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THINFAB

Economically Viable Solar Power with
Thin Film Silicon—Now!



world records

oerlikon
solar



INTRODUCING THE NEW THINFAB

Oerlikon Solar proudly announces the new ThinFab which reduces the manufacturing cost of thin film silicon modules to a record breaking € 0.50 Wp, with 10 percent stabilized efficiency and 143 Wp module performance. Beyond that we introduce our new world record breaking cell efficiency of stabilized 11,9 percent on Micromorph® technology, confirmed by NREL.

FEATURES & BENEFITS NEXT GENERATION PECVD KAI MT 2

2

- 100% Higher productivity (throughput) since launch of Micromorph® to significant reduction of capex/Wp
- Best in class in facility consumption: up to 30 % less gas and electricity usage
- Integrated Micromorph® process (no vacuum breakage between both absorber films) using 40 MHz technology
- Optimized temperature cycles during deposition (less heat & cooling steps)
- Contamination free processing enabled by the differential pressure in the Plasma Box® and the new gate valve isolation between the process chambers

FEATURES & BENEFITS NEXT GENERATION TCO 1

1

- 60% higher throughput and 40% lower cost of ownership compared to the previous generation
- Best-in-class transmittance and light trapping enables a high efficiency thin absorber layer
- In-house front contact TCO enables cost-efficient local bare glass sourcing
- Extended maintenance cycles allow higher system availability

FEATURES & BENEFITS NEXT GENERATION LSS LASER 3

3

- Faster process through 50% tact-time reduction
- Reduced scribe separation leading to increased active area i.e. higher module power
- Improved process stability leading to even higher reproducibility

FEATURES & BENEFITS NEW LOW VOLTAGE MODULE 4

4

- Up to € 5.80 cost saving on electrical BOS per module
- Operating voltage (Vmpp) in the regime of crystalline silicon
- Attractive homogenous black appearance across the entire module
- Excellent Micromorph® temperature coefficient of 0.26%/°C power maximum power point (Pmpp)
- Best in class TCO corrosion resistance¹ even by applying transformer less inverters, leading to up to 3% higher energy yield!

THINFAB FEATURING

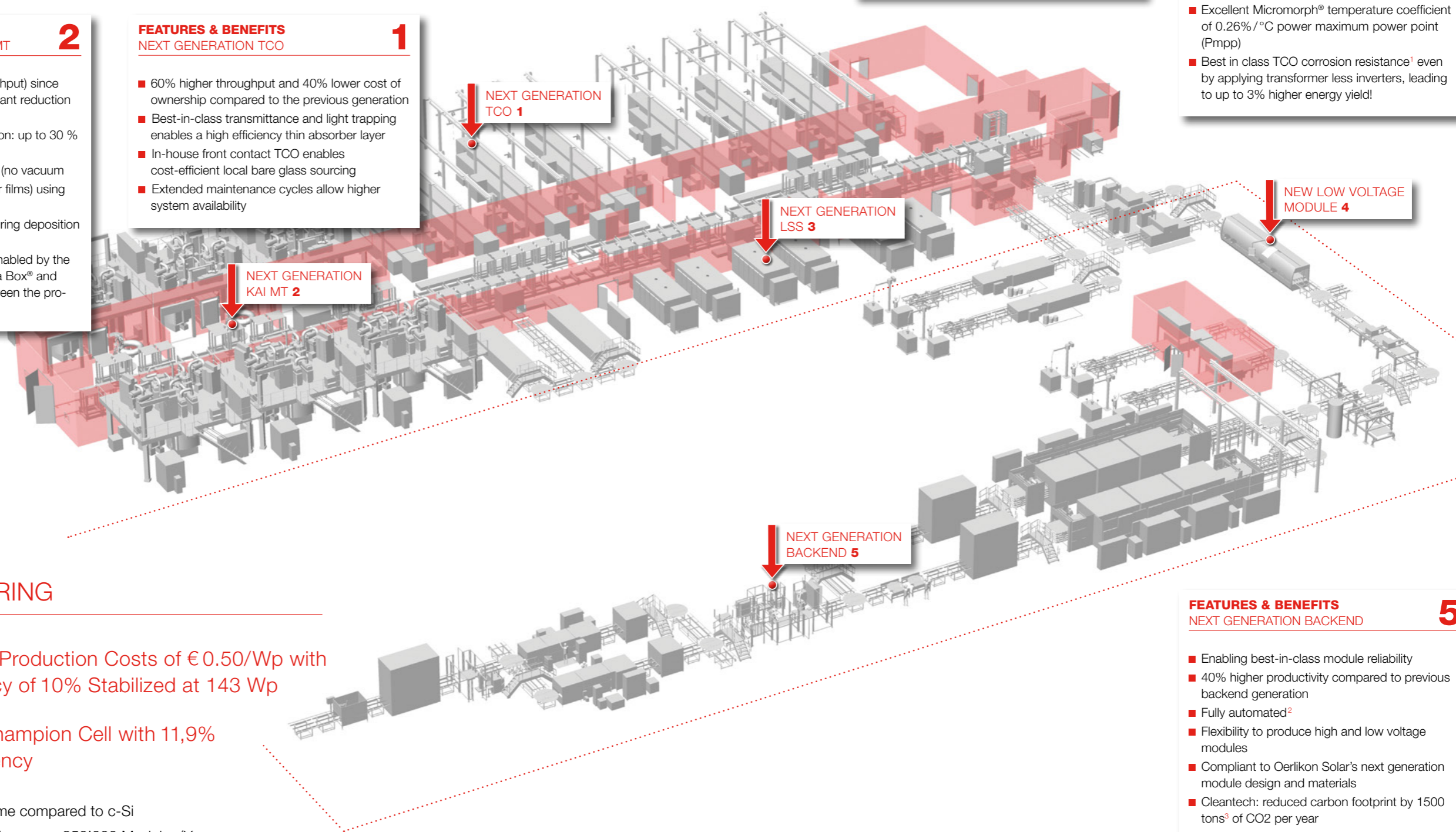


Lowest Module Production Costs of € 0.50/Wp with Module Efficiency of 10% Stabilized at 143 Wp



...and a New Champion Cell with 11,9% Stabilized Efficiency

- Lowest Energy Payback-Time compared to c-Si
- Output capacity of 120 MW, approx. 850'000 Modules/Year
- Non-toxic and Environmentally Friendly Micromorph® Technology
- Unlimited Resources for Thin Film Silicon



FEATURES & BENEFITS NEXT GENERATION BACKEND 5

5

- Enabling best-in-class module reliability
- 40% higher productivity compared to previous backend generation
- Fully automated²
- Flexibility to produce high and low voltage modules
- Compliant to Oerlikon Solar's next generation module design and materials
- Cleantech: reduced carbon footprint by 1500 tons³ of CO2 per year
- Short time-to-market: Transfer of IEC61646/61730 and UL1703 master certificate at start of production

¹ In combination with Oerlikon Solar MMI (Module Mounting Interface)

² Except substrate loading (front and back glass)

³ European reference energy mix leading to 0.6kg CO2 per kWh