

Integrated Photovoltaic Solutions

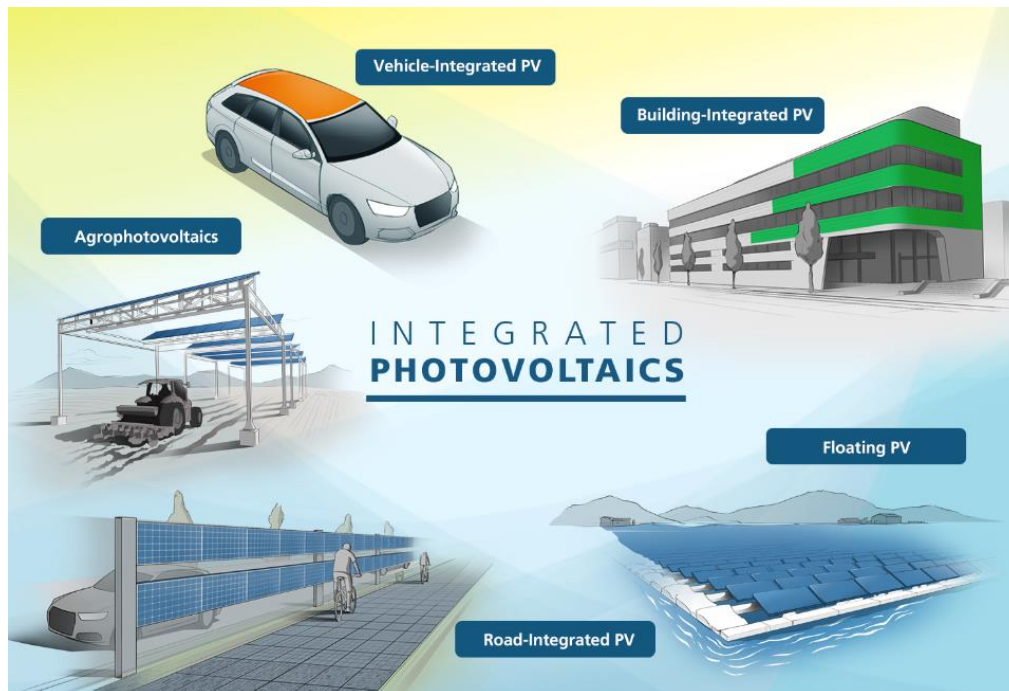


Image: Integrated PV utilizes surface areas to exploit new potential for power generation

Integrated photovoltaics blends into the outer surface of buildings, roadways, railways and vehicles, such that the solar cells are often no longer visible from outside. Integrated photovoltaics uses land areas jointly with agriculture or floats on the surface of pit lakes created by flooding former open-cut mines. New types of technology and design options allow free choice of formats and colors for integrated modules, such that their connection circuits and cell architecture can be completely covered if necessary. Specific requirements arising from the application, for example minimized weight per area or extremely high mechanical resistance, can be met by the choice of suitable materials. The integration of PV opens up huge potentials. Instead of conflicts of use, synergies occur, such as longer ranges for electric vehicles, local power supply for buildings or noise protection on roads and railways.

Fraunhofer ISE has developed technologies for integrating PV modules which make it possible to freely select module formats and colors while also fulfilling special requirements such as a lighter weight, improved aesthetics or extreme mechanical resilience. Fraunhofer ISE's solutions cover a range of application areas - Building Integrated PV (BIPV), Agro-photovoltaics (APV), Vehicle Integrated PV (VIPV), Road Integrated PV (RIPV), Floating PV (FPV).

Our R&D Services:

- PV Technology Consulting, Cost analysis - highly efficient PV technologies
- Development of assembly and connection technology for integrated photovoltaics
- Production of Module prototypes for integration - application-optimized cell and module designs
- Analysis of the solar yield potential for different profiles, regions or routes
- Module characterization and testing and service life analysis
- Sampling in full format on industrial equipment
- Yield simulation and monitoring
- Development of energy and load management as well as power electronics and battery systems
- Coordination and Management of R&D projects with industrial partners

Fraunhofer is one of the world's largest applied R&D organizations, with nearly 80 research units in all sectors of industry, 30000 employees and an annual outlay of Euros 2.9 billion. Of this sum, 2.4 billion euros is generated through contract research. Our global footprint is very strong, with offices and research centers in the Europe, USA and Asia. Some of our renowned innovations are the MP3 format, the white LED, the smallest of cameras. Fraunhofer covers the entire spectrum of energy (Renewables, Storage, E-Mobility, Grid, Hydrogen...) across the value chain from materials to testing and certification. Fraunhofer has been active in India since the past several years, bringing innovative technologies and research competence to India. Fraunhofer in India is the chosen R&D and innovation technology partner of some of the major players in the field of Energy, Environment, Automotive, Electro-mobility, Materials, Production Technology and Smart Cities working with Industry, Government and Public Sector.

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Kindly get in touch with us if you are interested in this technology or require further information.
Thanks and Regards,

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