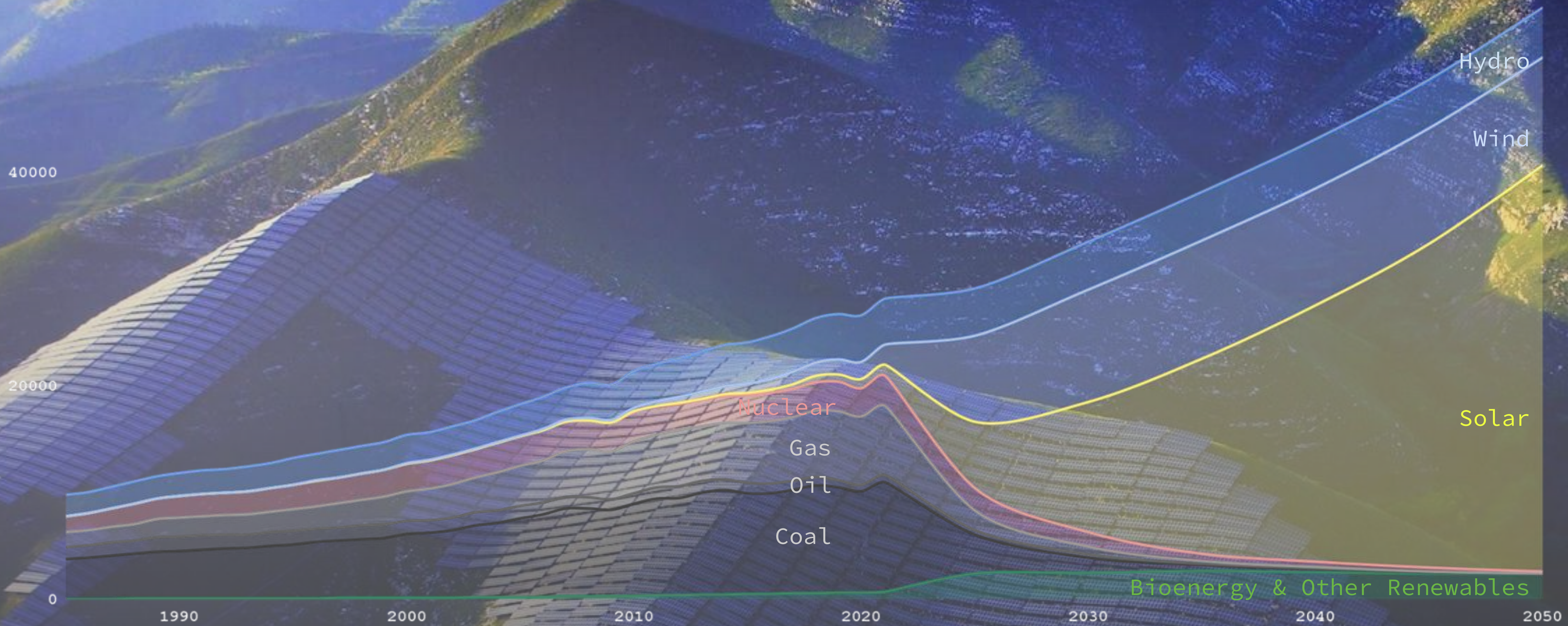




B I O S P H E R E
S O L A R

SETTING FAIR AND CIRCULAR STANDARDS IN THE SOLAR INDUSTRY AND MARKET

Global Electricity Generation [TWh]

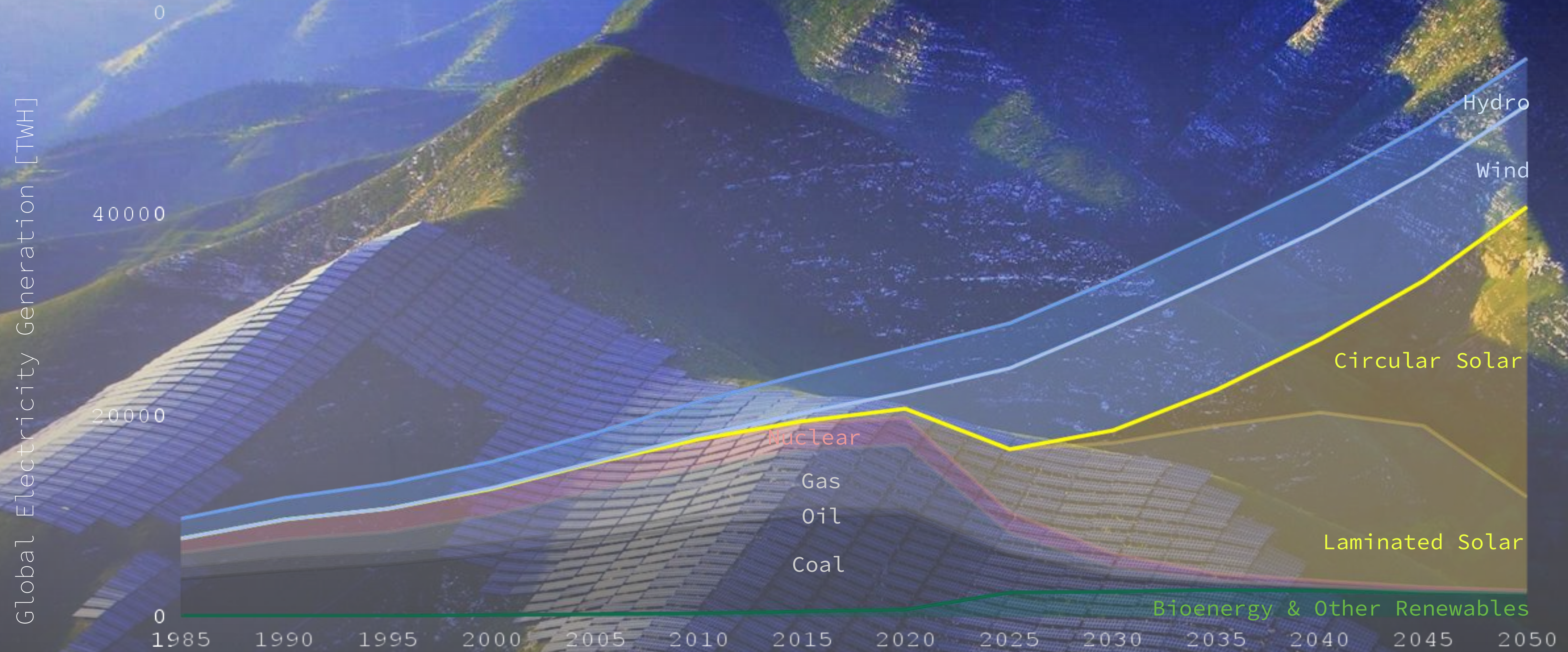


SRC: OUR WORLD IN DATA, BREYER ET AL. (2017)

ENERGY TRANSITION

THE MOST ACCURATE CLIMATE SCENARIOS PREDICT 69% PV ELECTRICITY BY 2050. JUST THE GLASS FOR ALL THESE PANELS WILL BE ENOUGH TO COVER THE LAND AREA OF SWEDEN*

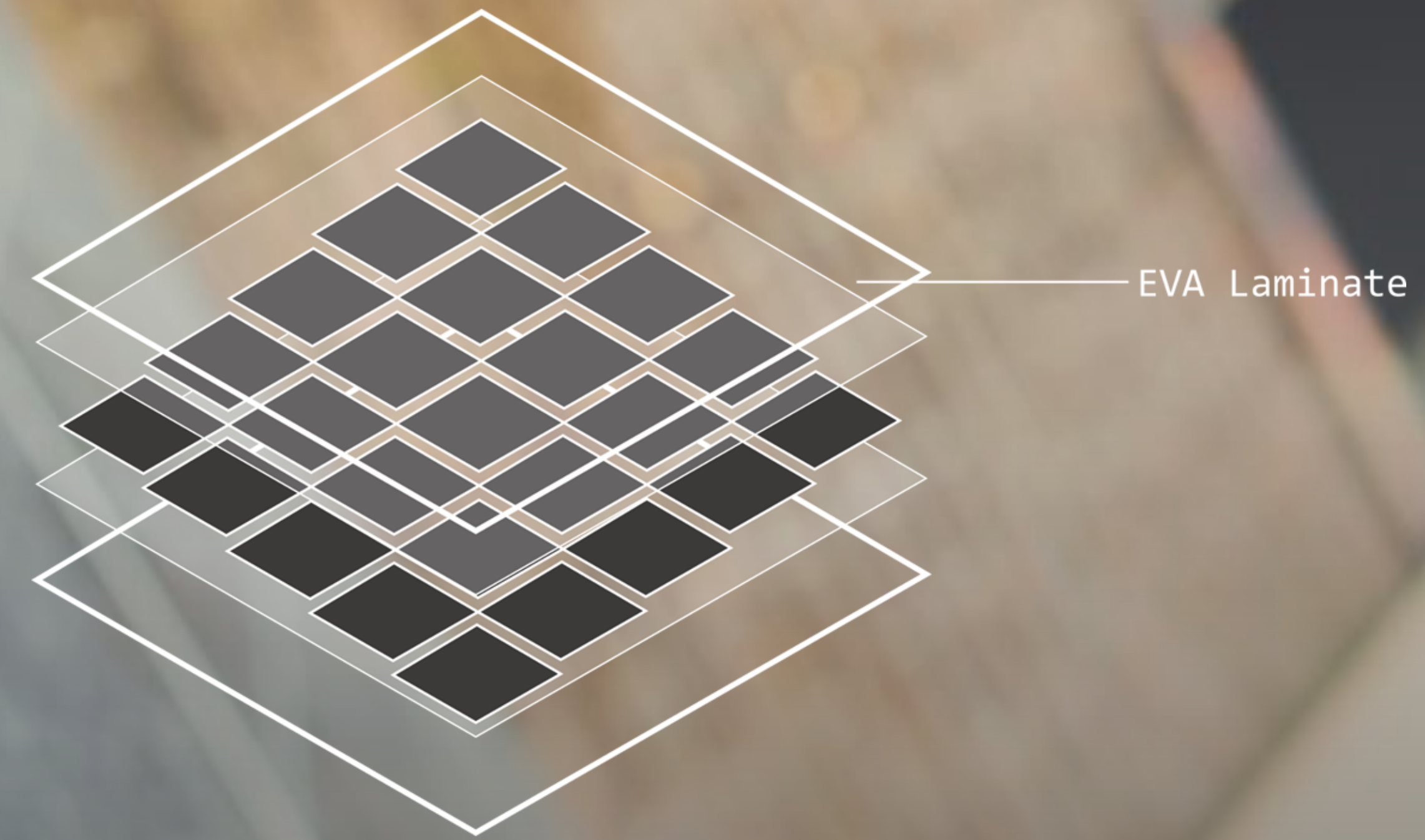
SRC: GOLDSCHMIDT (2021)



SRC: OUR WORLD IN DATA, BREYER ET AL. (2017)

WE NEED THE TIER 1s

IMPACT IS QUANTITY AND QUALITY. TO CREATE A REAL CIRCULAR TRANSITION IN THE SOLAR INDUSTRY, WE NEED 24-32TW OF INSTALLED CAPACITY BY 2050



THE TECHNOLOGY

ALL SOLAR PANELS TODAY ARE GLUED TOGETHER USING LAMINATION.



CO₂

FORCED LABOR & POLLUTION

€14b
ECONOMIC LOSS

29
Cu
COPPER

47
Ag
SILVER

50
Sn
TIN

14
Si
SILICON

DOWNCYCLING & WASTE

82
Pb
LEAD

51
Sb
ANTIMONY

NA
PFAS
PER_POLYFLUOR
ALKYL


ECOTOXICITY

THE PROBLEM

PV IS EITHER LANDFILLED OR DOWNCYCLED WORLDWIDE, AND THE UPSTREAM SUPPLY CHAIN IS PLAGUED BY FORCED LABOR AND POLLUTION



**COST OF
RECYCLING
€18 / panel**



**VALUE OF
RECOVERED
MATERIALS
€14 / panel**

**NO VIABLE BUSINESS CASE FOR
CIRCULAR SOLAR**

**COST ESTIMATES FOR RECYCLING ARE HIGHER THAN VALUE OF
MATERIAL, BECAUSE PANELS ARE NOT DESIGNED TO BE RECYCLED**

RETHINK

REUSE

REPAIR

REFURBISH

REMANUFACTURE

RECYCLE

DOWNCYCLE

LANDFILL

CIRCULAR DESIGN

FAIR LABOUR

OPEN
STANDARDS

LOW CO₂
FOOTPRINT

TRANSPARENT
VALUE CHAIN

FAIR VALUE CHAINS

OUR MISSION

MAKE CIRCULAR DESIGN AND FAIR, TRANSPARENT VALUE CHAINS THE GOLD STANDARD IN THE SOLAR INDUSTRY, **WITHOUT COMPROMISE**

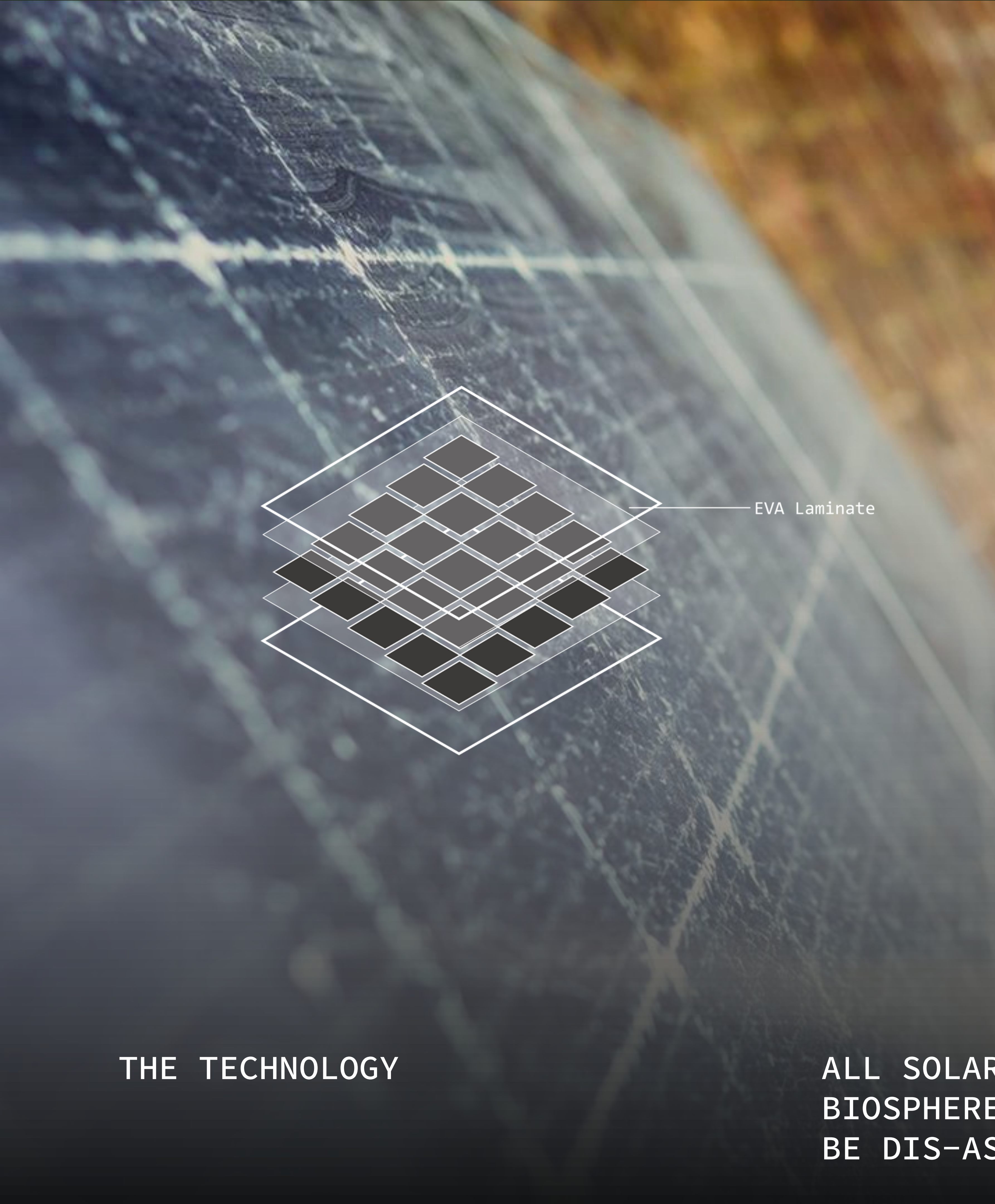
Mission and Vision



“Bringing circular and fair standards to the solar industry and market”

Biosphere Solar envisions a future where humanity has overcome its great challenges of climate change, biodiversity loss, and human/nature exploitation. A future where humanity is thriving alongside nature, inspired by the solarpunk movement. This world view is what Biosphere Solar strives to implement in every aspect of its work, from its legal structure to its culture and business models.

We strive to inspire by aligning our actions with our value, showcasing that this can lead to prosperity, equity and a thriving society.



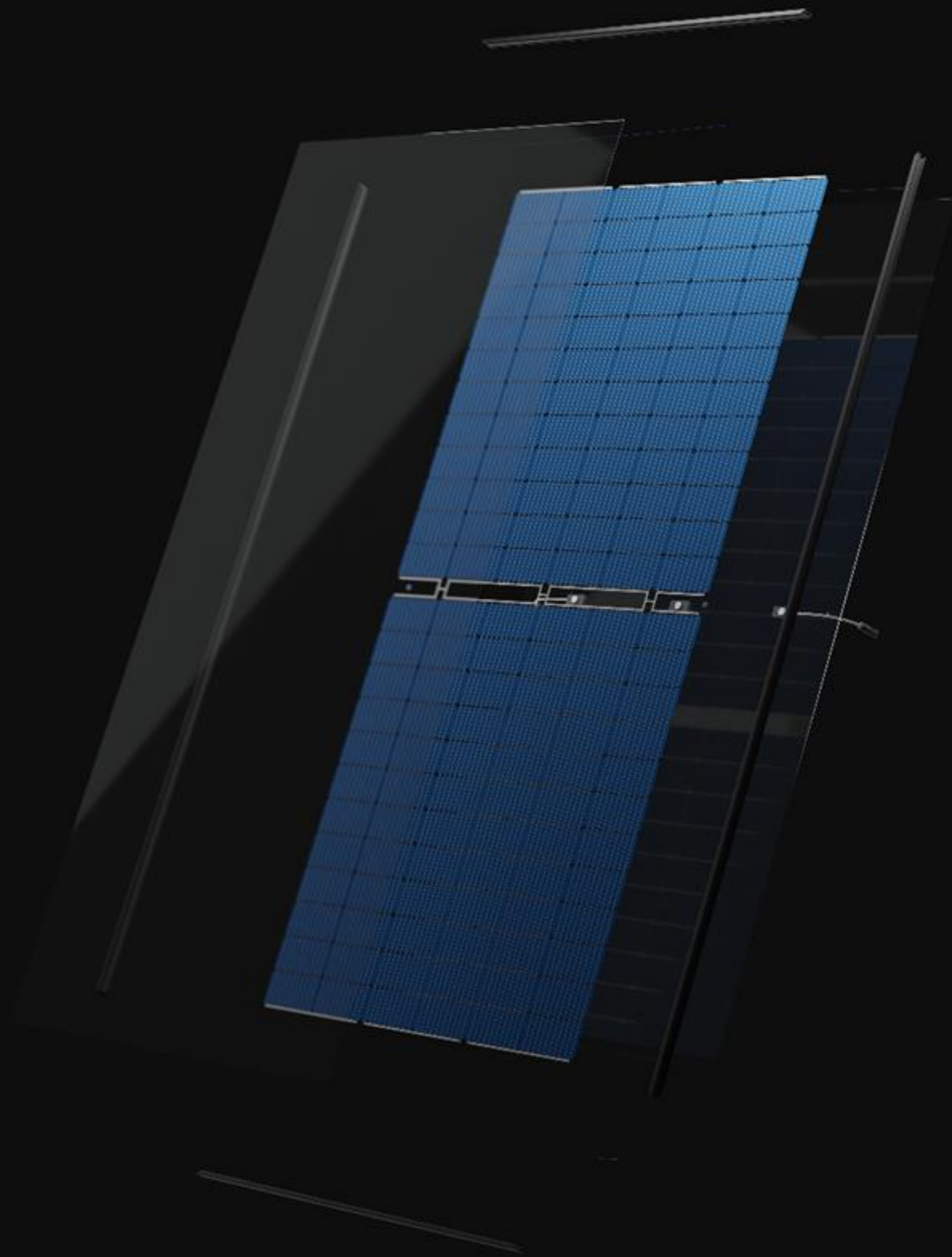
EVA Laminate



PIB Edge Seal

THE TECHNOLOGY

ALL SOLAR PANELS TODAY ARE GLUED TOGETHER USING LAMINATION. BIOSPHERE SOLAR USES AN EDGE SEAL ONLY, MEANING THE PANELS CAN BE DIS-ASSEMBLED AT END OF LIFE



The Products

Currently in production

V1.4 108 TOPCON



V1.4 120 TOPCON



V1.4 60 IBC



Power output	430W _p	480W _p	392W _p
Cell technology	TOPCon Bifacial	TOPCon Bifacial	IBC
Efficiency	21.17%	21.17%	21.14%
Product warranty	10 years	10 years	10 years
Output warranty	30 years	30 years	30 years
Country of production	China	China	Netherlands
Certifications	None	None	None
Supply chain transparency	Cell-level	Cell-level	Material-level
End-of-life	Take-back agreement	Take-back agreement	Take-back agreement
Customisations	Semi-transparent	Semi-transparent	Coloured, Semi-transparent



**COSTS OF
RECYCLING
€12 / panel**



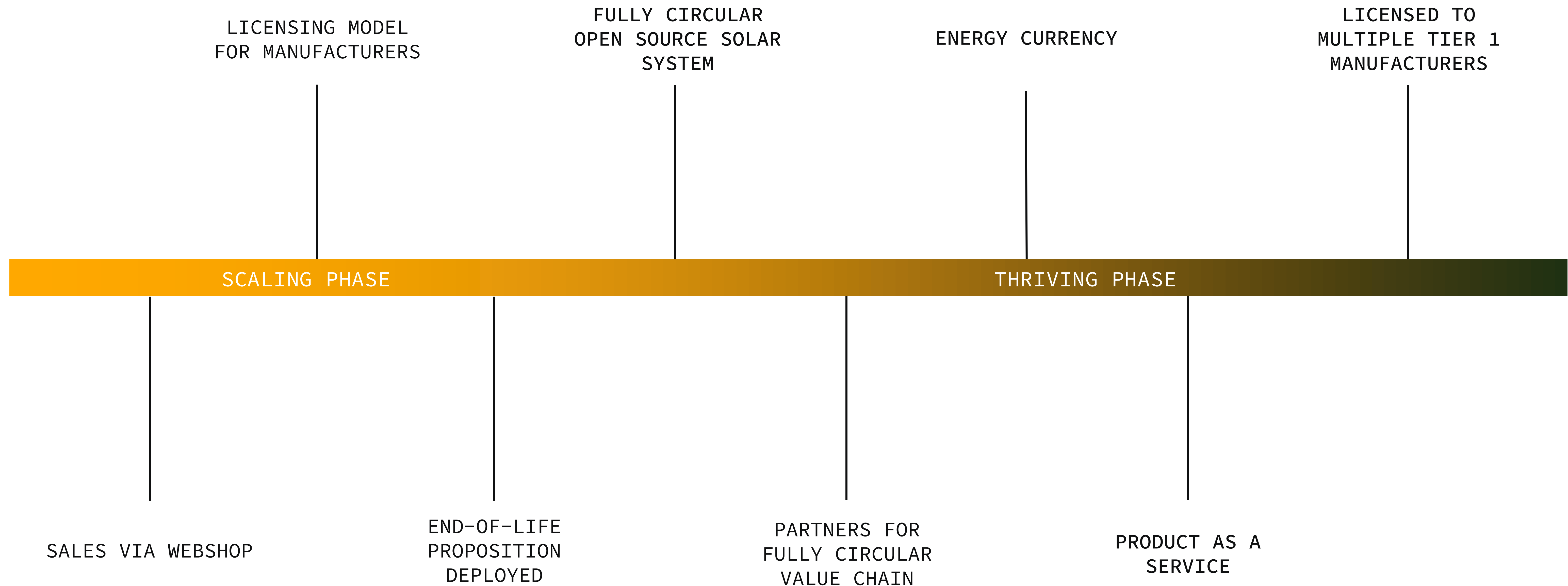
**VALUE OF
RECOVERED
MATERIALS
€14 / panel**

RECYCLING BECOMES VIABLE

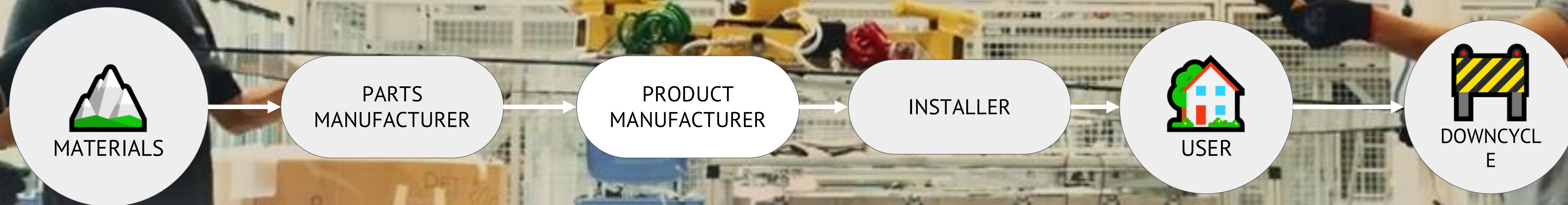
OUR PANELS DO NOT REQUIRE CHEMICAL OR THERMAL PROCESSES, AND PARTS CAN EVEN BE FULLY RE-USED (EXACT COST REDUCTION TBV)

Market and Industry Moonshot

The future of Biosphere Solar if there were no brakes



Biosphere Solar is starting simple, but aims to bring a disruptive sustainable proposition to the market and industry



THE VALUE CHAIN

WITH CIRCULARISE, BIOSPHERE IS DEVELOPING THE SYSTEMS NEEDED FOR SUPPLY CHAIN TRACEABILITY. FURTHER VALIDATION OF THIS CHAIN IS IN PROGRESS



THE VALUE CHAIN

WITH CIRCULARISE BIOSPHERE OFFERS FULL SUPPLY-CHAIN TRACEABILITY. AT END OF LIFE, BIOSPHERE ENSURES RE-USE, REMANUFACTURE/UPGRADE & RECYCLING INTO NEW SOLAR PANELS.



Green Village



AMS Institute



Beach Grid

Biosphere Solar has completed 10+ projects in 3 countries.



PRODUCTION LOCATIONS

BIOSPHERE SOLAR MASS PRODUCES IN CHINA WITH A CAPACITY OF 2GW AND HAS 2 PRODUCTION LOCATIONS IN EUROPE FOR CUSTOM MODULES



LIAM McCLAIN
Videography



IAN LIN
Project
Manager



SIEMEN
BRINKSMA
Operations



PERINE FLEURY
Network &
Finance



GERMAIN
MATAIX
Commerce



ZOLA FUNG-A-JOU
Production
Engineer



ALBERTO POLI
Solar
Engineer



MONA T.HASSEL
Chemical
Engineer



BONNA
NEWMAN
CEO
Lightyear



MARCELLO
PASSARO
Solar De-
Risk
Consultant



ARUN RAMA-
KRISHNAN
RCT
Solutions



MARC
KLEFFMANN
COO
Roofpower
NL BV

THE TEAM

THE BIOSPHERE SOLAR TEAM AND ADVISORS COVER ALL THE NECESSARY TECHNICAL AND BUSINESS DEVELOPMENT KNOW-HOW

INDUSTRY



RESEARCH



OTHER



We Are Stewards



THE ECOSYSTEM

BIOSPHERE SOLAR HAS BUILT A LARGE NETWORK OF PARTNERS WORKING ON THE MISSION OF CHANGING THE MARKET AND INDUSTRY



THANKS FOR YOUR ATTENTION! COME VISIT US AT MAASBOULEVARD 100 IN ROTTERDAM!
TEAM@BIOSPHERE.SOLAR | +31651548076