

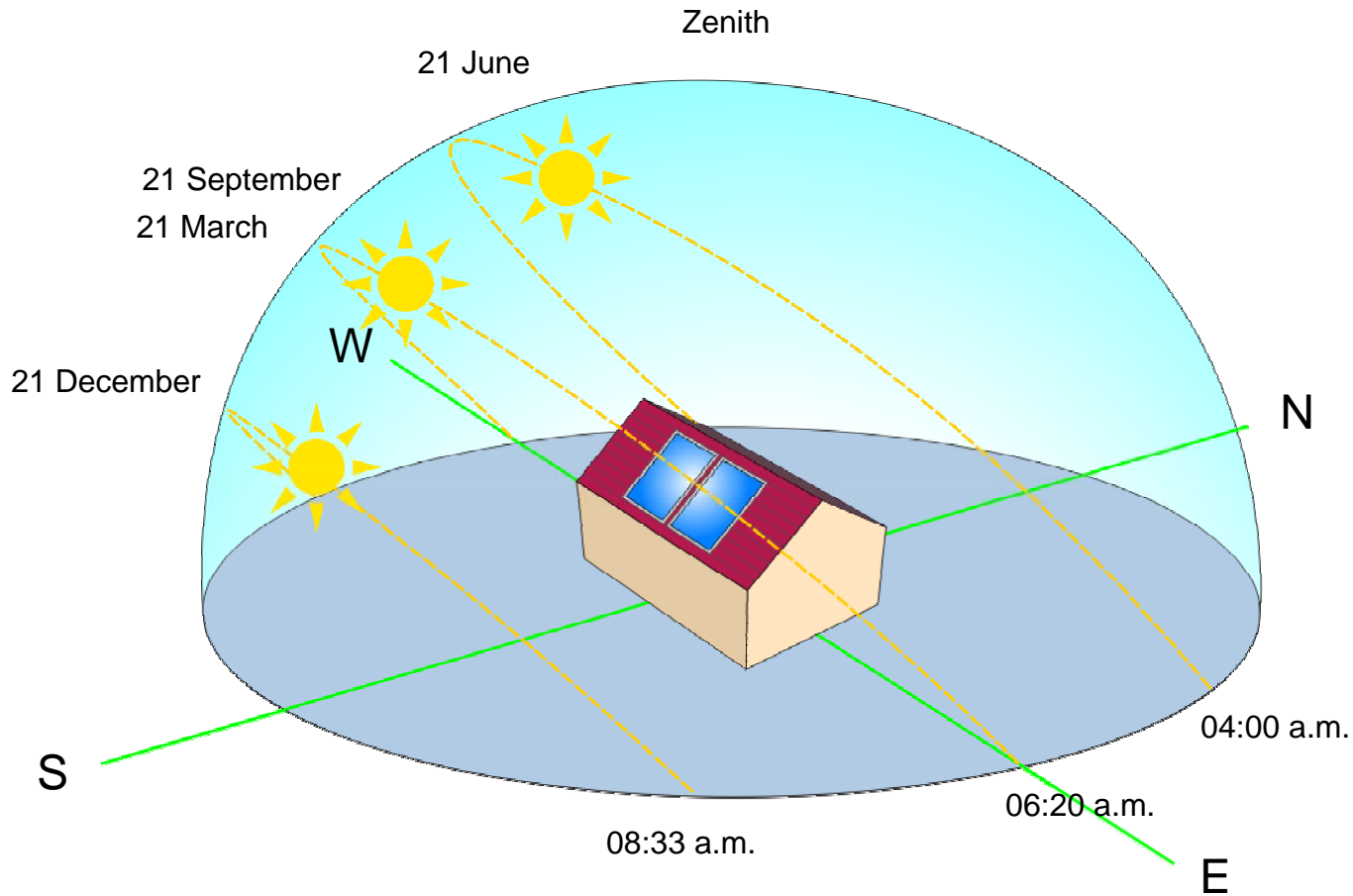


# Residential and industrial Photovoltaic On- Grid applications, Technology and Projects

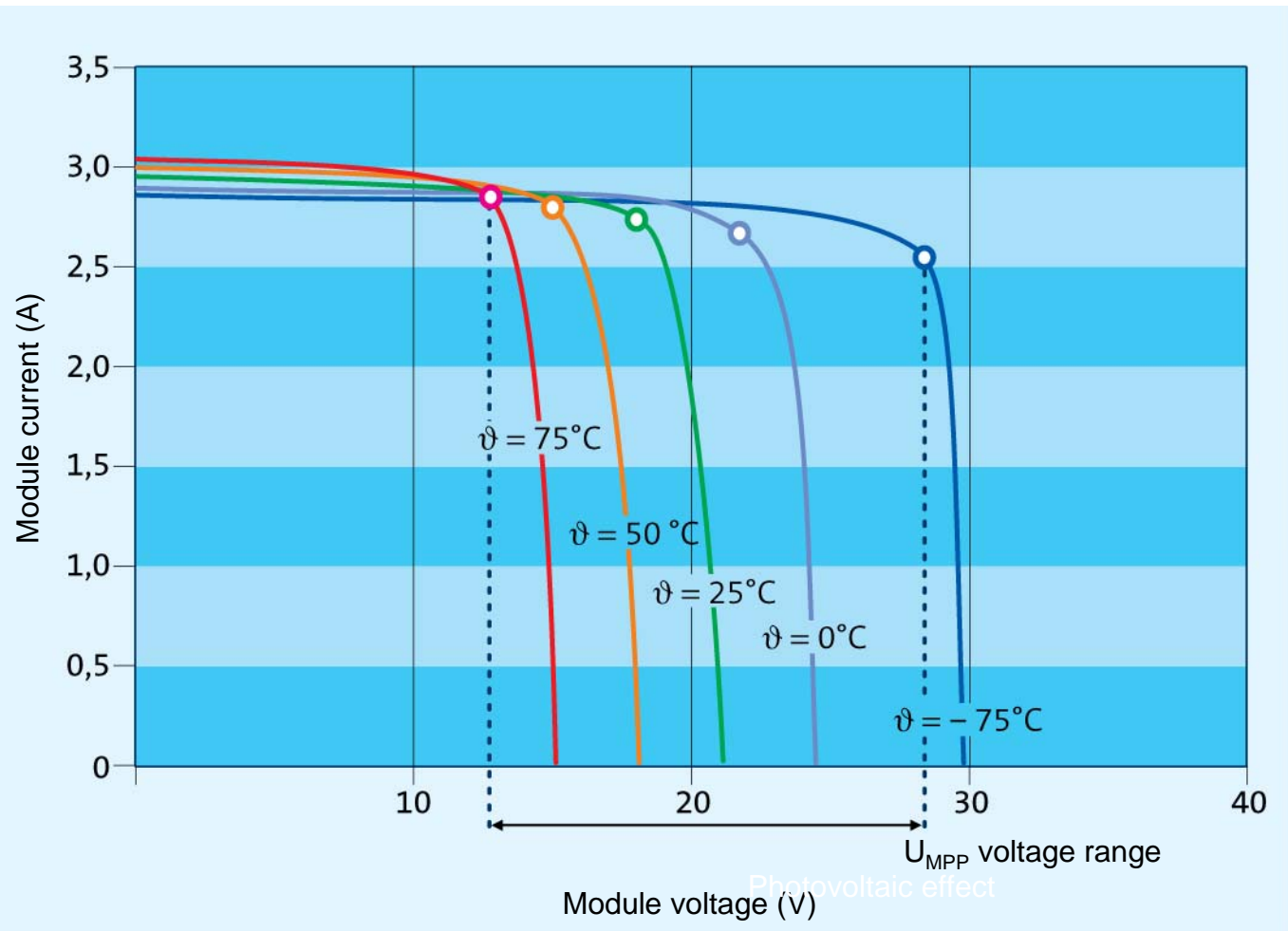


Dipl.-Phys. Oussama Chehab  
Sales Director New Markets, SMA Technologie AG, Germany

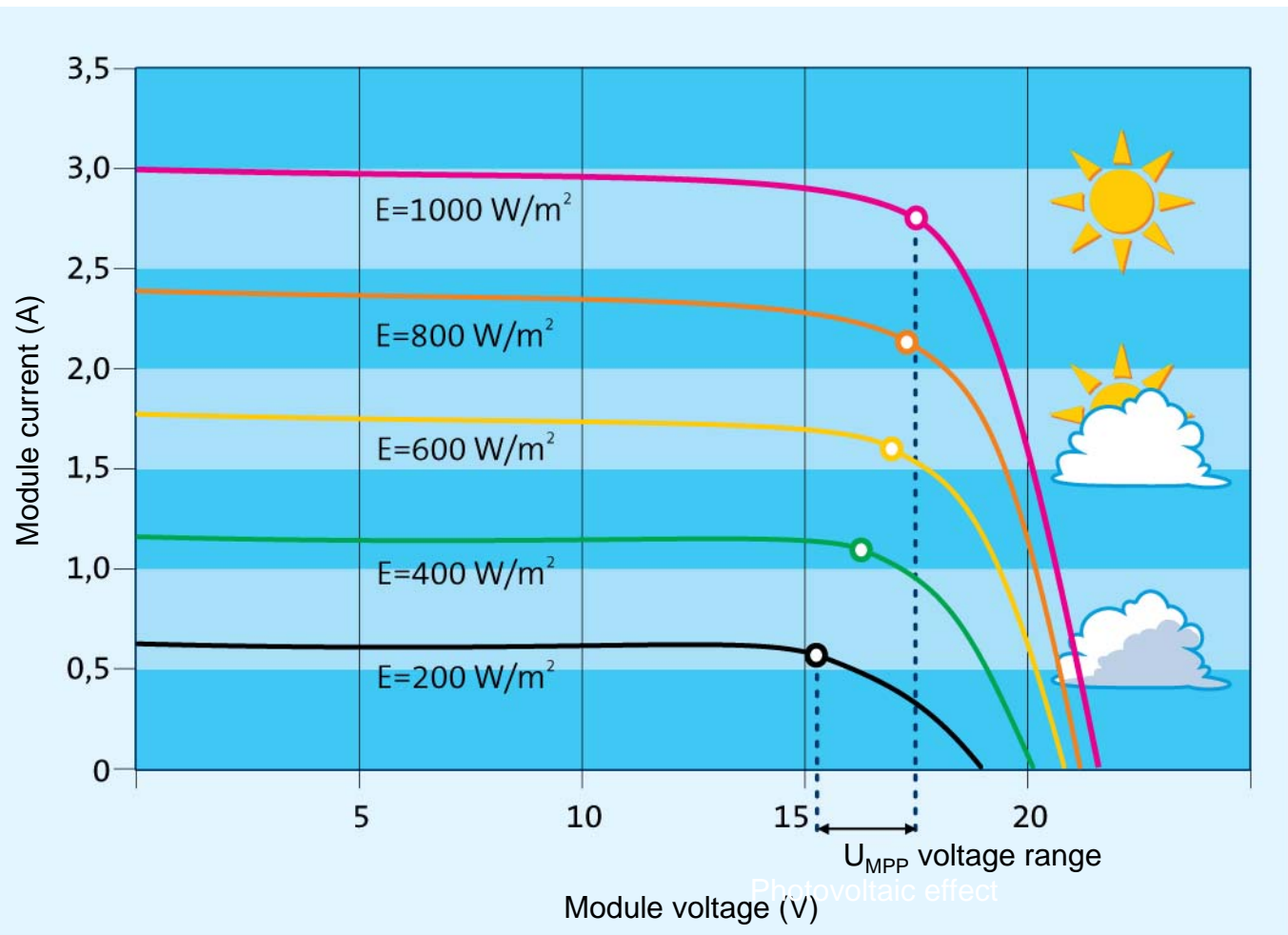
# Annual and daily path of the sun (Northern hemisphere)



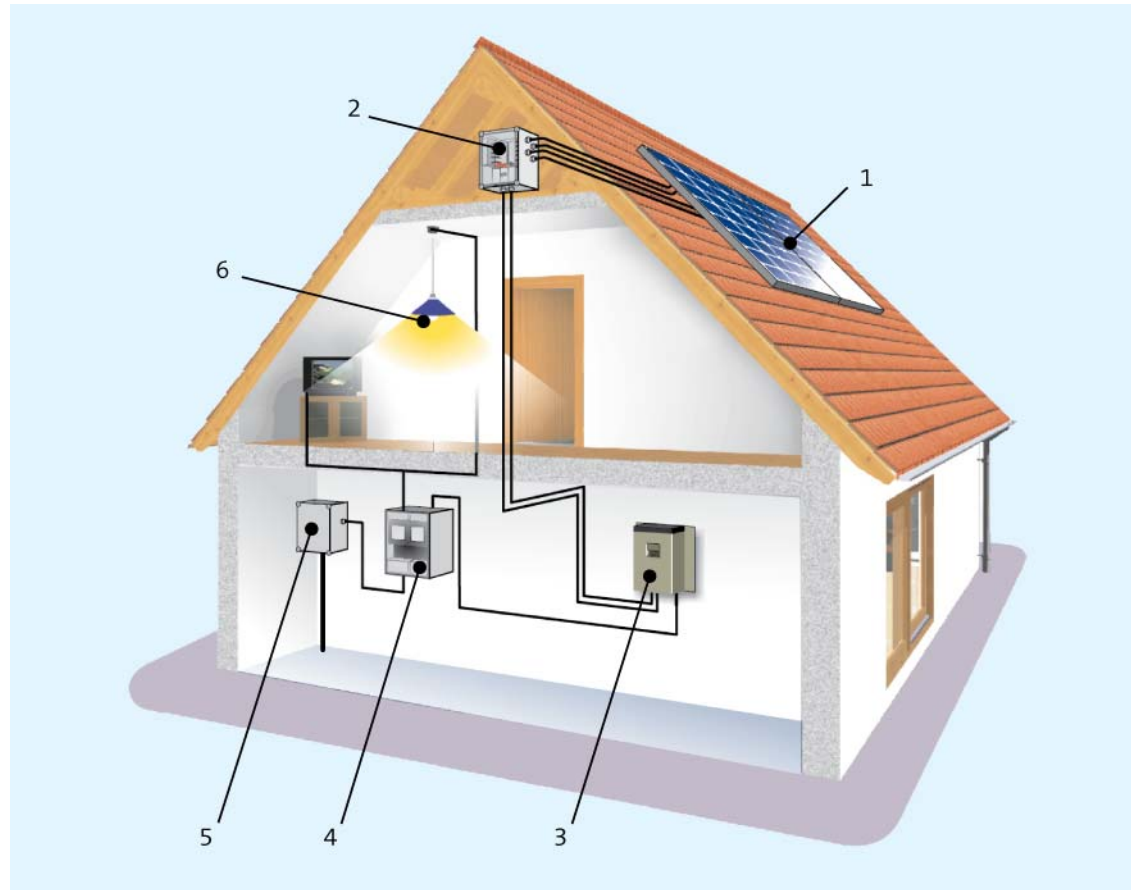
# Effect of temperature on the operation of crystalline solar modules



# Effect of irradiation on the operation of crystalline solar modules



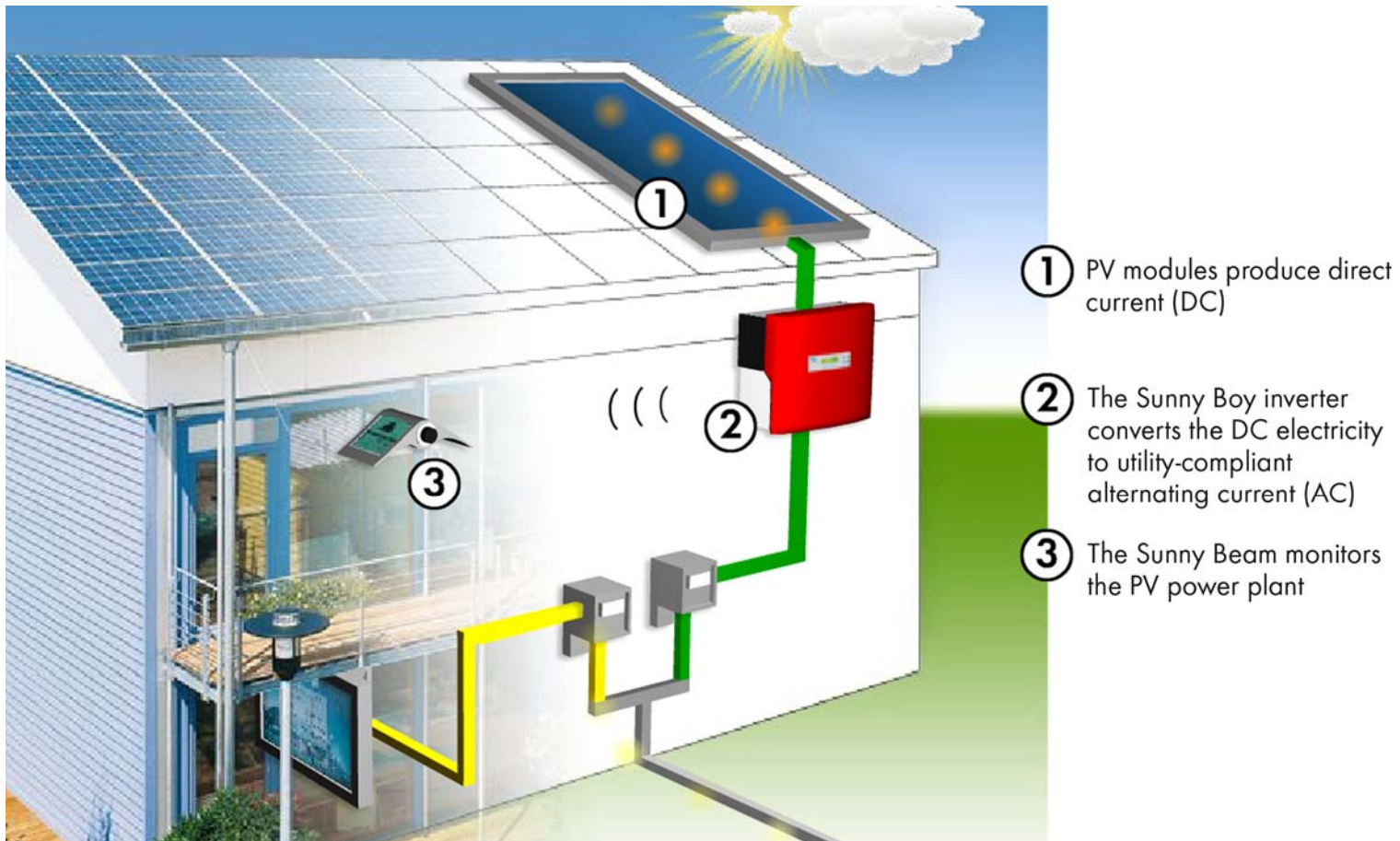
# Principles of a grid-tied PV



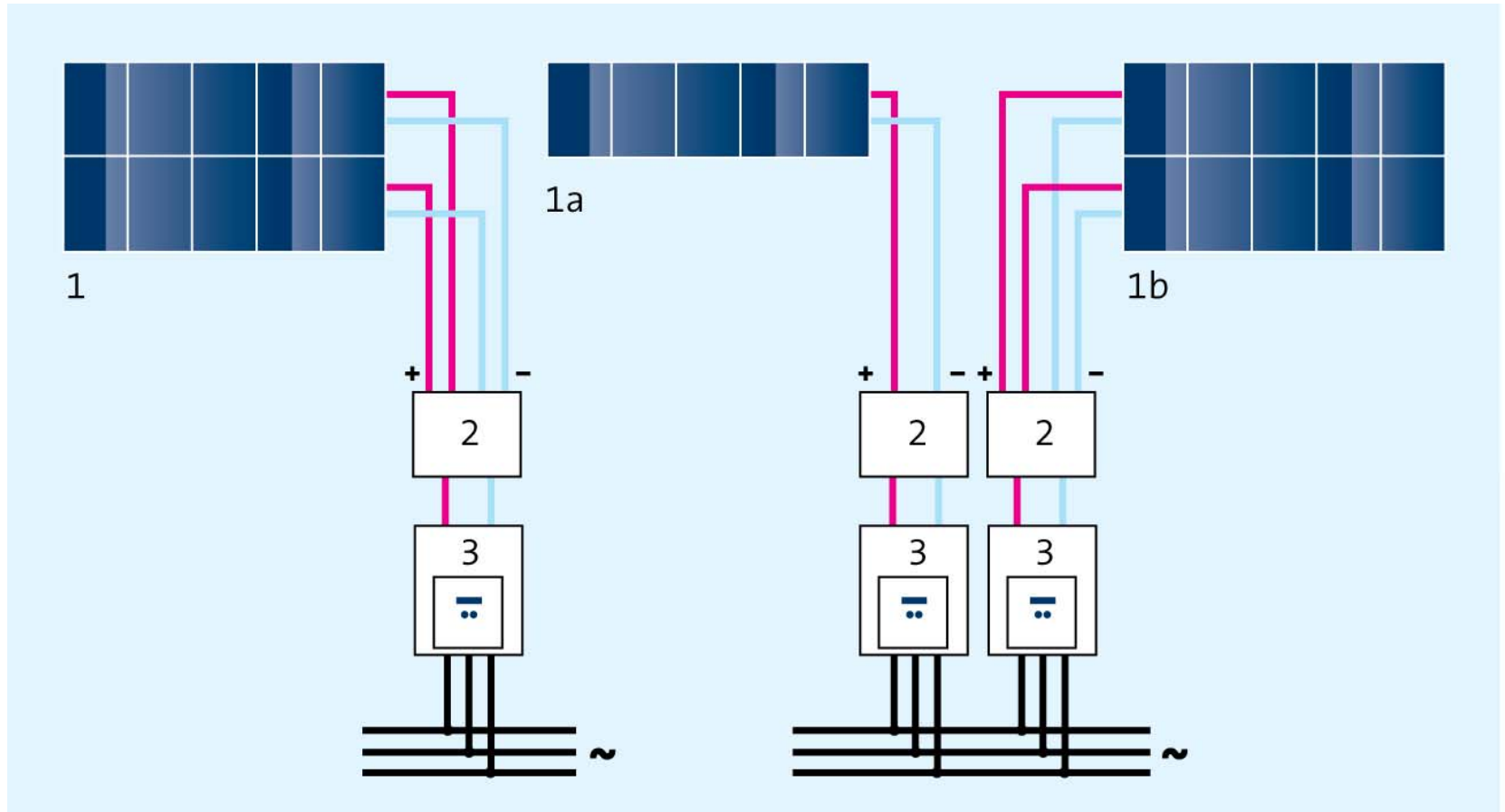
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1 PV array, 2 PV array combiner/junction box, 3 Grid-tied inverter,  
4 Import/export meter, 5 Connection to grid, 6 Loads.  
Other configurations are possible

# The solar inverter – The heart of any solar power system

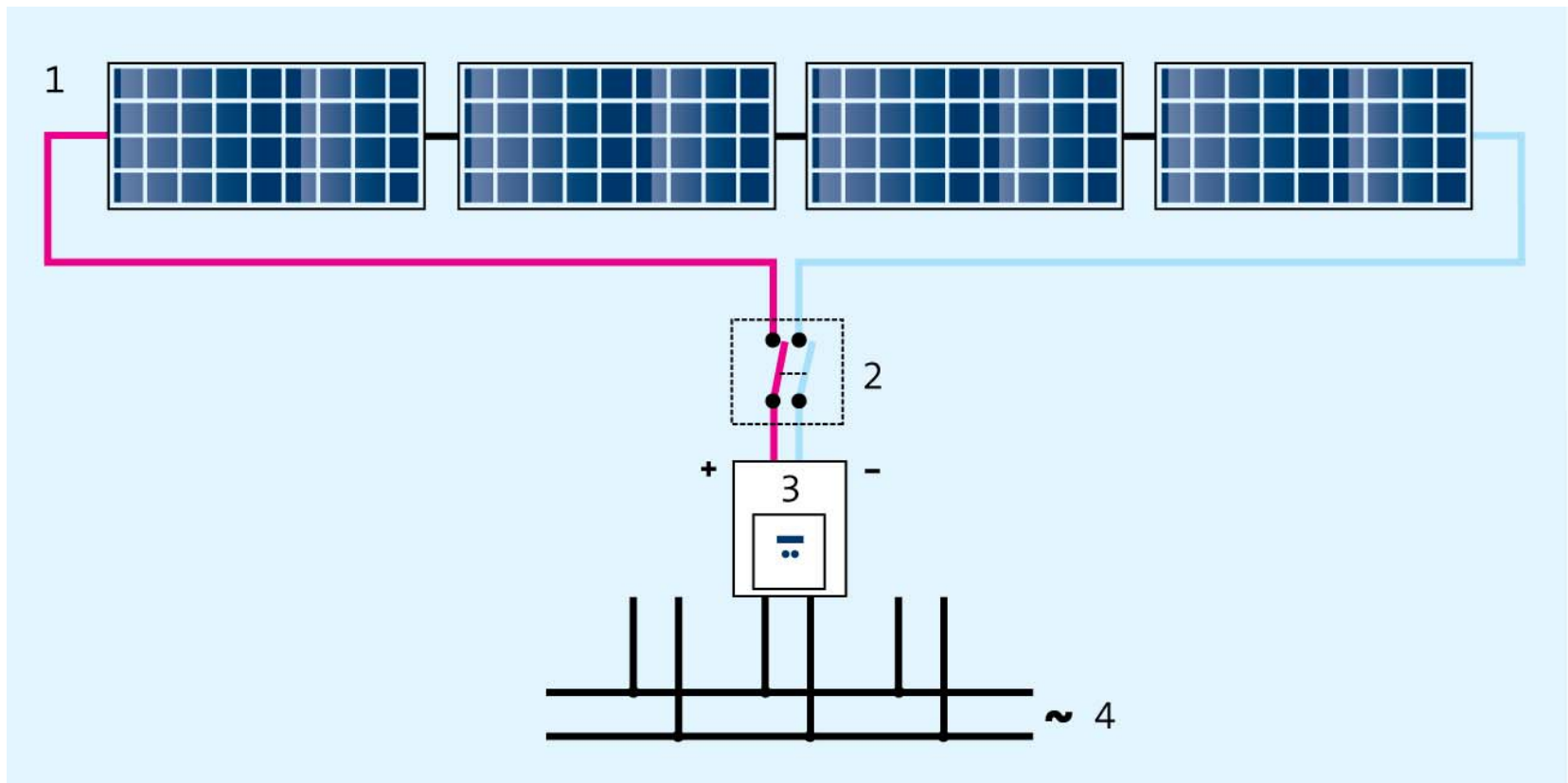


# Grid-tied PV systems using a central inverter or multiple inverters



1 PV array, 1a/b Part PV arrays, 2 PV Combiner Box, 3 Inverter

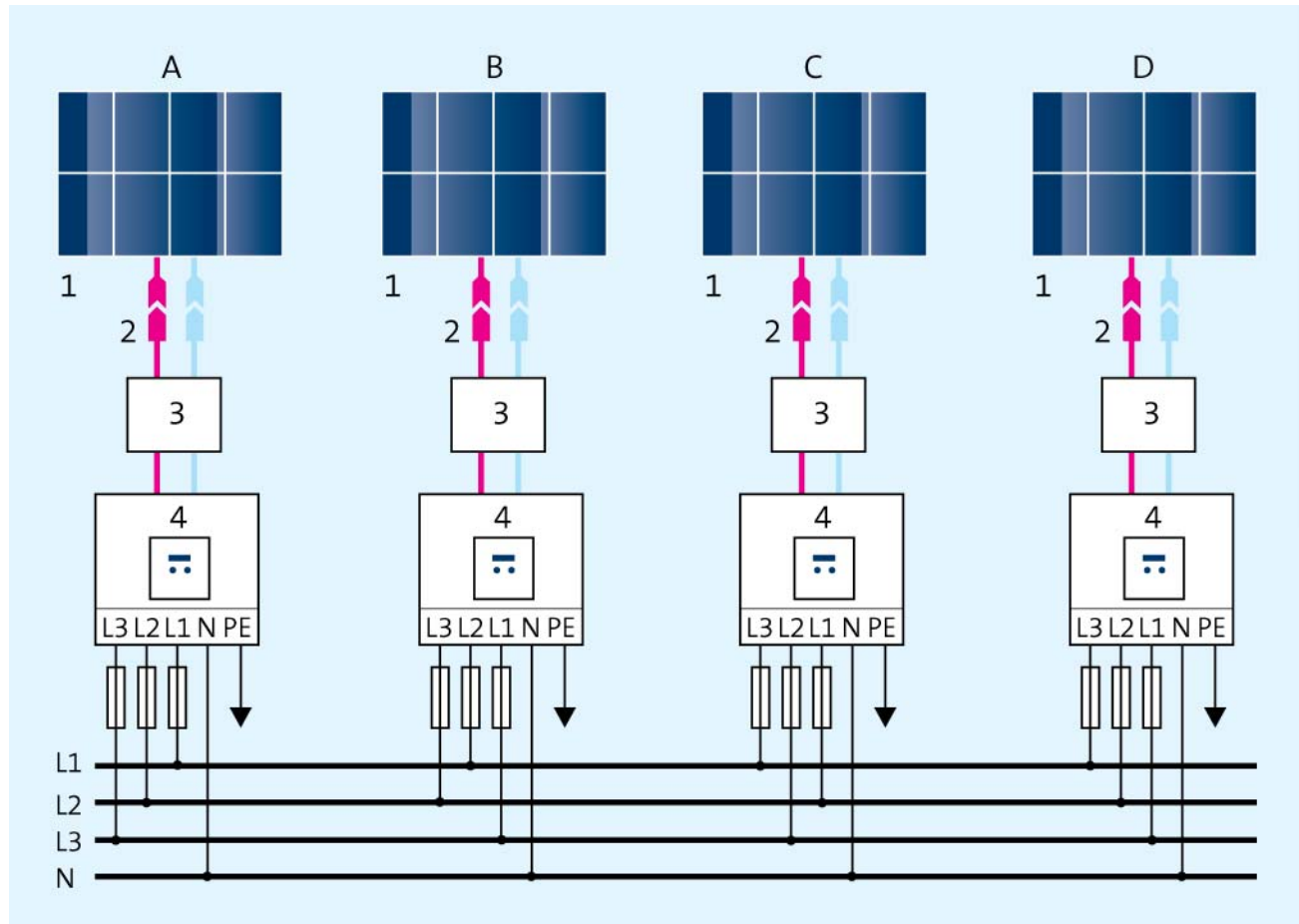
# String inverters



1 PV array, 2 DC-Isolator, 3 Inverter, 4 Grid



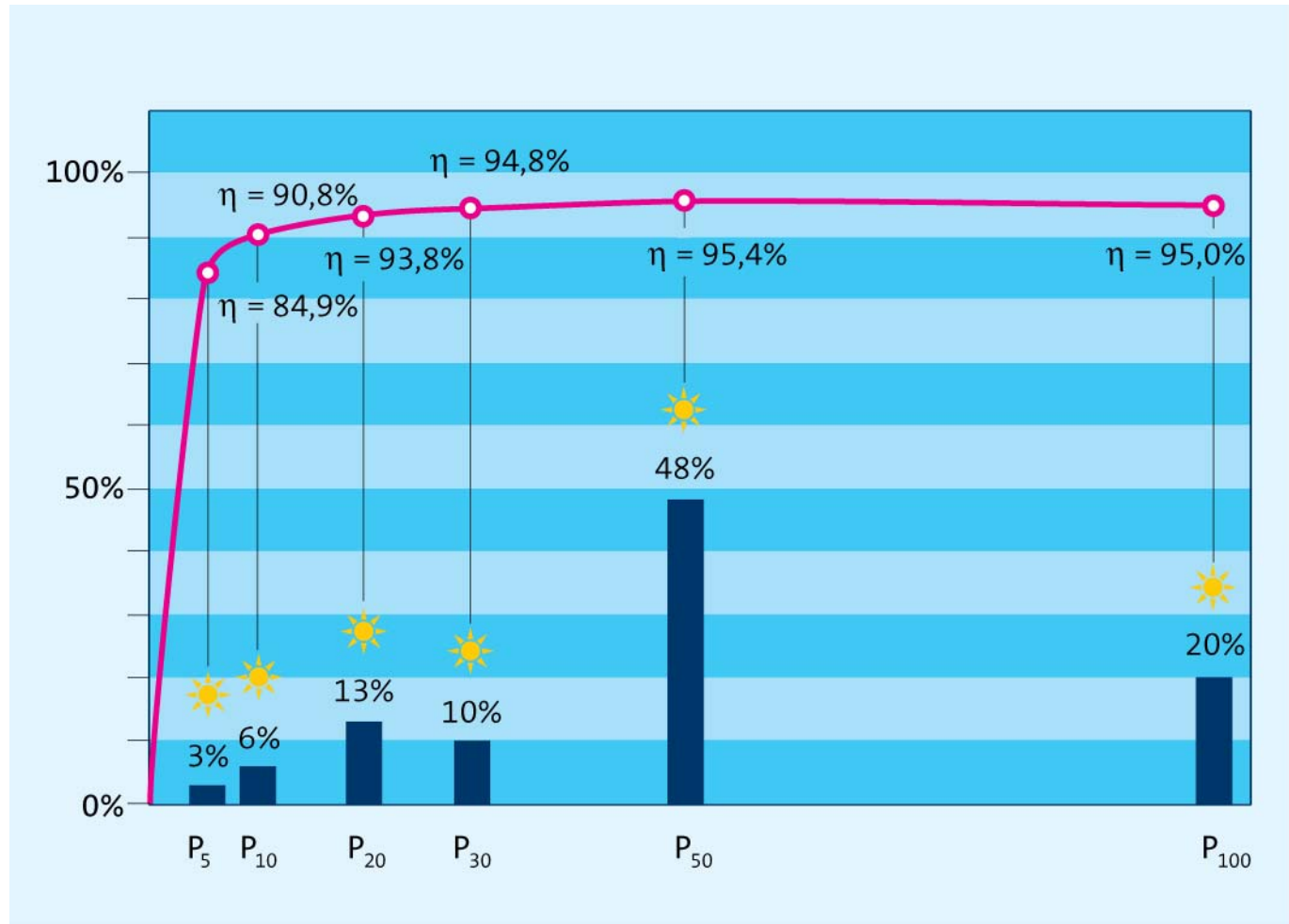
# Grid-side connection of multiple inverters



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1 PV array, 2 DC plug-socket connectors, 3 PV combiner box, 4 Inverter

# The efficiency of an inverter



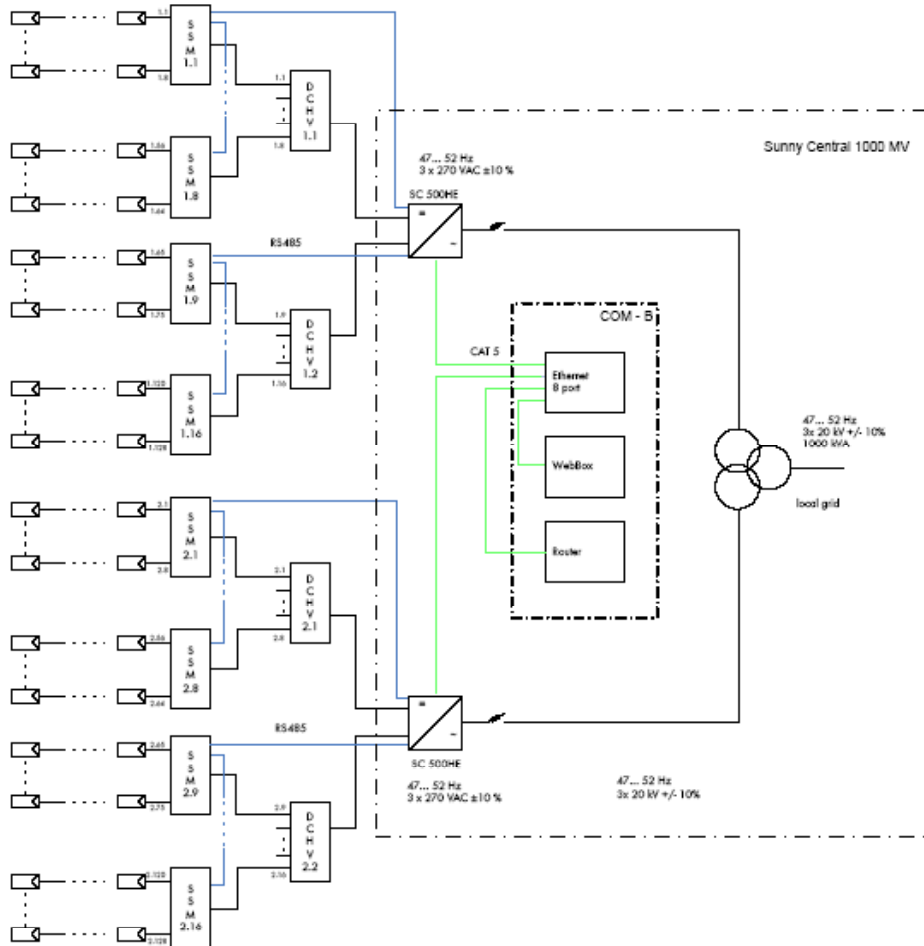
# Grid connected inverters for 1 kW to 1 MW applications



# 1 MW Power Plant with central inverter and String Inverter Sunny Boy



# Grid connected 1 MW PV System



Example 1MW plant

SMA Technologie AG  
TSS 071206

# Plant Example – SC100 Central inverter outdoor



## Industrial & residential applications



Thank you very much for  
your attention

