

# Technology and Innovation in the Solar PV sector: its role for the Green Recovery

Webinar “Opportunities and challenges for utility-  
scale photovoltaics

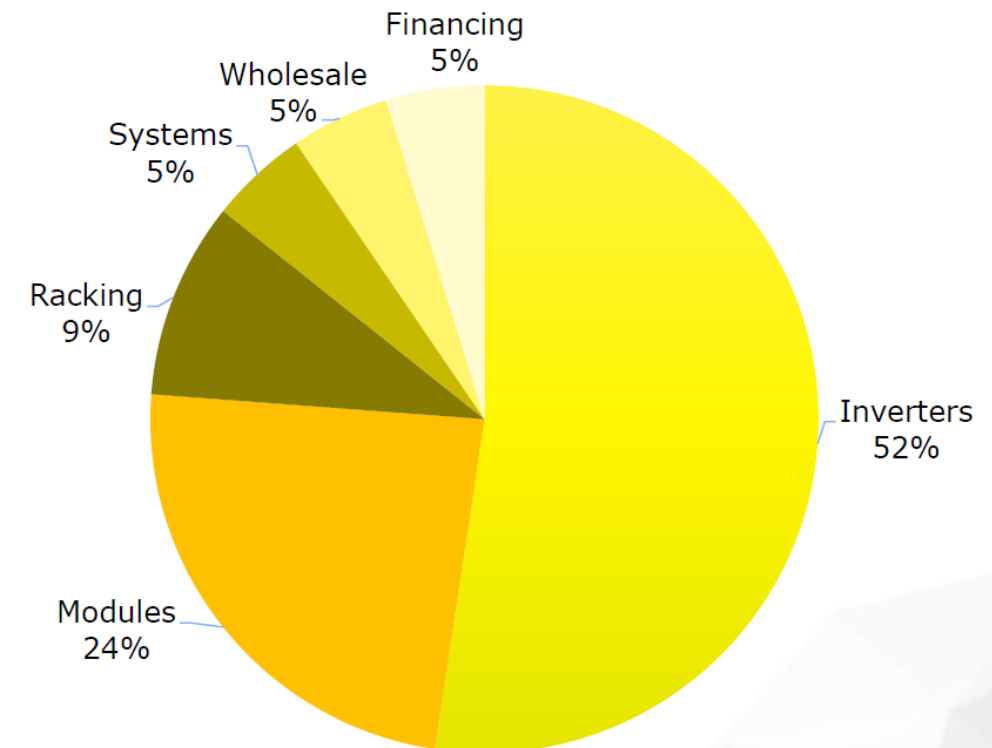
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# Where is the innovation in the solar industry?

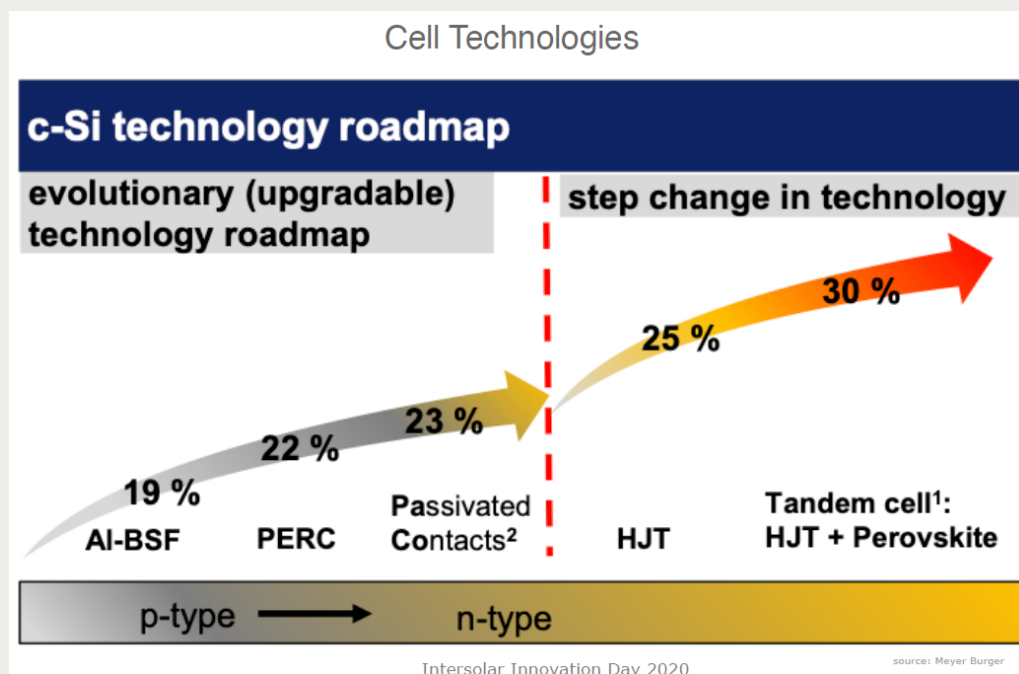
Advanced inverters provide advanced **O&M** capabilities: system monitoring, shade management, fault detection..., **sector coupling** capabilities (electric mobility), integration with **storage systems**, advanced **cybersecurity** functionalities, new “**grid forming**” services, etc.



Intersolar Innovation Day 2020

# Innovative wafers and cells in Europe

The solar industry will transition to **new, more efficient cell technologies.**



SolarPower Europe has launched in May 2020 the **Solar Manufacturing Accelerator<sup>EU</sup>**

<b>Hyperpure polysilicon</b> 	<b>Wafer</b>  
<b>Heterojunction cells</b>  	<b>Perovskite</b> 
 	<b>Organic PV</b> 
<b>IBC cells</b>	

Europe is still **an industrial leader** in solar PV technologies.

# Building- and Vehicle-integrated PV



## Building-integrated PV



In September 2020, Akuo energy opened its solar tiles factory in Chatellerault, France.



ARMOR Group is developing film solutions for buildings

## Vehicle-integrated PV

Sono Motors



Lightyear one



TRAILAR / DHL



# Agri-PV and floating PV

## Agri-PV



Dynamic shades Agri-PV system, viticulture.

© SLMR NELLE



Agri-PV greenhouse.

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## Floating solar

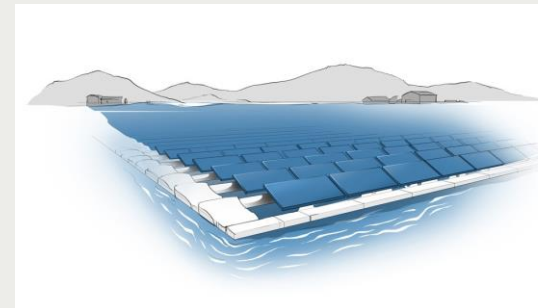
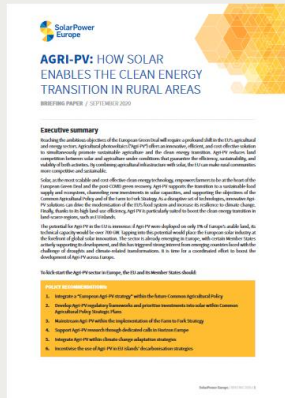


Illustration of a floating solar PV system (Fraunhofer ISE)

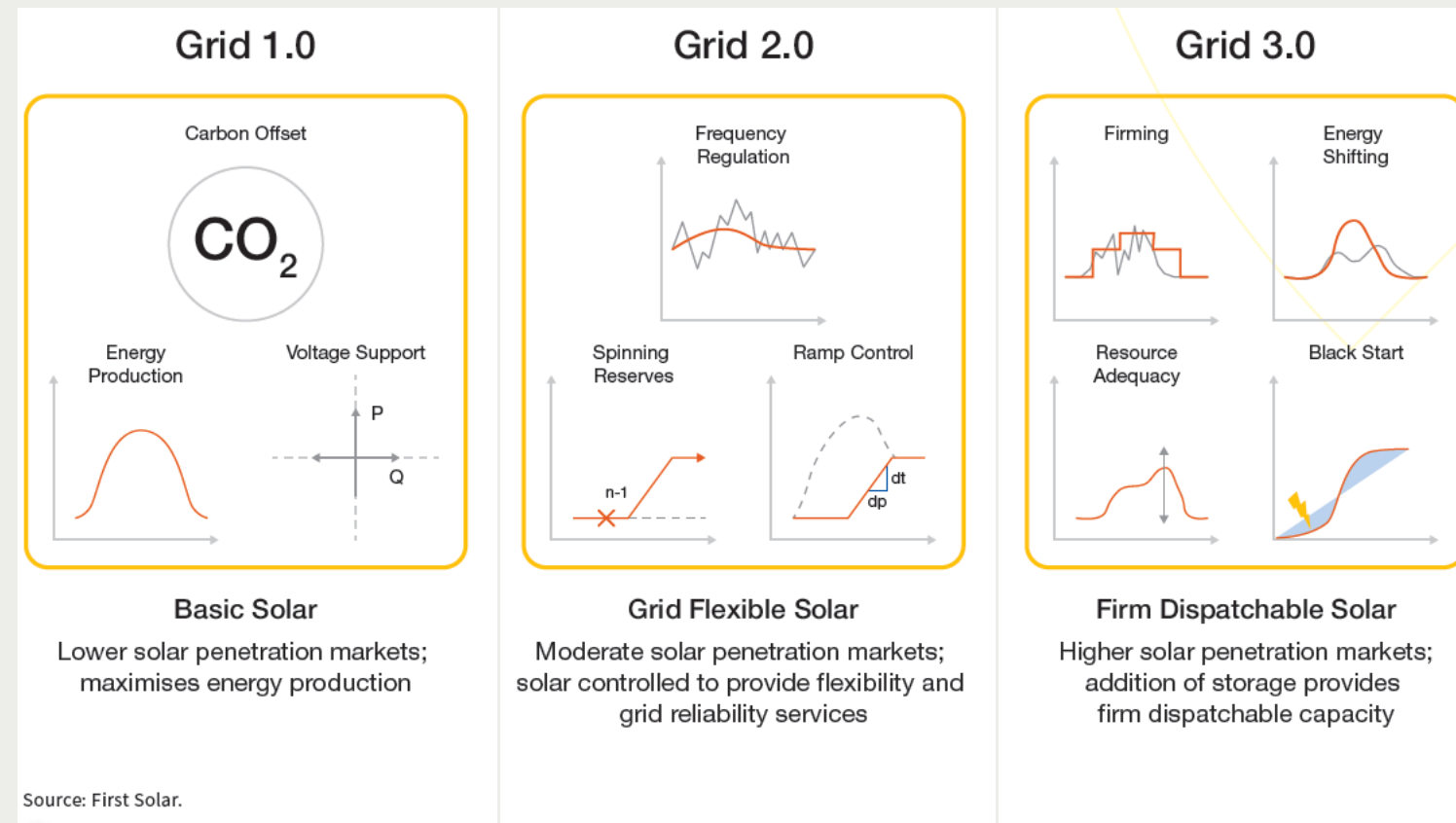


The largest floating PV plant in Europe (O'MEGA 1 project, Akuo Energy)

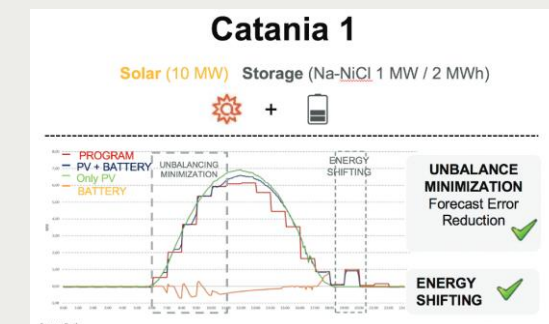


# Grid intelligent solar

## Three grid phases of power plant evolutions



First Solar provided frequency regulation with ~27% more accurate than best conventional generation



Catania solar & storage plant (Enel)

# Digitalisation and innovation O&M practices



Smart PV power plant monitoring and data-driven O&M:

- Advanced aerial thermography
- Automated plant performance diagnosis
- Predictive maintenance for optimised hardware replacement
- PV plant yield forecasting
- Internet of Things and auto configuration

→ SolarPower Europe is part of the **TRUST-PV project**.



# How can solar frameworks encourage innovation in our industry?

- Strong **research and innovation budgets** and programmes in the next generation of solar technologies
- A robust framework to bring solar technologies innovations **from labs to markets**
- An **industrial policy** to accompany European innovative companies
- Tendering schemes that **value innovations**
- Regulatory frameworks and markets that **value flexibility**



# Thank you for your attention.

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