

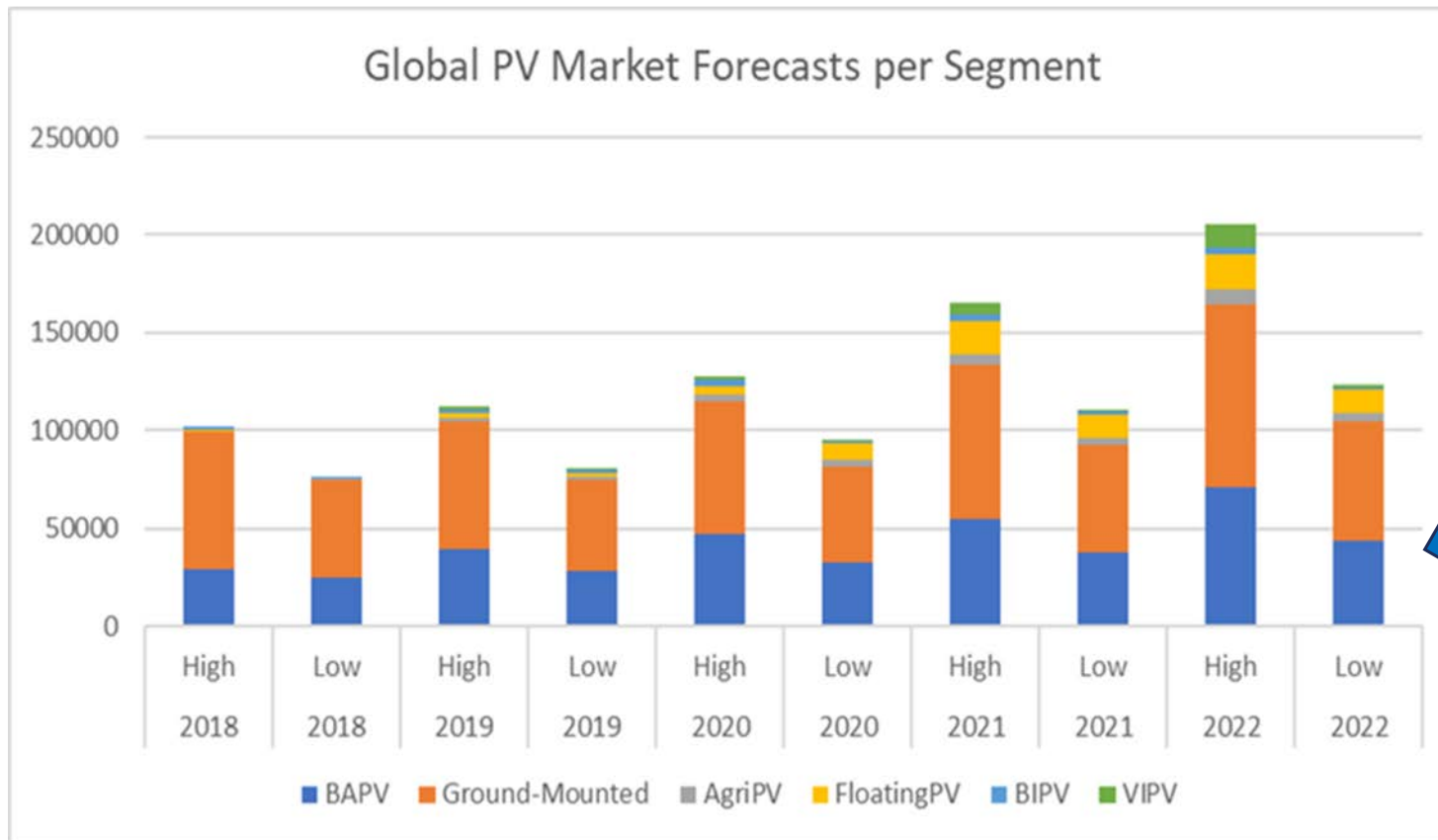
Building integrated photovoltaics

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**ADVANCED POWER ELECTRONICS IN THE BALTIC SEA REGION
CONFERENCE**

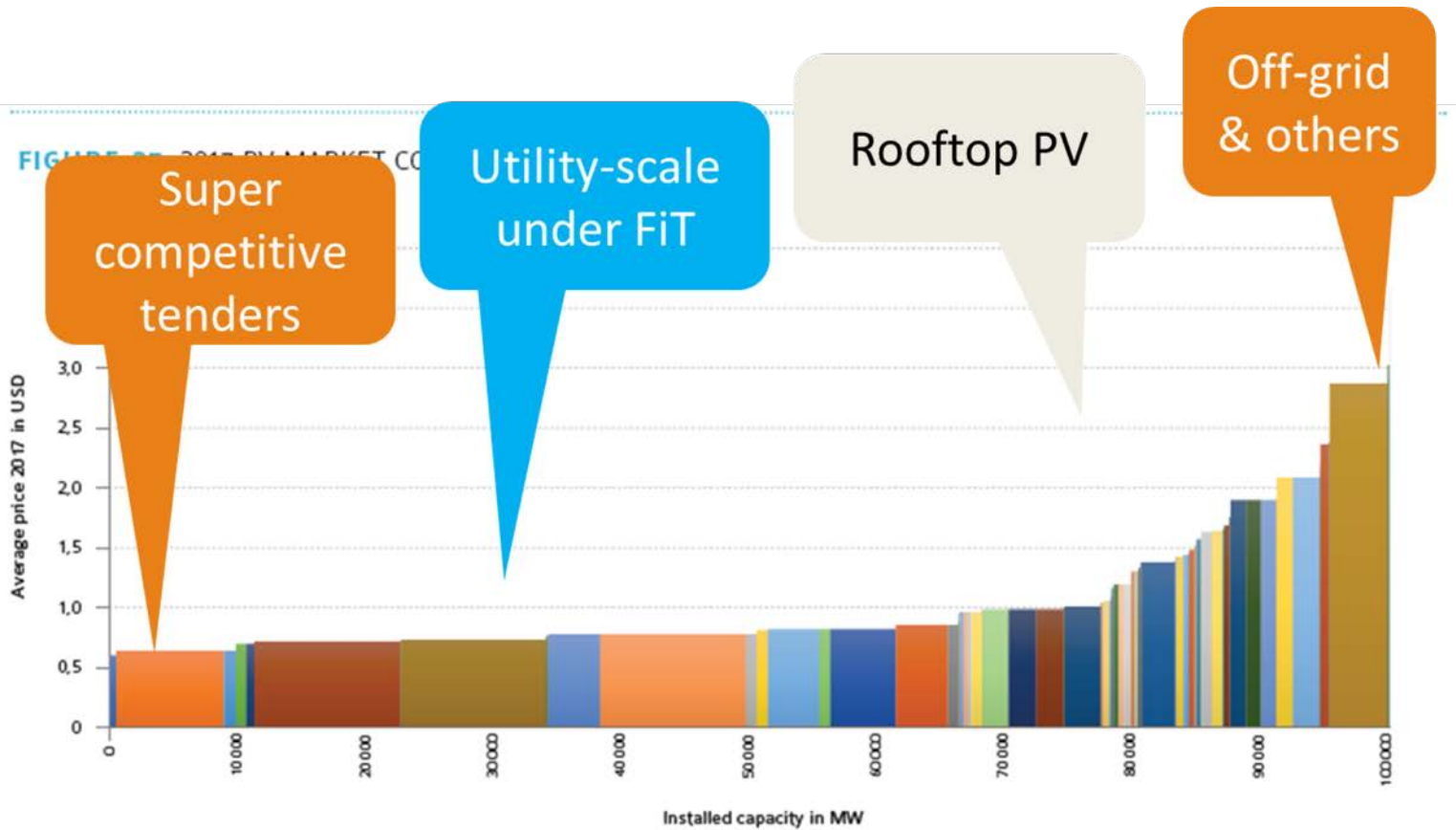
2019 Jan 25

Prospects for BIPV market



Source: The PV Market Alliance

Prospects for BIPV market



SOURCE IEA PVPS & OTHERS.

Issues

- Typical PV installation (left) - Building Applied PV (BAPV)
 - Architectural disaster
- Future (near?): Building integrated PV (right) – part of the building envelope (roof, façade, windows).

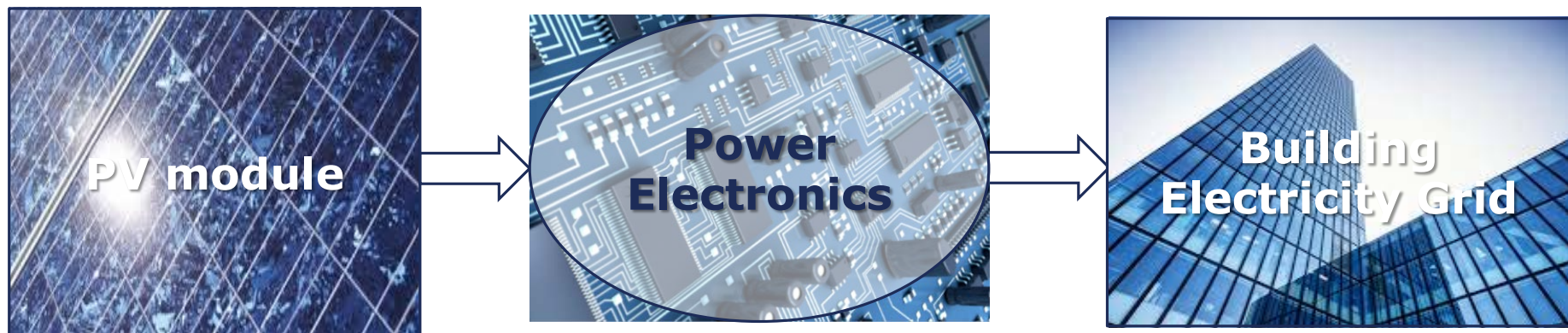


Main requirements for BIPV

- **Energy generation for the needs of the building**
 - Effective – contributing significantly to building energy balance
 - Compatible with grid regulations
- **Construction material/element**
 - Compatible with construction process
 - Compatible with construction standards
- **Costs**
 - Comparable with construction elements costs

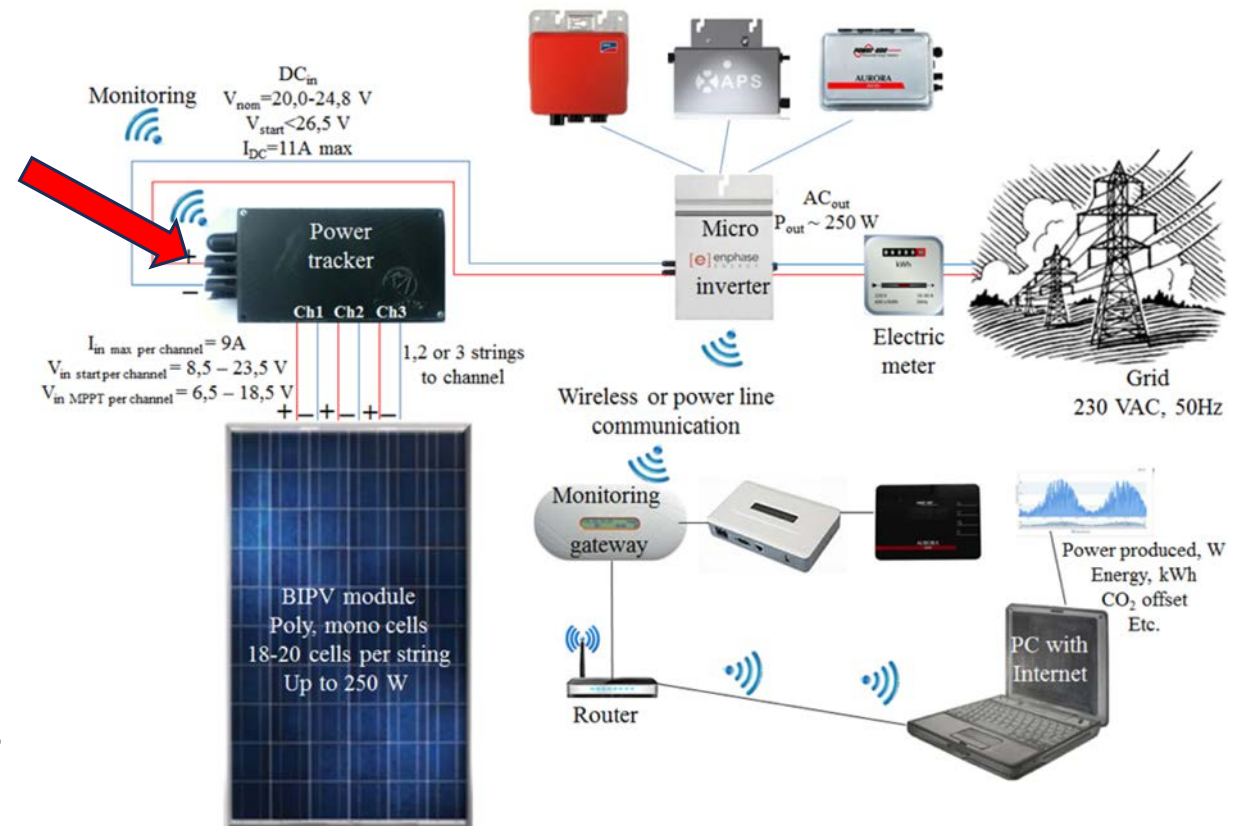
Functions of Power Electronics in BIPV

- PV generator's compatibility with building energy system
- Requirements for energy generator integrated into the building
 - *A must:* grid compatibility
 - *Extra features:* safety, performance control, monitoring etc.)
- Possibility to solve many issues by smart PE



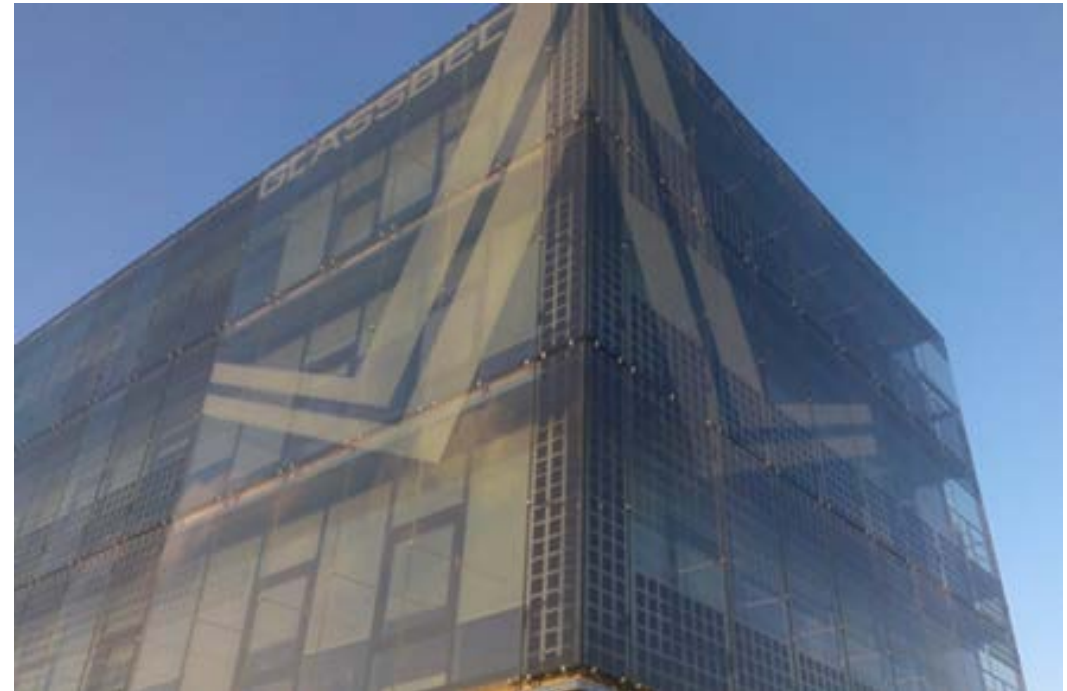
Real life case: Smart PE for BIPV in SMARTFLEX (FP7) project

- In addition to main PE function SMARTFLEX targeted following cost categories and functions:
- *Construction* process simplification
- Module level *power optimization/monitoring*
- Meeting *safety* standards



SMARTFLEX solution for BIPV cost reduction

- Plug&play solution for construction process simplification
- Increased power by PV power plant output optimization on module level
- Fire and maintenance safety through remote shutdown on module level



Thank you.

Time for questions.