# Meyer Burger Scaling Solar Manufacturing

**Corporate Presentation July 2023** 



### Disclaimer

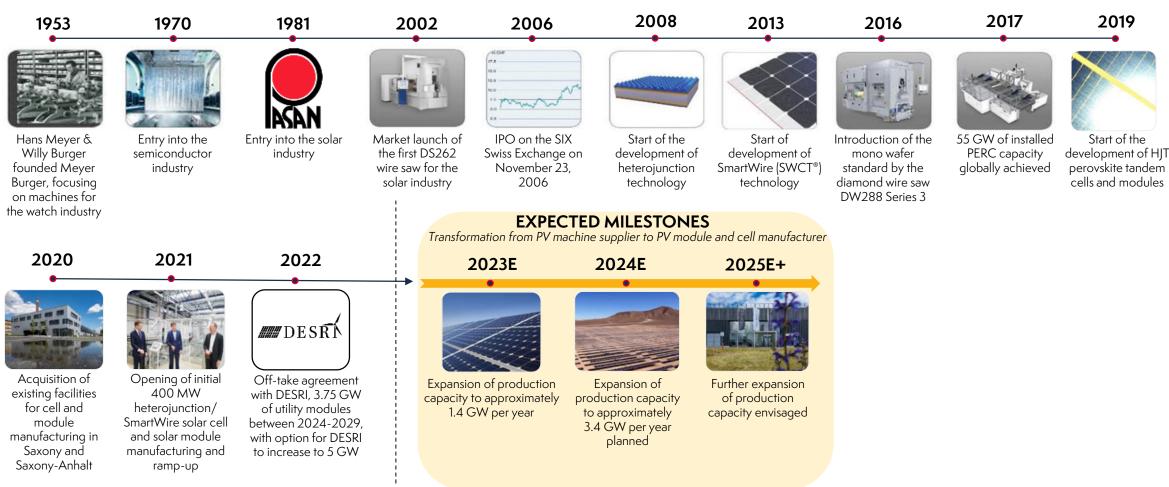
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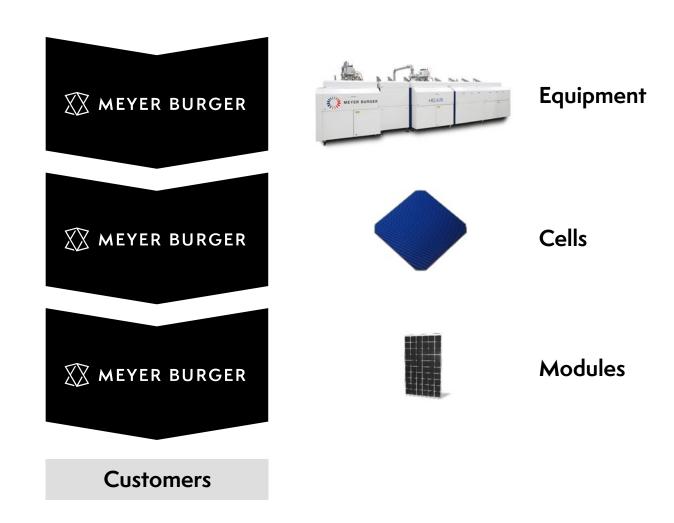
### 70 years of experience, including 40 years in PV



### New captive business model since 2020

#### A sustainable business transformation

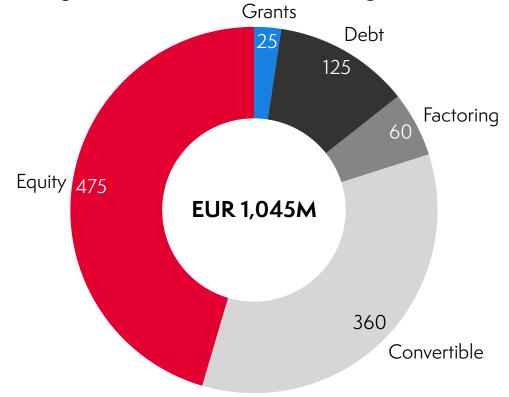
- Leading R&D with in-house process and equipment development
- Equipment and technology exclusively for Meyer Burger's own use
- Safeguards intellectual property and competitive advantage
- Captures value of technology for Meyer Burger
- Creates strategic independence





## Meyer Burger implements its gigawatt growth strategy with strong financial basis – at the existing sites and in the U.S.

#### Meyer Burger raised EUR ~1.05B financing in 2020-2023



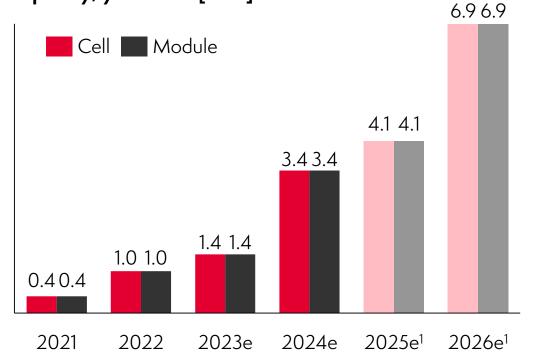
- After strategic repositioning in summer 2020, raised first equity tranche of CHF 165M
- Bankable business case expansion financed by syndicated loan and factoring facility
- Additional equity and green convertible bond for financial flexibility and expedited growth raised in summer 2021
- Successful equity raise of CHF 250M in 2022
- Successful placement if a EUR 216M green convertible bond for phase 2 expansion financing and for further financial flexibility in 2023



## Following the successful build-up of our 0.4 GW capacity, we are continuing our international capacity growth

#### Cell and module production

Meyer Burger planned installed nameplate production capacity, year-end [GW]



1) Scenario, depending on policy support, e.g. EU Innovation Fund

#### Roadmap:

- Approximately 1 GW cell and module nameplate capacity installed in Thalheim and Freiberg, Germany, respectively, in 2022
- A further ~0.4 GW cell and module capacity expected to become available at the same German sites in 2023
- Expansion by another ~2 GW of cell production in Colorado Springs, U.S. by 2024, and module production in Goodyear, Arizona planned (thereof up to 1.4 GW for long-term offtake with DESRI, BayWa and Ingka)



## Increasing Goodyear capacity by ~400 MW and replicating DESRI offtake agreement

#### Planned capacity expansion

- Module: increasing Goodyear annual capacity from approximately 1.6 GW to approximately 2 GW with minimal incremental CAPEX
- **Cell:** additional equipment for higher cell volume required in Colorado (Colorado Springs, U.S.)

#### Key offtake parameters for incremental volume

- Customers: two new major developers/offtakers (BayWa and Ingka Investments / IKEA)
- **Term:** multi-year starting in 2025
- Down payments: down payment for incremental CAPEX as well as substantial recurring annual down payments for working capital

#### Further economically attractive expansion

- Contractual offtake structure successfully pioneered with DESRI now replicated with new blue chip customers (BayWa and Ingka Investments / IKEA)
- Compared to DESRI agreement, higher and earlier down payments also cover required CAPEX
- Expansion to overall approximately 3.4 GW triggers incremental economies of scale that further dilute fixed costs and improve operational margins
- Additional IRA tax credits to be expected through U.S. module production (partially shared with customers)
- Further strengthening of Meyer Burger's U.S. footprint
- Negotiations with further strategic offtake partners in the U.S. and Europe on the back of the offtake model continue to be ongoing

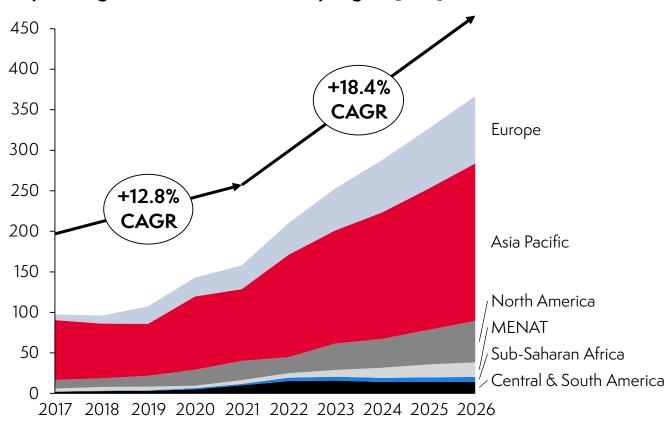


## Global energy crisis drives further growth in renewable energy, especially in the solar sector

Solar energy propelled by energy crisis, but global supply chains need to become more resilient

- Solar demand has shown to be robust despite significant uptick in cost of all system components, including modules, and despite supply chain disruptions
- Cost increase is driven by high material prices.
   Polysilicon as a key driver, remains volatile
- War in Ukraine, natural gas shortage and high energy prices in 2022 have further fueled demand for solar
- Almost exclusive regional concentration of PV supply chain in Asia, and the resulting high degree of dependency is becoming a concern for many customers

#### Expected global solar market size by region [GW]

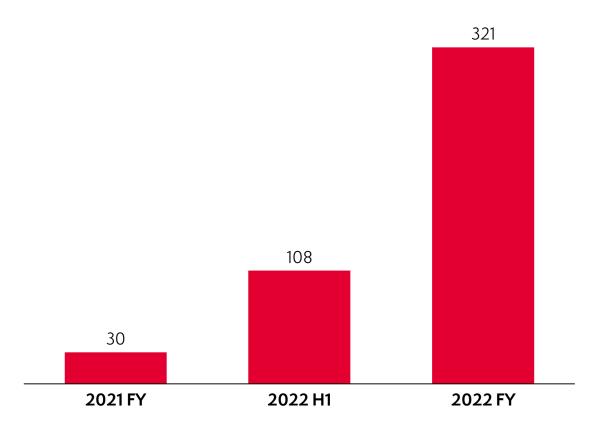


Source: Apricum - The Cleantech Advisory, Q1 2022, center scenario, Q1 2023 Europe + U.S., center scenario



## Production continuously running, supply chains being further de-risked

#### Modules produced [MW]



### Ongoing production and parallel capacity expansion on track

- A total of 321 MW was produced in 2022
- Ramp-up of the second production line commenced in September 2022
- Additional production lines (as part of the ongoing 1.4 GW expansion) are expected to eliminate bottlenecks and improve operational performance
- Supply chain risks are being actively managed in order to maintain continuous production and enable timely ramp-up
- Meyer Burger continues to de-risk its supply chain (e.g., European wafer supply contracts signed)



### Sequentially entering market segments, as we grow available volume

#### Target segments (entered sequentially)

Residential rooftop<sup>1</sup>

- 2 Commercial & industrial rooftop
- 3 Utility-scale







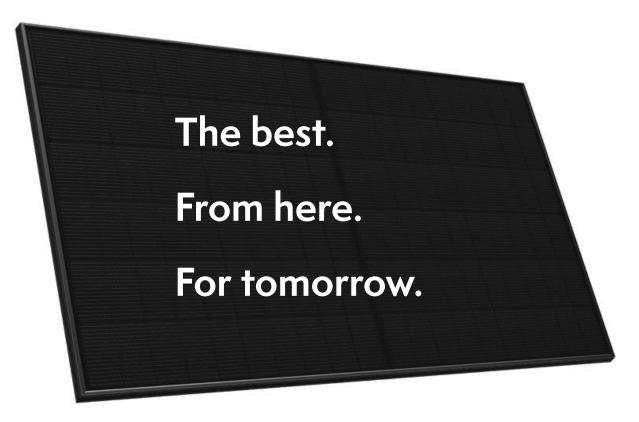
- Main market segment
- Fully established
- Selling through our distributor network
- Pursuing high-value and strategically relevant projects from Q2/2022
- Won iconic SC Freiburg 2.4 MW stadium project, already installed
- Planning to expand sales team and customer base

- Modules to be produced in Goodyear, AZ
- Offtake agreement signed with three different customers (at least 5.35 GW from 2024–2029)
- Discussing further long-term agreements with potential strategic partners

1) Includes small commercial systems



### Rooftop product with strong unique selling proposition



1) Compared to currently standard PERC modules offered in market; 2) Maximum figures per data sheet, actually produced and delivered efficiency may be lower; 3) Actual performance depends on application scenario, mode of installation, environmental conditions and other factors; 4) As evidenced by, inter alia: confirmed by Fraunhofer ISE to cause less  $CO_2$  emissions per kWh produced compared to conventional standard modules (based on lifecycle assessment); received environmental protection grant from Germany state of Saxony-Anhalt based on environmentally friendly production characteristics; polysilicon in wafers used coming from European manufacturers Wacker, among others; code of conduct for suppliers with respect to environmental and social standards, human rights

#### Strong arguments to buy Meyer Burger module:



**High performance:** Higher efficiency<sup>1</sup> (up to 21.8%<sup>2</sup>), more energy per area<sup>1, 3</sup>



**High quality:** Low degradation and long lifetime (>92% warranty after 25 years)



**Appealing aesthetics:** Almost uniform black appearance



"Made in Germany": Cells and modules produced in Germany



**Swiss innovation:** Proprietary next-generation PV technology platform



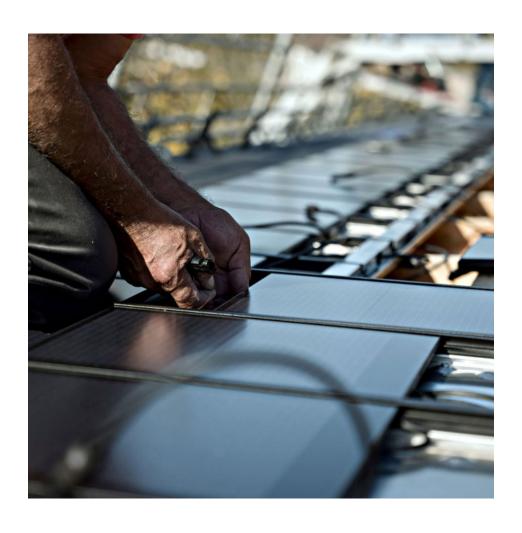
**Relatable corporate "story":** Strong media presence and credibility



**Sustainability:** High social, environmental standards.<sup>4</sup> Module free of toxic lead



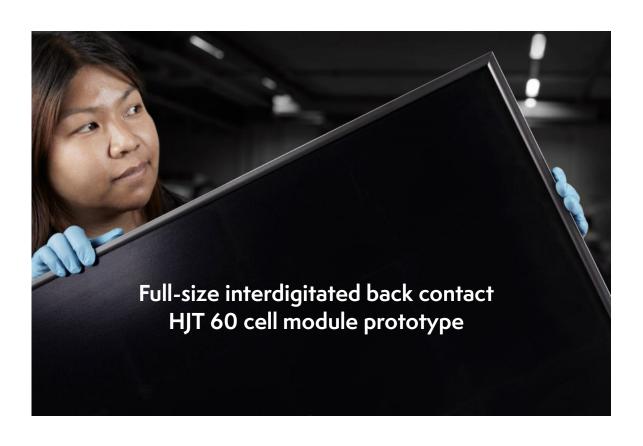
### Innovation as a driver – Meyer Burger's solar roof tiles



### Meyer Burger sees great growth potential in the market for integrated solar roof tiles

- At the Intersolar trade fair in October 2021, the preview of our envisaged solar roof tile product was a crowd magnet
- Expansion of existing module portfolio planned with a roofintegrated high-performance solar system that can be installed easily just like traditional roof tiles
- Meyer Burger expects to be able to increase the overall demand for solar roof tiles with this highly innovative product and to strengthen the company's sustainable business development
- Solar roof tiles already been certified according to IEC 61215 and IEC 61730, further roofing standard testing passed (e.g., wind/rain test)
- First pilot installation and first distribution agreement achieved in Q4 2022, first volume sales planned in H2/2023

## The next-generation heterojunction technology in the works according to our communicated R&D roadmap



#### **Development on track:**

- **Phase I:** Today's technology, power classes available, best cell efficiencies >25% in mass production.
- Phase II: HJT-IBC, currently in pilot testing at Meyer Burger Research in Neuchâtel, use in production targeted from 2025 onwards
  - In-house development of equipment for production of nextgeneration cells and modules based on HJT technology
  - Increased performance, continuous cost reduction leading
  - Ultra-low degradation
  - Commercial module efficiency of >23% expected in mass manufacturing
- Phase III: HJT+Perovskite tandem in development with research partners CSEM, Fraunhofer ISE, HZB Berlin, University of Stuttgart



## Meyer Burger aims to drive the solar module product evolution in utility segment from 2024

#### Planned product features:

- Standard utility sizes based on 72 M10 (182 x 182 mm²) solar cells
- Specific new features driving expected performance:
  - glass-glass product combining >90% bifaciality and white module front-side STC-rated power of up to 575 W
- Extended warranties; certifications for bankability





## New unified product platform delivers value for customers and Meyer Burger – glass is the "ultimate backsheet"

#### New unified product platform from 2024



- All products to be built with glass as backsheet
- Back side can be colored (white, black) or kept transparent
- Same module technology for residential and utility module

#### Customer advantages – increasing value

- Lower degradation, better longevity and longer warranty compared to glass/foil backsheet products
- Unified product dimensions white, black and bifacial variants can be seamlessly swapped
- Lower weight than current glass/glass product, similar to glass/foil product
- Higher system voltage (1,500 V)

#### Meyer Burger advantages – reducing cost/complexity

- Less product variations reduce overhead and complexity in production, procurement, logistics and engineering
- Higher production throughput after line optimization
- Even more coherent strategic positioning as "quality leader"



## Industry policy announcements and potential financial support for solar industry relaunch in the European Union

#### **TCTF MATCHING CLAUSE (effective)**

- With the TCTF, the European Commission has lifted some state aid restrictions
- Matching clause under the TCTF makes CAPEX/OPEX support for up to 100% of an investment possible (Nr. 86)
- Prerequisite: Aid offered by other third country (e.g., through
   U.S. Inflation Reduction Act)
- Project must meet a range of conditions (location etc.).
- The TCTF only provides the state aid framework, Member
   States need to set up the necessary schemes
- All funding under the matching clause needs individual state
   aid notification and approval from the European Commission



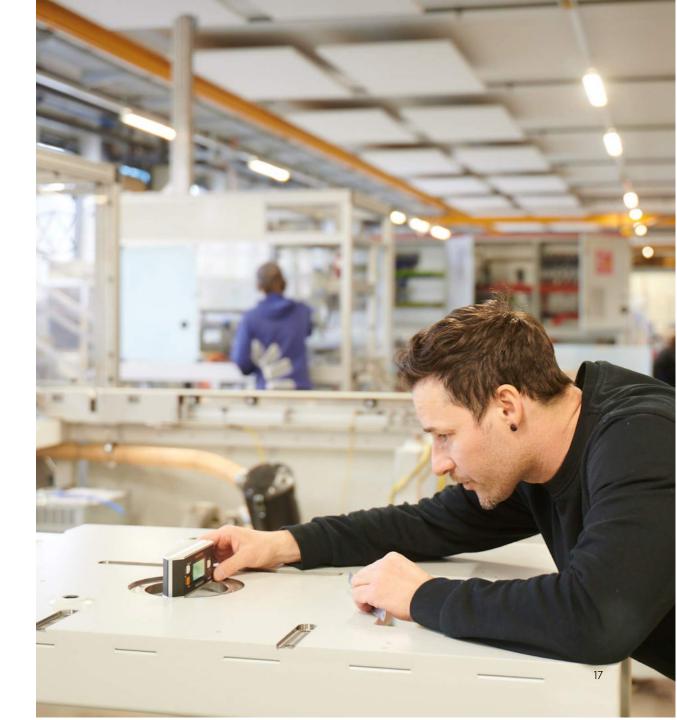
#### NZI-A PREMIUM (in EU Parliament & Council now)

- The Net Zero Industry Act (NZI-A) is a regulation proposed by the European Commission. European Parliament and Council still need to approve. Adjustments possible, approval is likely by end of 2023
- NZI-A would offer additional support with a Net Zero Resilience Premium (Article 21) and through advantages in renewable energy auctions (Art. 19+20)
- Member states would be required to establish premium funding for sustainable & resilient products for end consumers: 5% extra on prices that end customer pay for "net-zero resilience" modules
- Member states would be required to adjust auction results according to net-zero resilience criteria
- Parts of premiums would then be expected to trickle down to the manufacturer
- Securing a share of the premium through pricing will be key to additional OPEX support



### Outlook 2023

- Ongoing expansion projects in Germany and the U.S., with increased target to achieve approximately 3.4 GW nameplate capacity by end of 2024
- Targets for 2023:
  - ~800 MW production
- Fast track addition of further capacities depending on industry policy implementation in Europe and the U.S.



### MEYER BURGER

With the right energy, anything is possible.