TRAININGS IN NEW AND INNOVATIVE SOLAR APPLICATIONS (NISA)

Date: 16-17 April 2025, 09:00 AM - 06:30 PM (IST)

Venue: IUST, Awantipora, Kashmir.

Agenda

Background

The Government of India has set for itself an ambitious target of achieving carbon neutrality by the year 2070. As per estimates, India will need 1,689 GW of solar capacity by 2050 and 5,630 GW of solar capacity by 2070 to achieve this target. While traditional land-based solar photovoltaic (PV) plants have proven to be effective in generating electricity, there is a growing need to explore New and Innovative Solar Applications (NISA) that offer distinct advantages. In particular, the concept of land-neutral or dual-use applications has gained significant traction. This approach seeks to maximize the utilization of available land by integrating solar installations with existing infrastructure or employing non-traditional spaces. By tapping into these alternative applications, we can not only overcome the limitations of land availability but also address environmental concerns, reduce conflicts over land use, and enhance overall efficiency and sustainability in the solar energy sector.

In this context, the Government of Germany and the Government of India have signed a new project titled IN-Solar (Innovative -Solar), with an objective to promote land-neutral and dual use New & Innovative Solar Applications (NISA) across India. The NISA areas are Agrivoltaics (APV), Floating PV (FPV), Canal Top PV (CTPV), Rail/Road Integrated PV (RIPV) and Building/Urban Integrated PV (BIPV/UPV).

Assessment of potential NISA:

The potential of the abovementioned NISA across India has been assessed and an online atlas (Solar Technology Application Atlas of India - STAAI) has been developed by GIZ project team. STAAI is a GIS-based online portal that serves as a web-based knowledge portal and an online interactive calculator for various NISAs. STAAI with its user-friendly interface and navigation structure displays the technical potential in terms of feasible installation capacity and LCOE for independent NISAs on the map of India. STAAI also provides detailed information and results from the technical studies conducted for the seven selected NISAs for India.

Find the detailed reports on the NISA [here](#)

The objective of STAAI is to analyze the viability of different NISAs and plan for large-scale implementation, which will enable the wider adoption of innovative solar PV applications among different market segments.

It displays the technical potential in terms of feasible installation capacity and LCOE for independent NISAs or all NISAs on the GIS map of India.

To explore the STAAI tool: [\[Link\]](#)

S.No	NISA Technology	Potential (in MW)
1	Agri Photovoltaics (APV)	21479.37 (Min) - 25892.01 (Max)
2	Canal top Photovoltaics (CTPV)	646
3	Floating Photovoltaics (FPV)	1,452
4	Rail PV	396
5	Road PV	257
6.	Building Integrated Photovoltaics (BIPV)	2,506
7.	Urban Photovoltaics (UPV)	2,975
8.	Rooftop Photovoltaics (RTPV)	10,375

Aim of Workshop

The NISA technologies being the emerging and promising technologies for the future, there is a need for capacity building of various stakeholders including ministries, DISCOMs, nodal agencies, research institutes, govt. departments etc., and the solar sector for accelerated adoption of NISA. In this regard, GIZ aims to support the adoption by conducting capacity building workshops for all the relevant stakeholders involved in the NISA technology. This workshop will focus on Agri Photovoltaics.

Key Points on Building Integrated Photovoltaics (BIPV):

- **Definition:** Integrates PV functionality into building elements, replacing conventional materials.
- **Capacity:** Typically, **1 kWp to 1 MWp**, ideal for small to medium-scale use.
- **Advantages:** No extra land use, close to demand centers, supports high-rise buildings.
- **Applications:** Façades, balustrades, shading devices.
- **Indian Context:** Aligns with **BIS norms** and government schemes like **Pradhan Mantri Awas Yojana (Urban)**.

This comprehensive training on Building Integrated Photovoltaics (BIPV) equips participants with essential knowledge for successful BIPV deployment. The program begins with registration, networking, and an introduction to BIPV, followed by detailed sessions covering BIPV fundamentals, system classification, and technical specifications. Key technical aspects such as thermal effects, system design, and safety are also addressed. The second day explores policy frameworks, business models, and maintenance practices, along with insights on grid connectivity and future innovations. The training concludes with a site visit or case studies for practical exposure, followed by closing remarks to summarize key learnings.

New and Innovative Solar Applications (NISA) under the Training in New and Innovative Solar Applications (TISA) Project

Date: 16th -17th April 2025

Venue: IUST Awantipora, Kashmir

Time: 09:00 AM – 05:00 PM

Timing	Topic	Speaker
Day 1: 16.04.2025		
09:00 AM - 09:30 AM	Registration and Networking	
09:30 AM - 09:45 AM	Welcome Address	GIZ/EY/SCGJ/IUST officials
09:45 AM - 10:00 AM	Introduction to Training on BIPV	Subhan Khan VP, EY, India
10:00 AM - 10:15 AM	Coffee Break	
10:15 AM - 11:15 AM	Session 1 Introduction to Building Integrated Photovoltaics (BIPV)	Subhan Khan VP, EY, India
11:15 AM - 12:15 PM	Session 2 Classification of BIPV Systems	Subhan Khan VP, EY, India
12:15 PM - 01:15 PM	Lunch	
01:15 PM - 02:15 PM	Session 3 Components and Technical Specifications of BIPV System	Dr. Faroze Ahmad
02:15 PM - 03:15 PM	Session 4 Business Models and Unit Economics for BIPV Projects	GIZ/SCGJ official
03:15 PM - 03:30 PM	Coffee Break	
03:30 PM - 05:00 PM	Session 5 Case Studies & Best Practices in BIPV Implementation	Subhan Khan VP, EY, India
Day 2: 17.04.2025		
09:30 AM - 10:30 AM	Session 6 Policy and Regulatory Assessment for BIPV	Mr. Japen Gor
10:30 AM – 10:45 AM	Coffee Break	
10:45 AM - 11:45 PM	Session 7 Thermal Effects in BIPV	Mr. Japen Gor
11:45 PM - 12:45 PM	Session 8 BIPV System Design & Safety Overview	Mr. Japen Gor
12:45 PM - 01:30 PM	Lunch	
01:30 PM - 02:30 PM	Session 9 Operations and Maintenance of BIPV Systems	Dr. Ahmed Sharique Anees
02:30 PM - 03:30 PM	Session 10 Grid Connectivity and Inspection Procedure	Dr. Rayes Ahmad Lone
03:30 PM - 03:45 PM	Coffee Break	
03:45 PM - 04:45 PM	Session 11 Future Trends & Innovations in BIPV	Dr. Liyaqat Nazir
04:45 PM - 05:00 PM	Certificate distribution, group photo and closing Remarks	GIZ/EY/SCGJ/IUST officials