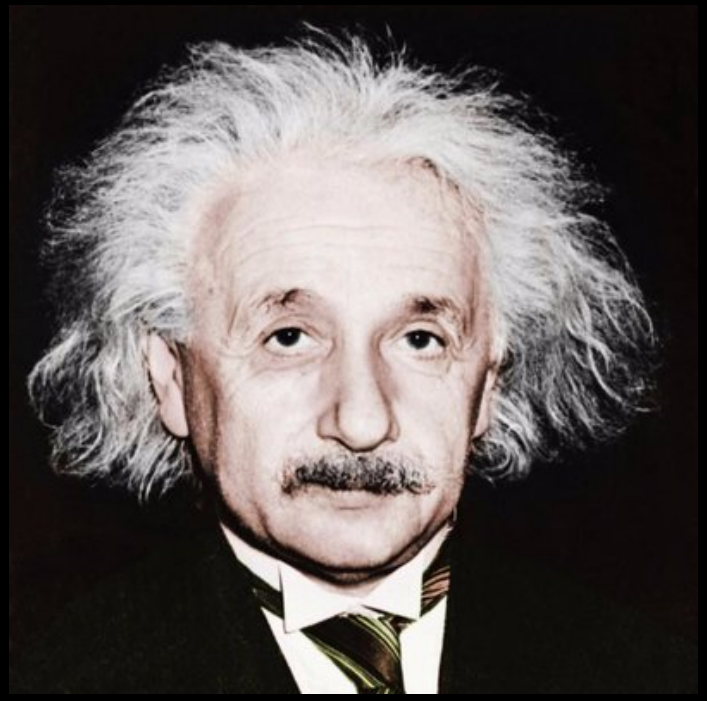
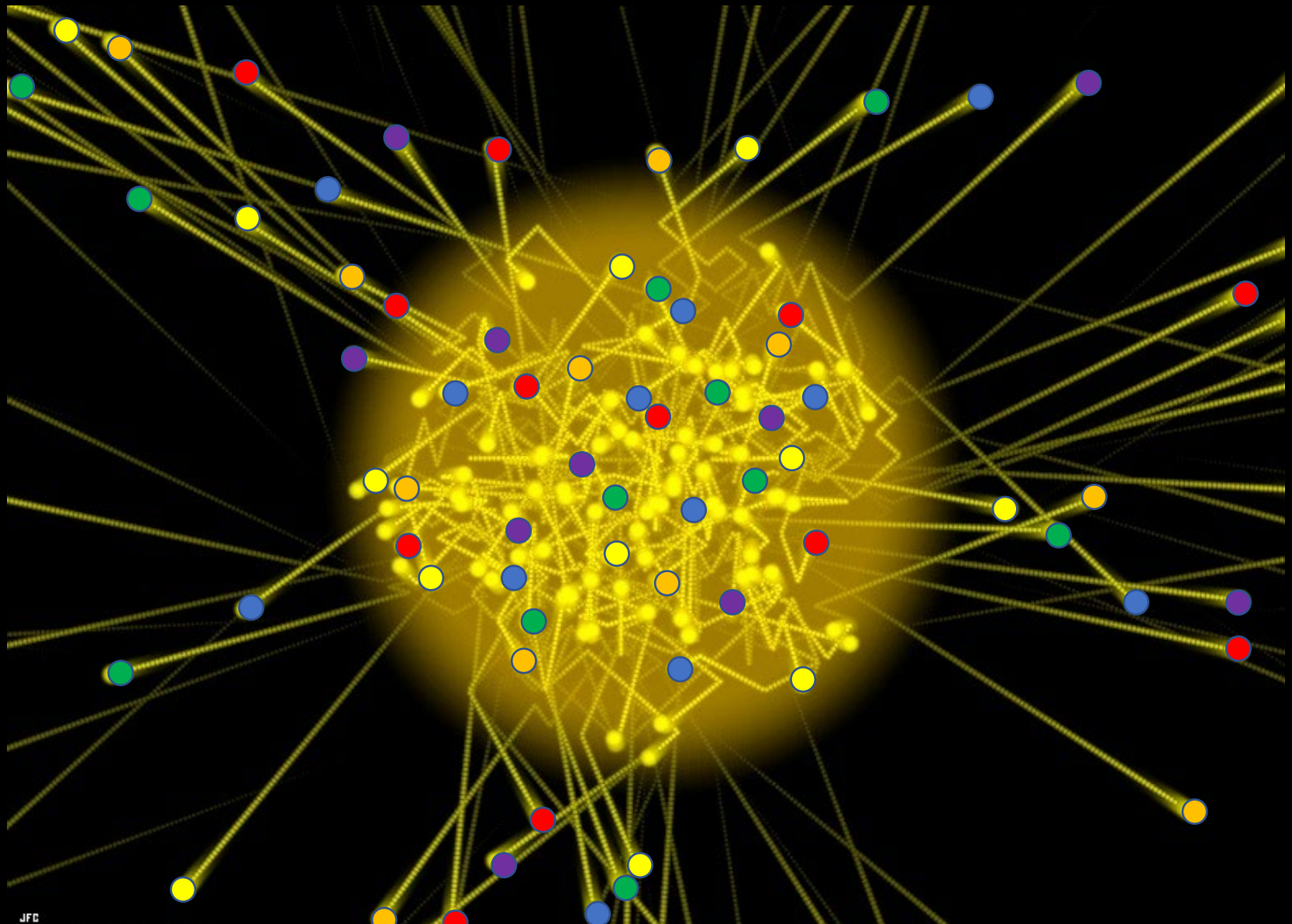
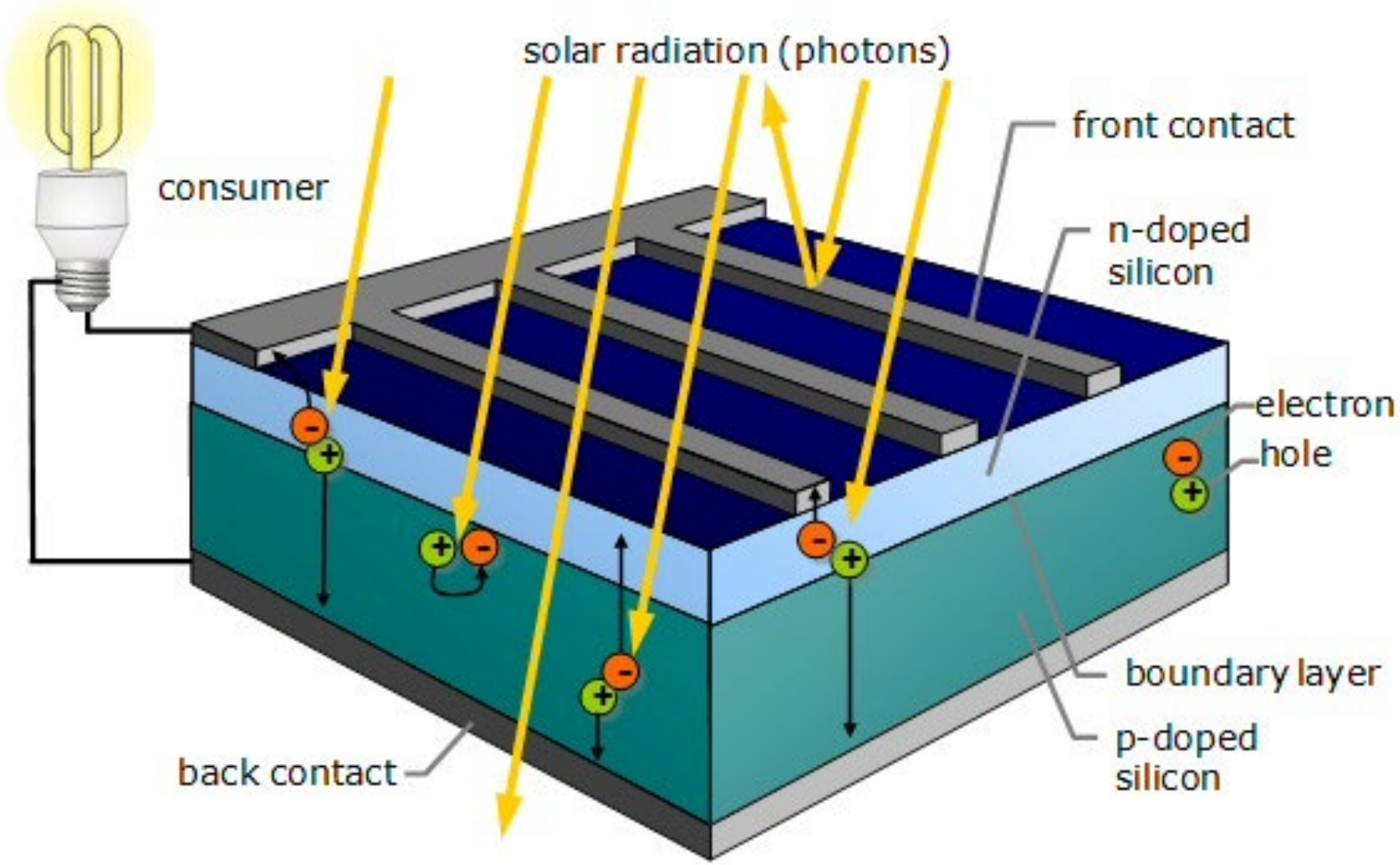

Martin Green
UNSW Sydney
‘No Matter How Small’
Solar cells take on climate change



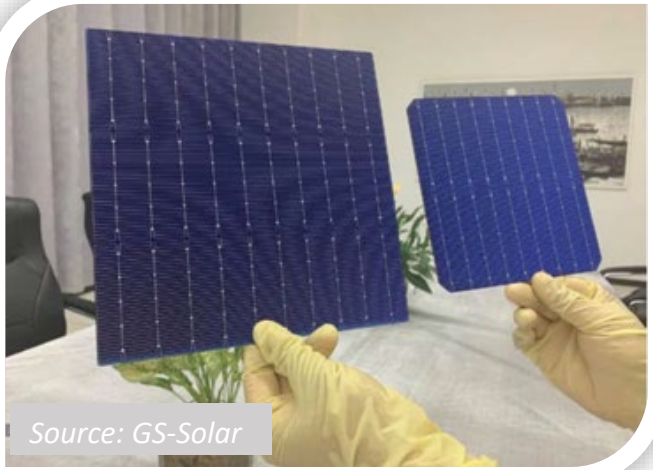
Photons



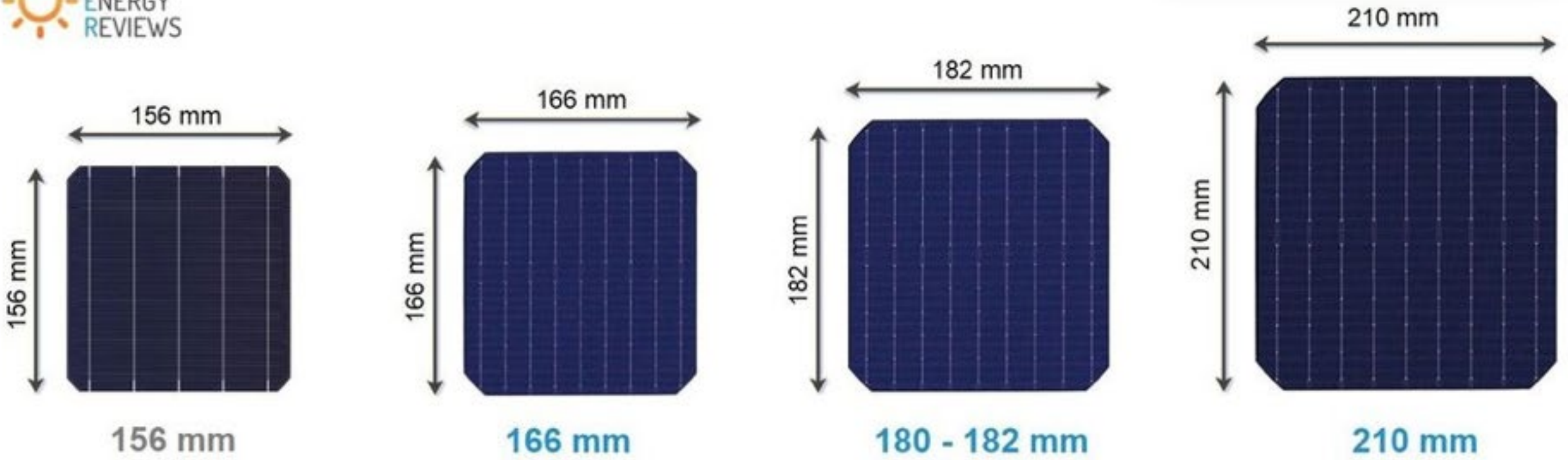


solar cell

converts photons to electrons


Source: GS-Solar

CLEAN ENERGY REVIEWS



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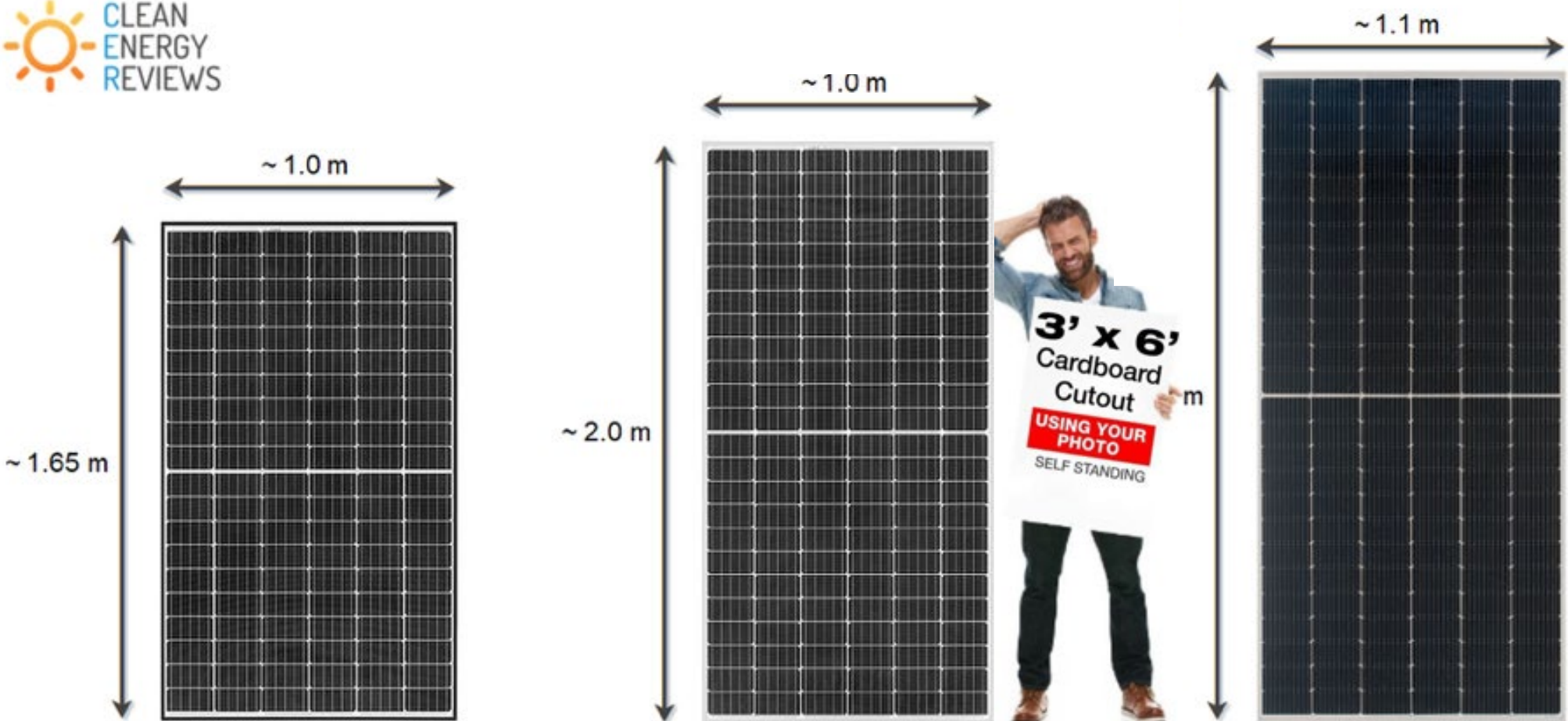
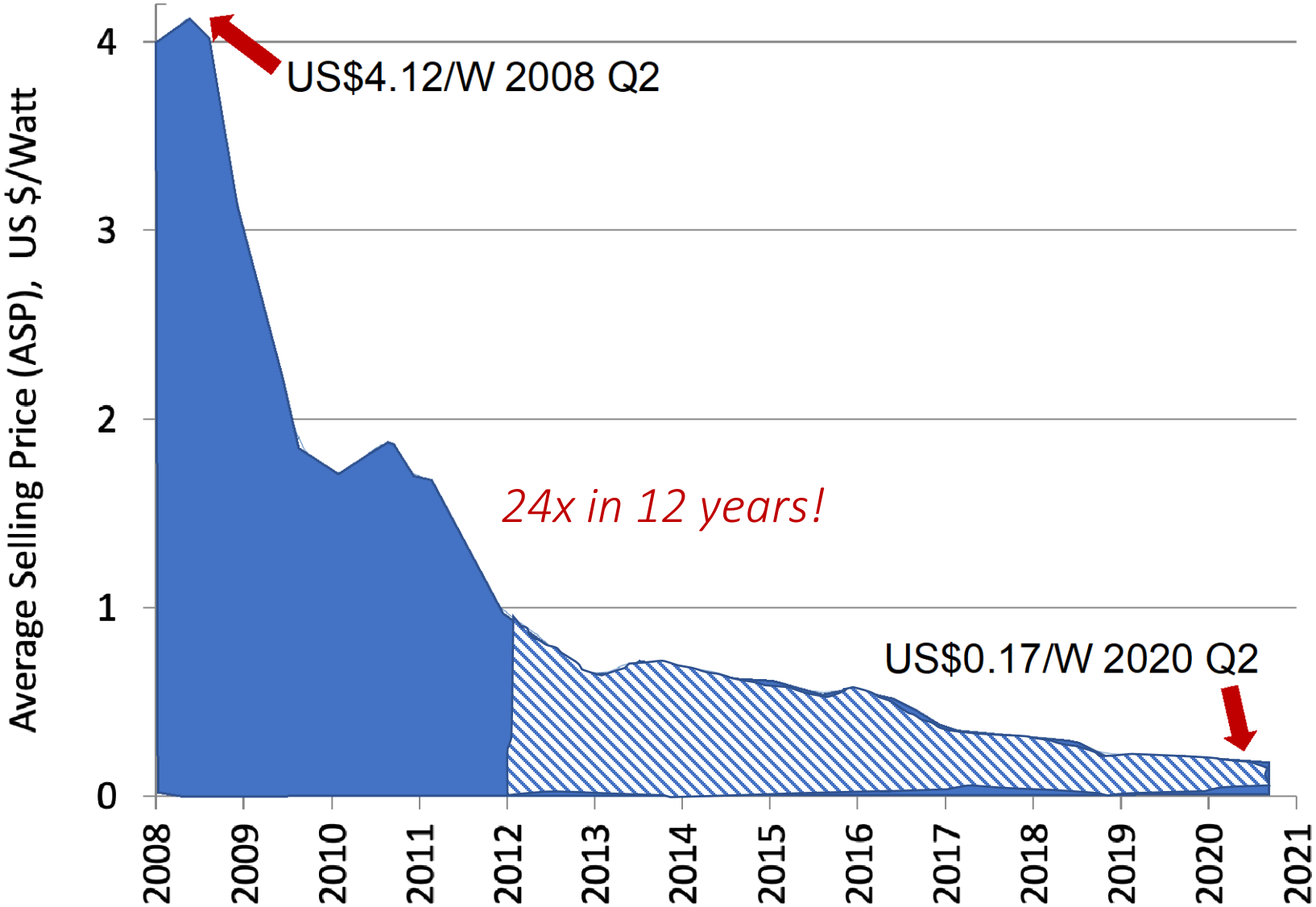
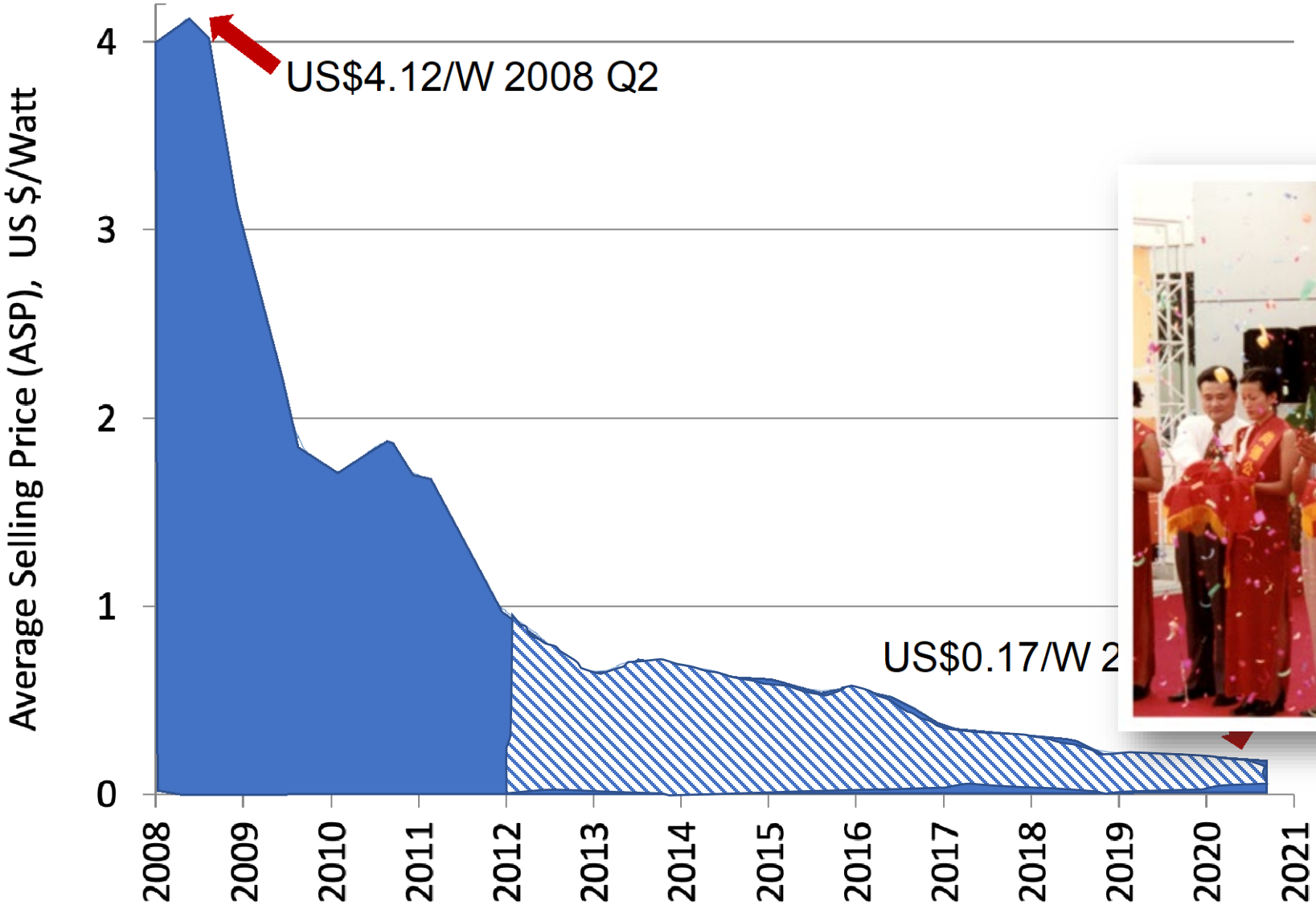


Capacity: 1.7 Gigawatts (GW)
Total installed (2021):191 GW/y
If grows 25%/year gives:
Installed (2029):1,000 GW/y
or 1 Terawatt (TW/y)

Price history



Price history



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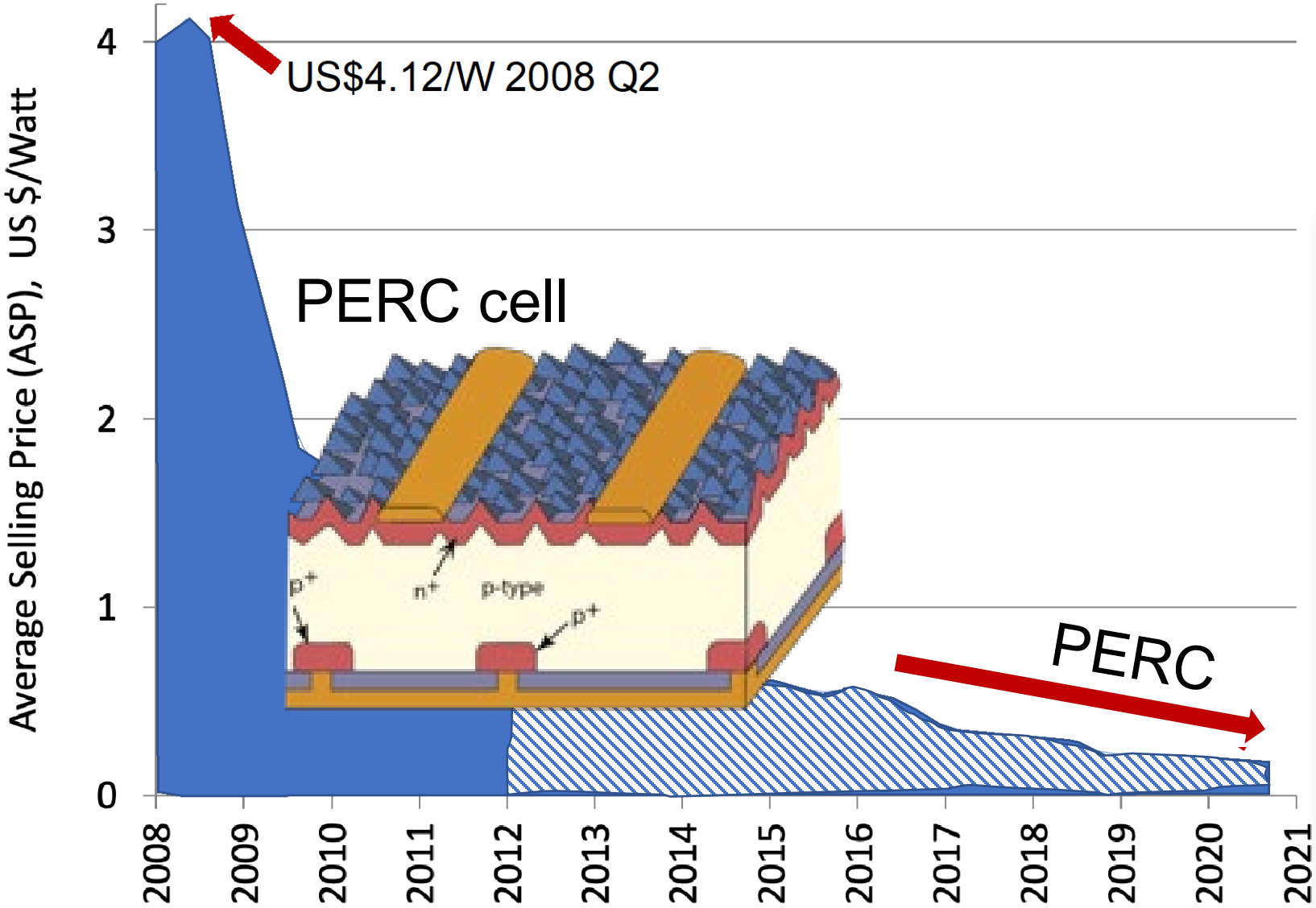
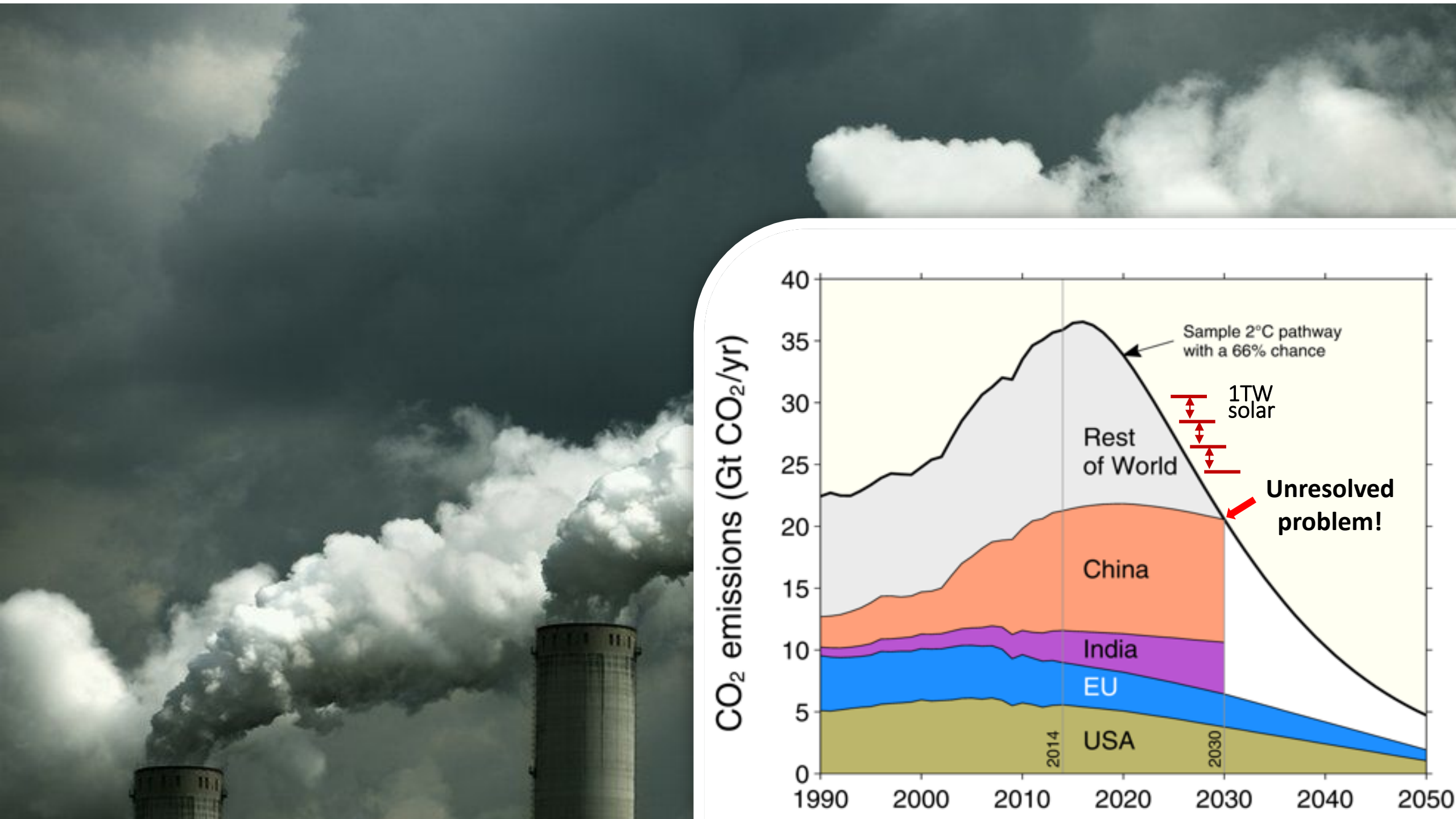
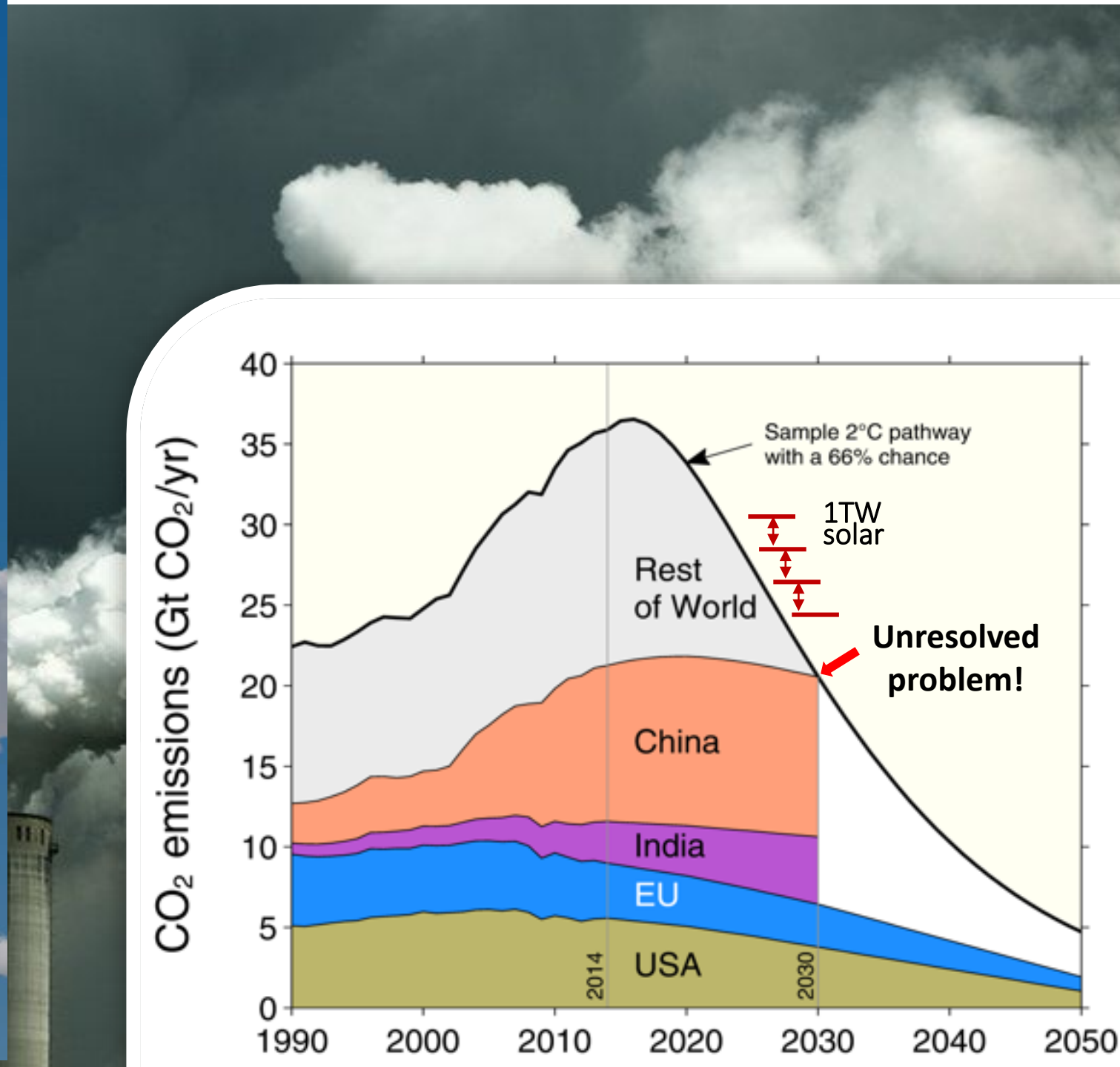



CO_2 emissions (Gt CO_2/yr)
40
35
30
25
20
15
10
5
0
1990
2000
2010
2020
2030
2040
2050
Sample 2°C pathway
with a 66% chance
1TW
solar
Rest
of World
China
India
EU
USA
2014
2030
Unresolved
problem!


Net Zero by 2050
A Roadmap for the Global Energy Sector
International Energy Agency
May 2021
iea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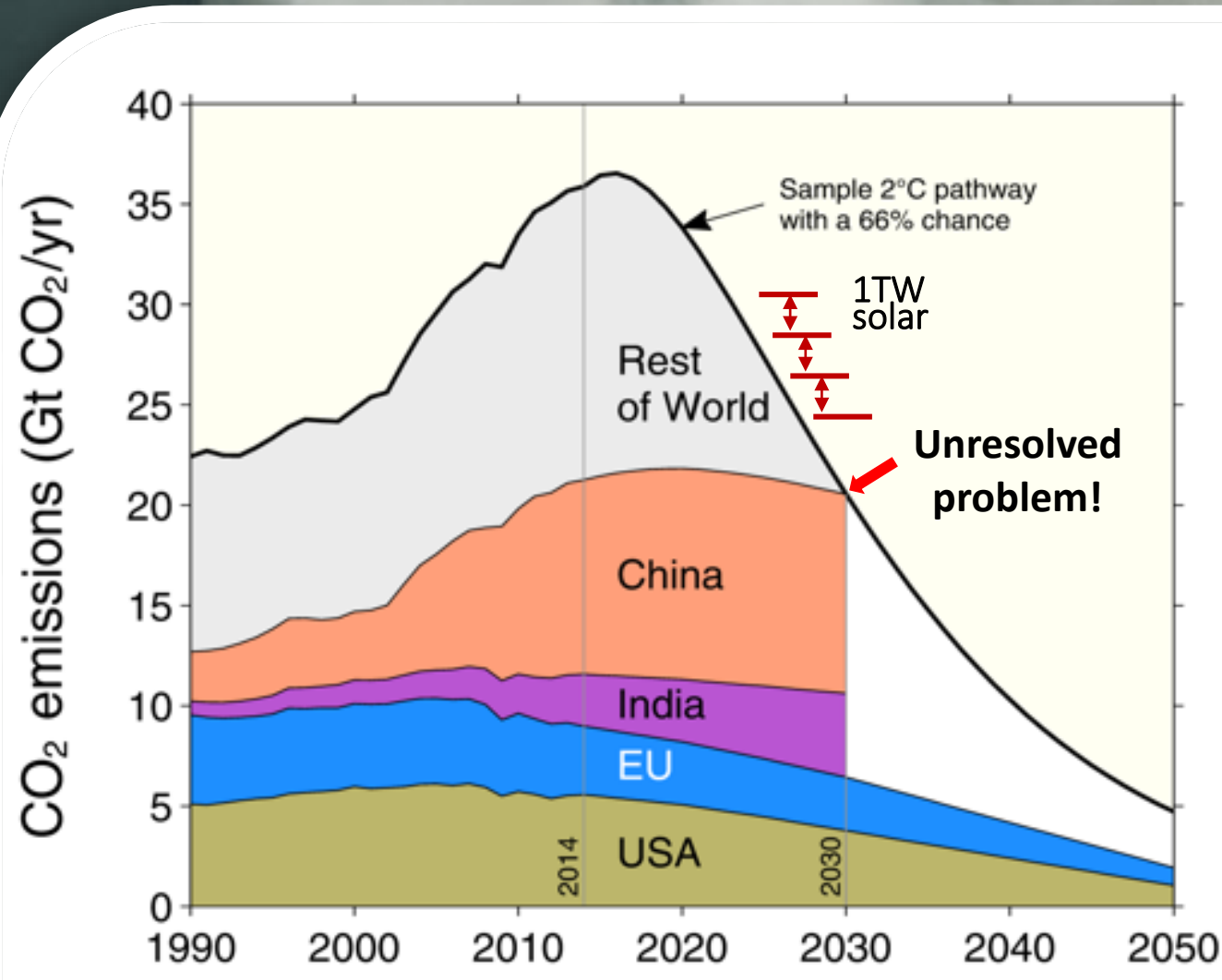


Net Zero by 2050

A Roadmap for the Global Energy Sector

International Energy Agency

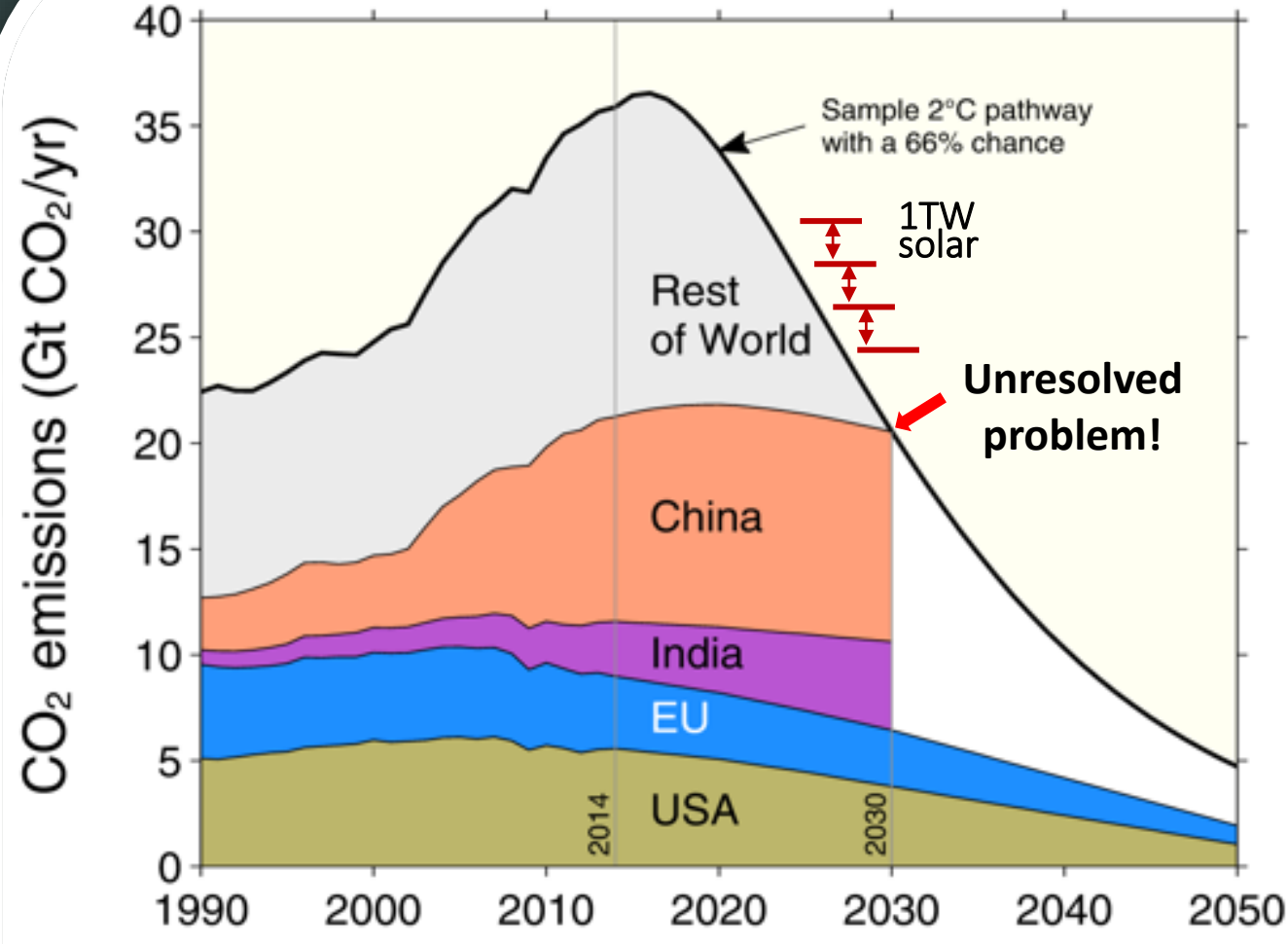
.Solar now cheapest electricity in history

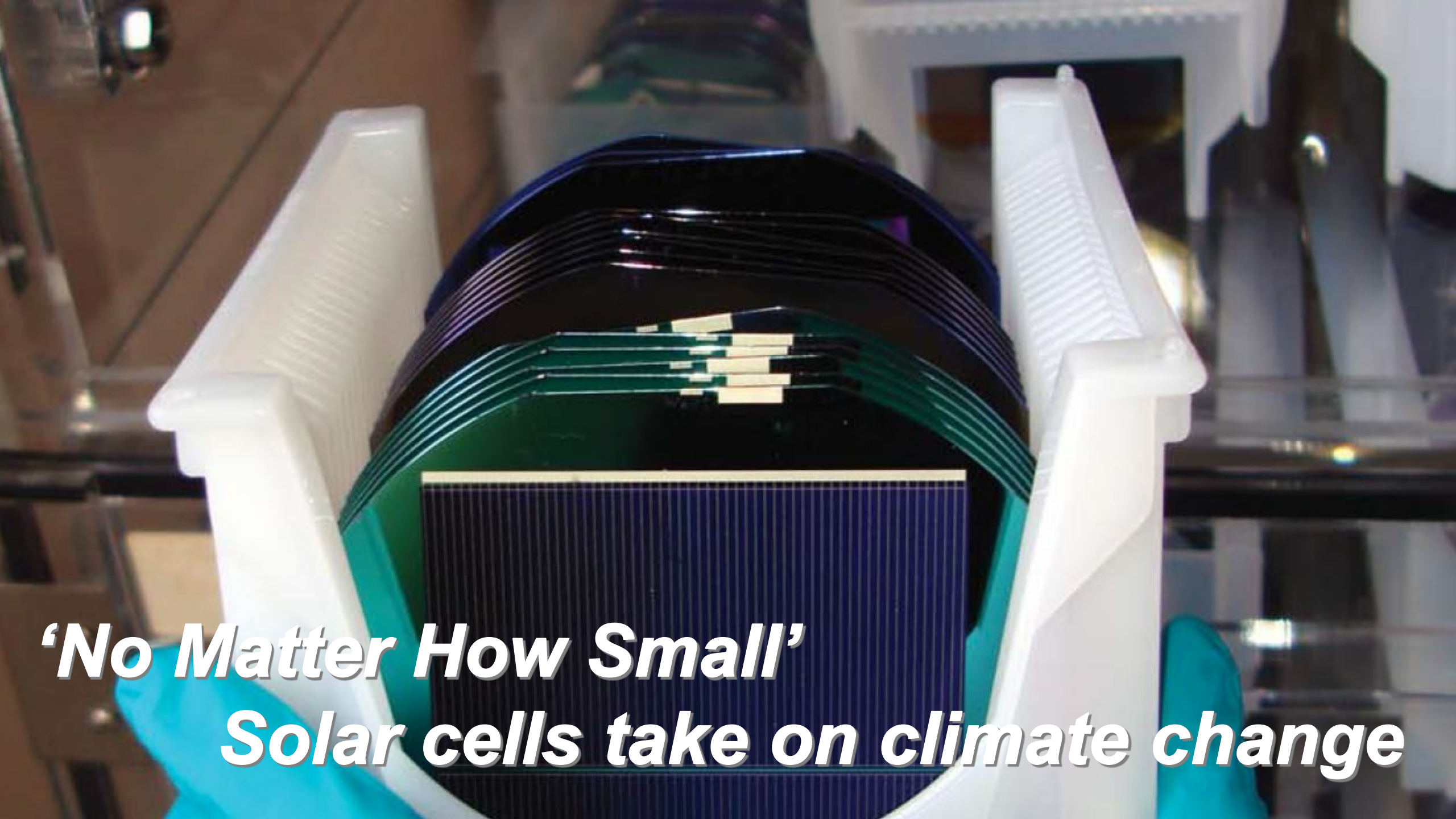
. 2020s decade of massive clean energy expansion

. PV capacity grows to 5TW by 2030

May 2021

iea

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