European Commission – Renewable associations Co-Organised Workshop:
Innovation Fund 3rd Large-Scale call

Meyer Burger Project Teaser: “INDIUM” – Scaling PV Manufacturing

June 28, 2022

Andreas Waltinger

MEYER BURGER

Who we are: Meyer Burger – almost 70 years of experience, including 40 years in PV

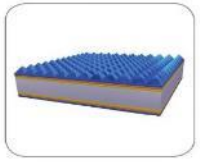
1953 
Hans Meyer & Erich Burger founded Meyer Burger, focusing on machines for the watch industry

1970 
Entry into the semiconductor industry

1981
Entry into the solar industry

2002 
Market launch of the first DS262 wire saw for the solar industry

2006 
IPO on the SIX Swiss Exchange on November 23, 2006

2008 
Start of the development of heterojunction technology

2013 
Start of development of SmartWire (SWCT®) technology

2016 
Introduction of the mono wafer standard by the diamond wire saw DW288 Series 3

2017 
55 GW of installed PERC capacity globally achieved

2019 
Start of the development of HJT perovskite tandem cells and modules

EXPECTED MILESTONES

Transformation from PV machine supplier to PV module and cell manufacturer

2020 
Acquisition of existing production facilities for cells and modules in Saxony and Saxony-Anhalt

2021 
Opening of initial 400 MW heterojunction/ SmartWire solar cell and solar module manufacturing and ramp-up

2022E 
Expansion of production capacity to 1.4 GW per year planned including second module plant in the U.S., entry into C&I and solar power plant (utility) segments

2025E 
Expansion of production capacity to 4.2 GW per year planned

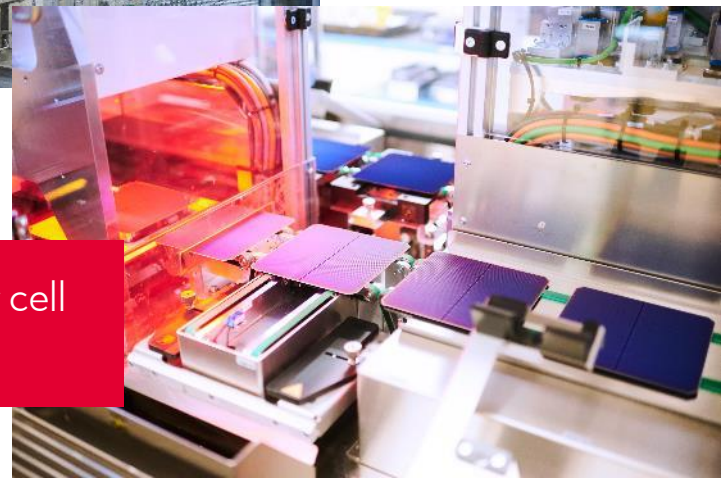
2027E 
Production capacity of 7 GW per year planned

Photo: Grand opening ceremony solar cell factory Thalheim, May 18, 2021 with Saxony-Anhalt Prime Minister Dr. Haseloff (left), MBTN CEO Gunter Erfurt and Saxony-Anhalt Minister Prof. Armin Willingmann

Where we are: 2 scalable highly modern PV-Production plants in Saxony and Saxony-Anhalt

Cell Production – Thalheim (Bitterfeld-Wolfen)

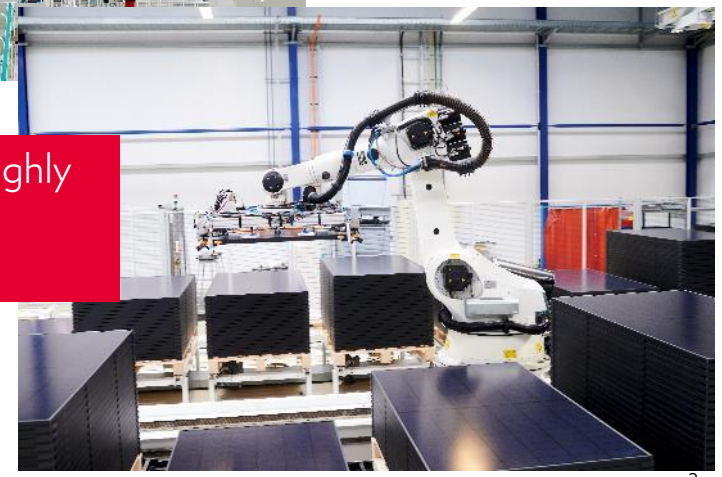
Site with expansion potential of up to ~ 7 GW annual cell production



27.000 m² of a former cell production

Module Production – Freiberg

Europe's largest solar module factory with 1 GW annual capacity

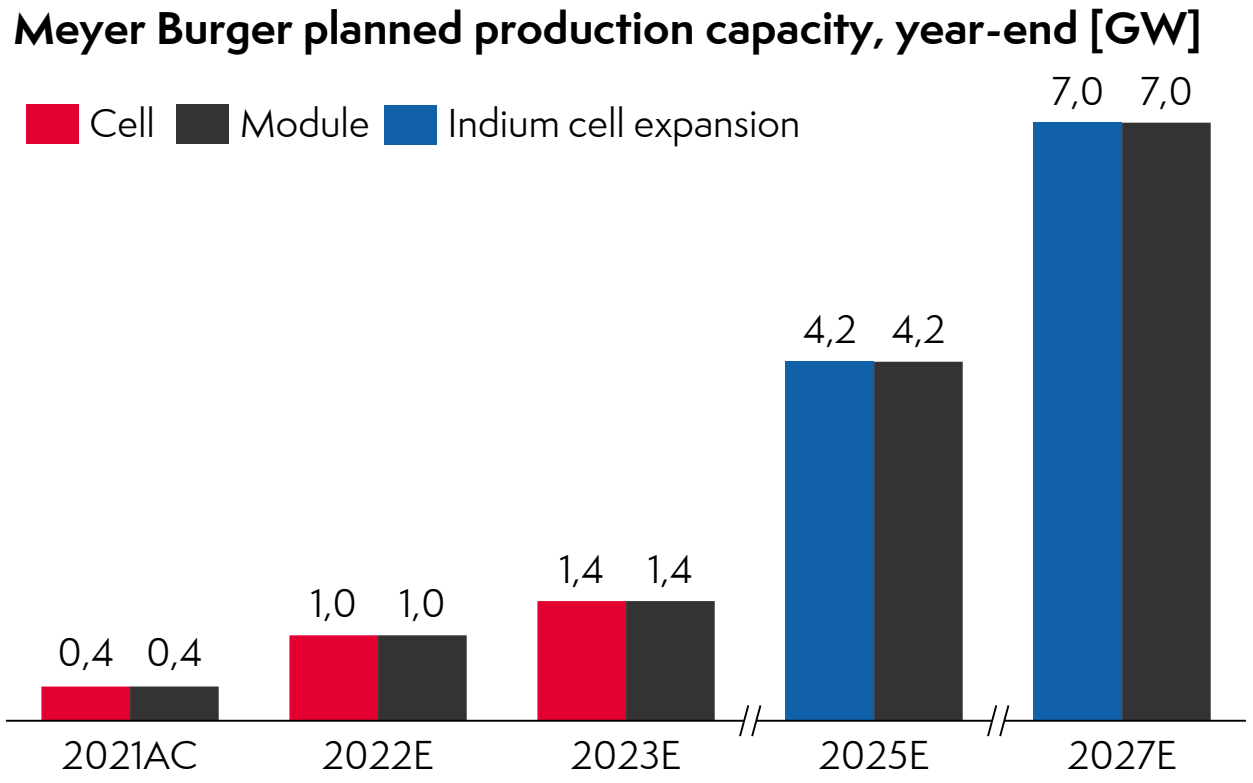


33.000 m² including highly modern logistics and distribution center

MEYER BURGER

Where we want to go: Following the successful build-up of our 0.4 GW capacity, we are scaling to multi-gigawatt level

Cell and module production



Source: Meyer Burger business plan (April 2022)

Manufacturing roadmap:

- 2023:
  - 1.4 GW p.a. cell production in Thalheim
  - 1.4 GW p.a. module production in Freiberg
- 2024: Start of Project "INDIUM"
- 2025: Ramp up of additional 2,8 GW p.a. capacity
- 2026: Entry in operation (Part 1)
- 2027: Ramp up of further 2,8 GW p.a. capacity
- 2028: Entry in operation (Part 2)

Quick facts of cell expansion programm

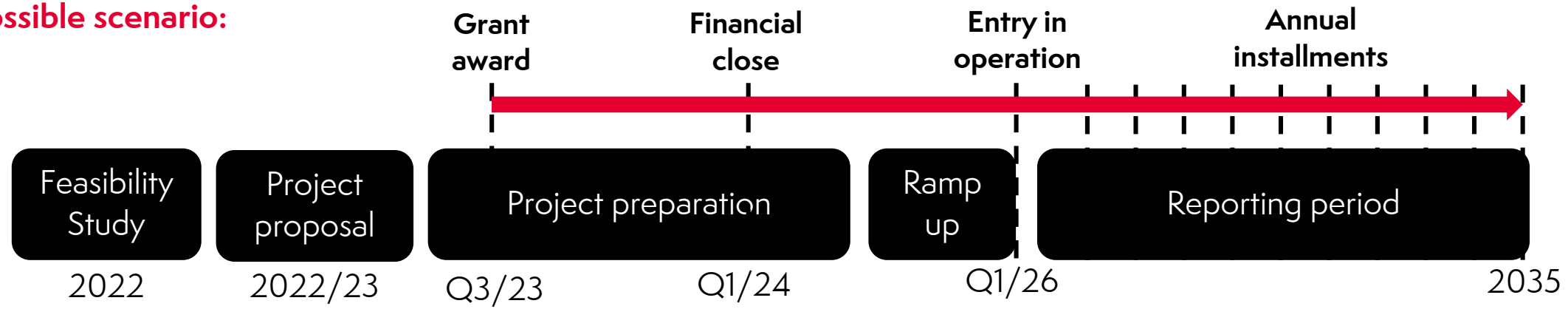
Project overview:

- **Technological pathway:** Renewable energy
- **Topic:** Scaling solar cell manufacturing
- **Required CAPEX:** ~ EUR 1.1B
- **Requested grants:** ~ EUR 200M
- **Sites:** land/sites for cell expansion secured; module fab locations TBD in Europe

GHG emission avoidance calculation:

- **Energy:** 5.6 GW p.a. → 462 TWh in 10 years operation (linear increment per year)
- **Expectation for MB modules:** 20 kg $CO_{2\,eq}$/kWh
- **German energy mix in 2021:** 420 kg $CO_{2\,eq}$/kWh
- **Savings:** ~185 million tons $CO_{2\,eq}$ emissions in 10 years if all modules sold and in installed

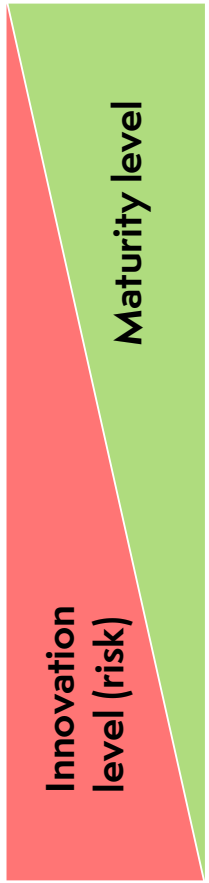
Possible scenario:



Challenges for the project proposal

What is the right innovation grade for INDIUM²:

- Ultra-low temperature coefficient
- Completely lead free (green modules)
- Bifaciality coefficient ≥ 90%
- M10 (182 x 182mm²) solar cells
- Ultra-thin wafers: 110µm
- Annual degradation of 0.2%
- High-throughput equipment & processes
- Indium & silver free modules
- IBC technology (4% more power)
- Tandem applications



MEYER BURGER

Ready to shine.