Latest Photovoltaic Technology for our European Energy Needs

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The urgency to transform our global energy system towards 100% renewable energy (RE) use is getting more and more attention, especially in view of the yearly increasing weather phenomena ascribed to global climate change. Numerous studies of a world supplied with 100% RE show that harvesting solar energy, together with wind power, will be the main pillars of our future, sustainable energy system. For a world of near-100% RE we will need about 50-70 Terawatt of installed PV power, up from 1 TW that we achieved just recently. Fortunately, PV technology is still undergoing rapid progress towards higher efficiencies at lower cost.

We will discuss the current and emerging PV technology generations, that are today 95% based on crystalline-Si technologies. An important issue will be our efforts to re-start photovoltaic production in Europe along the full value chain, which is today an even more urgent issue in the face of the present horrible war in Ukraine, with the coming reduction of inexpensive fossil-based power for Europe.