Trends in Photovoltaic Applications 2025
《2025 光伏应用趋势报告》

IEA PVPS has released its latest Trends in Photovoltaic Applications 2025 report, revealing that the world’ s cumulative installed PV capacity surpassed 2 260 GW by the end of 2024, marking a 36% year-on-year increase.
国际能源署 IEA PVPS Tsak 1 发布了最新《2025 光伏应用趋势报告》，报告显示，截至 2024 年底，全球光伏累计装机容量已超过 2260GW_{DC}，同比增长 36%。

According to the report, 2024 was another record year for solar PV, with between 553 GW and 601 GW newly installed worldwide. This volume is a 32% increase compared to 2023, which was almost double that of 2022, itself well above 2021 volumes – resulting from a combination of increased action on climate imperatives, plummeting module costs and actions in China to absorb manufacturing capacity.
报告指出，2024 年全球新增光伏装机量达 553-601GW_{DC}，再创历史新高。这一规模较 2023 年增长 32%，几乎是 2022 年装机量的两倍，更远超 2021 年水平——这主要得益于气候行动强化、组件成本骤降以及中国消纳制造产能的多重推动。

China remained the dominant market, installing between 309 GW and 357 GW and accounting for nearly 60% of all new installations. The European Union followed with 66 GW, led by Germany (17.2 GW), Spain (8.7 GW), Italy (6.7 GW), France (6 GW), and Poland (4.2 GW). The United States installed 47 GW, a 40% increase compared to 2023, while India added 32 GW. In total, more than 35 countries now operate GW-scale annual markets, and over 40 countries have surpassed 1 kW of PV capacity per inhabitant.
中国持续主导全球市场，新增装机 309-357GW_{DC}，占比接近全球总量的 60%。欧盟以 66GW 新增装机位居第二，其中德国（17.2GW）、西班牙（8.7GW）、意大利（6.7GW）、法国（6GW）和波兰（4.2GW）领跑。美国新增 47GW，同比激增 40%；印度新增 32GW。目前全球已有超过 35 个国家形成“GW 级”年度市场，40 余国家实现人均光伏装机超 1kW。

Key Highlights

1、**Module efficiencies** continue to improve, with n-type technologies now representing 70% of global production.

组件效率持续提升，n 型技术占据当前全球产量的 70%。

2、**Bifacial modules** dominate the market, making up over 75% of production.
双面组件主导市场，生产占比超过 75%。

3、**Utility-scale systems** accounted for about 62% of new installations, while distributed and prosumer markets continue to expand, driven by self-consumption and new business models.
集中式电站约占新增装机量的 62%，而分布式与产消者市场在自发自用和新商业模式驱动下持续扩张。

4、**Dual-use applications** such as agrivoltaics, floating PV, and infrastructure-integrated PV are becoming increasingly relevant, helping balance land use, food production, and renewable energy generation.
农业光伏、漂浮式光伏及基础设施一体化光伏等复合应用日益重要，有效协调土地利用、粮食生产和可再生能源发电。

The IEA PVPS Trends in Photovoltaic Applications 2025 report provides comprehensive data and analysis on global PV deployment, technology, and market evolution from 1992 to 2024. It supports policymakers, utilities, and industry stakeholders in understanding key market drivers and future developments.
《2025 光伏应用趋势报告》提供了 1992 至 2024 年间全球光伏部署、技术与市场发展的全面数据与分析，为政策制定者、电力公司及行业参与者理解关键市场驱动力与未来趋势提供支持。