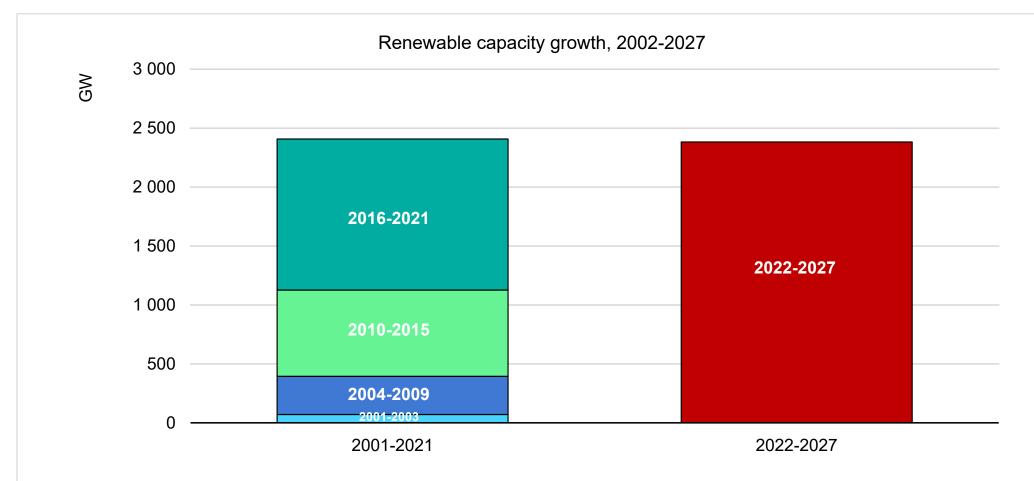


## Renewables 2022

Heymi Bahar 30 January 2022

#### It took 20 years to achieve renewables growth in the next five years

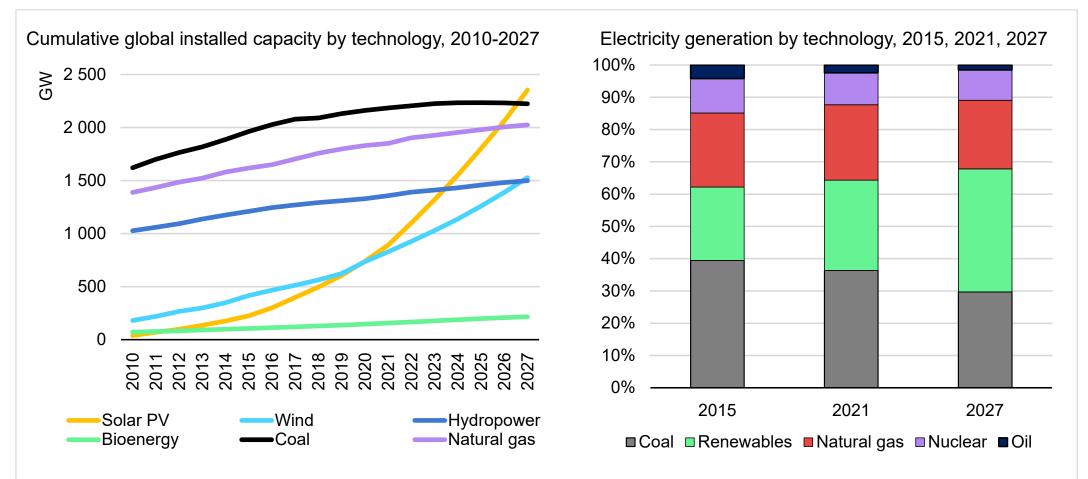




Renewables will expand by 2400 GW by 2027, equal to the entire installed capacity of China.

#### Solar PV becomes the largest installed capacity surpassing coal

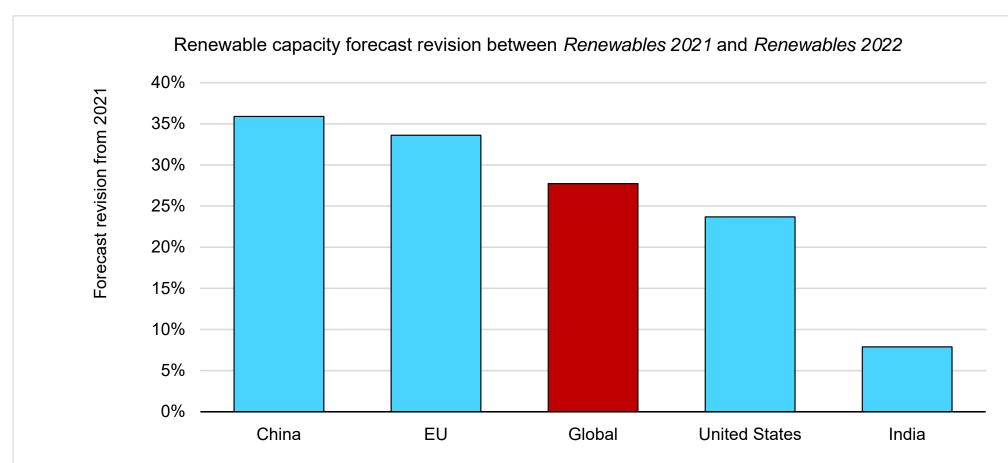




Cumulative solar PV capacity almost triples 1500 GW surpassing natural gas by 2026 and coal by 2027 ...And renewable electricity generation surpass coal by early 2025

#### Energy security and new policies lead to the largest ever forecast revision

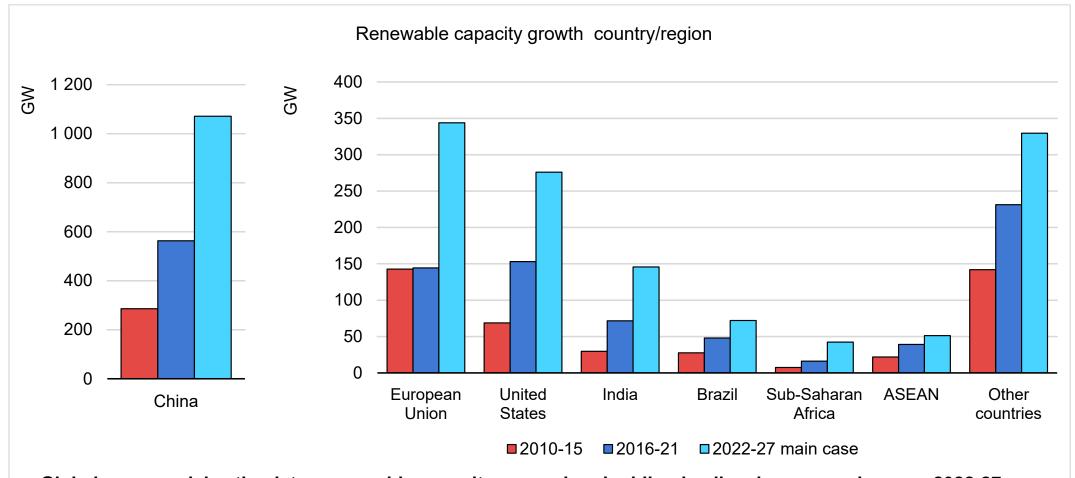




China's 14<sup>th</sup> 5-year plan, REPower EU and member country policies, US Inflation Reduction Act and India's ambitious targets and policy improvements drive more optimistic forecast proving the effectiveness of good policies

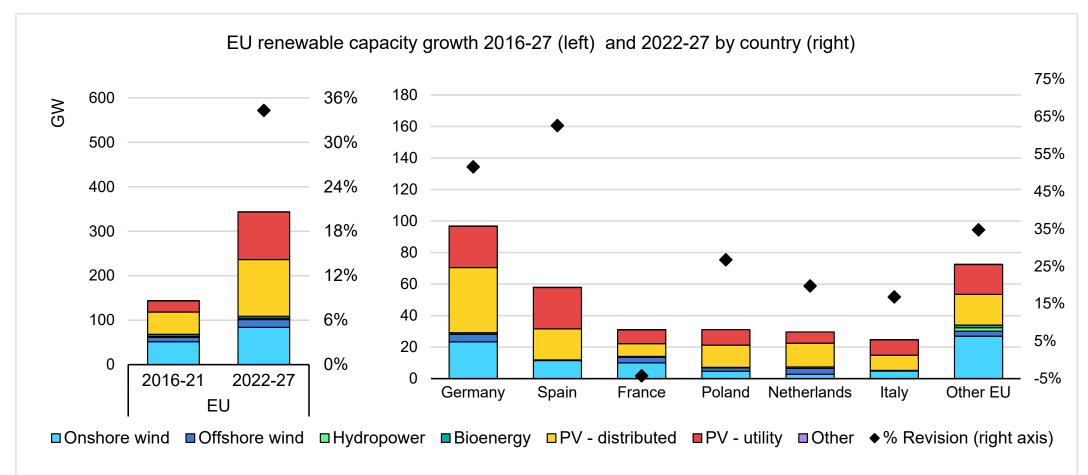
#### Global renewable capacity growth doubles in the next five years





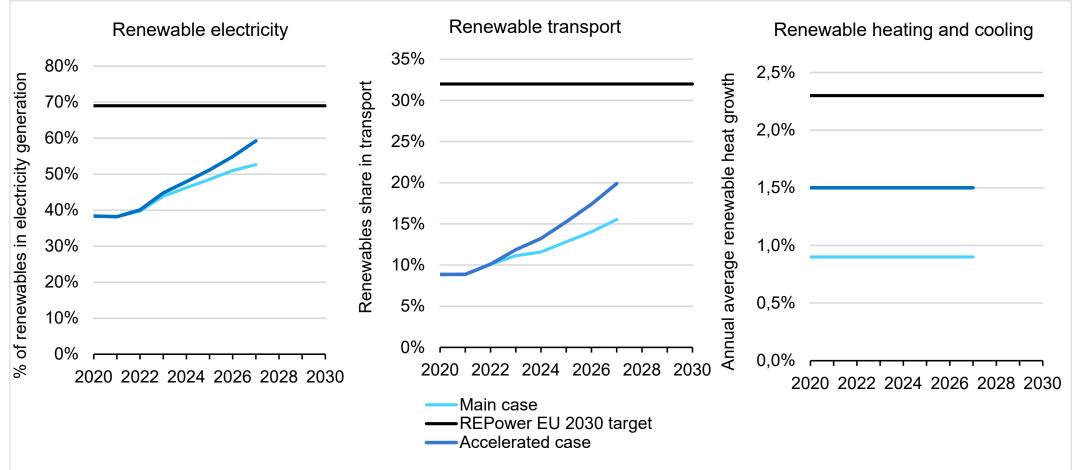
Global energy crisis stimulates renewable capacity expansion doubling in all major economies over 2022-27 as countries seek to improve energy security & diversification and take advantage of cheap renewables

#### EU: Energy security concerns accelerate action towards climate goals |



The EU's upwards revision is a result of specific policy actions that raise renewable ambitions, increase financial support, and facilitate permitting approvals and grid connections.

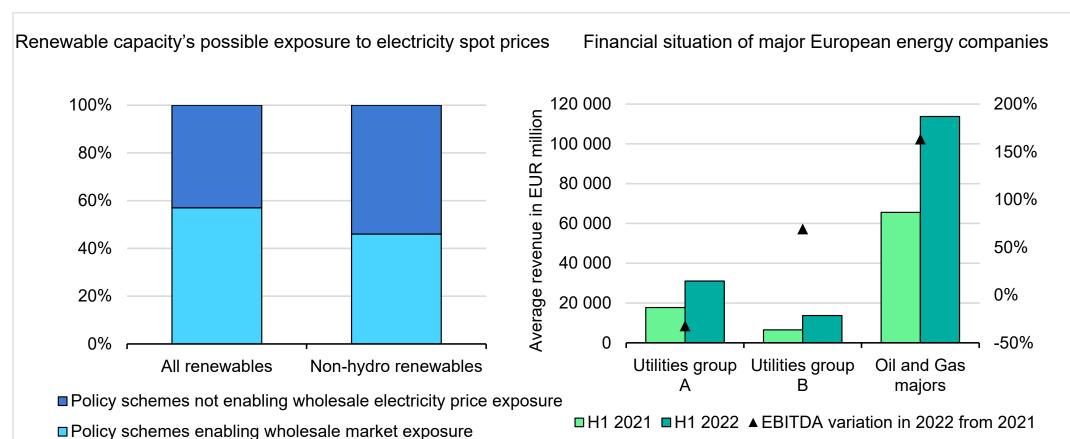
#### EU needs to step up policies to be on track with REPowerEU proposal | Q



With existing policies & regulations, EU is behind proposed REPowerEU goals in all sectors. Permitting challenges for electricity, limited biofuel incentives for transport and lack of support for heat hampers faster expansion

#### Are renewables making windfall profits in Europe?

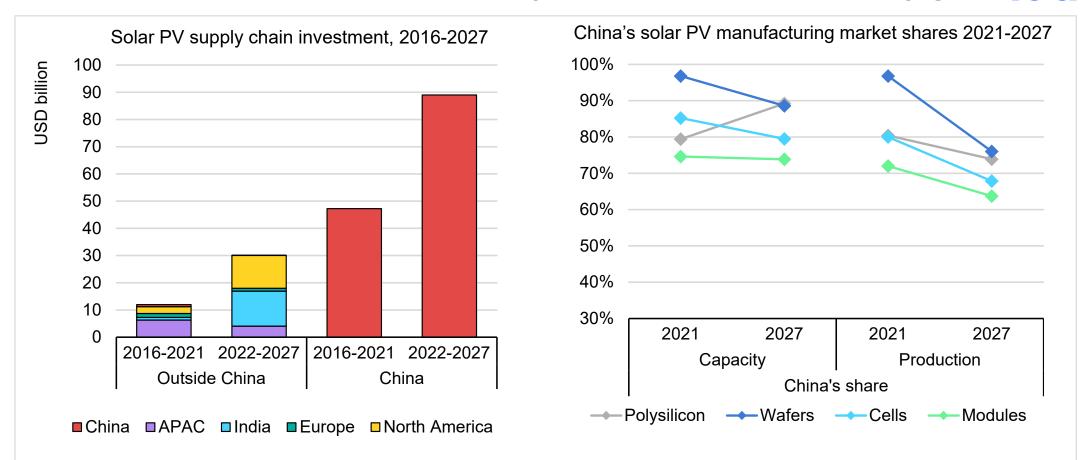




While policies enable more than half renewable capacity to receive high electricity price, only a small portion actually sells directly in the wholesale power market due to long-term bilateral contracts and hedging strategies.

#### Towards a more diversified PV supply chain & a possible supply glut

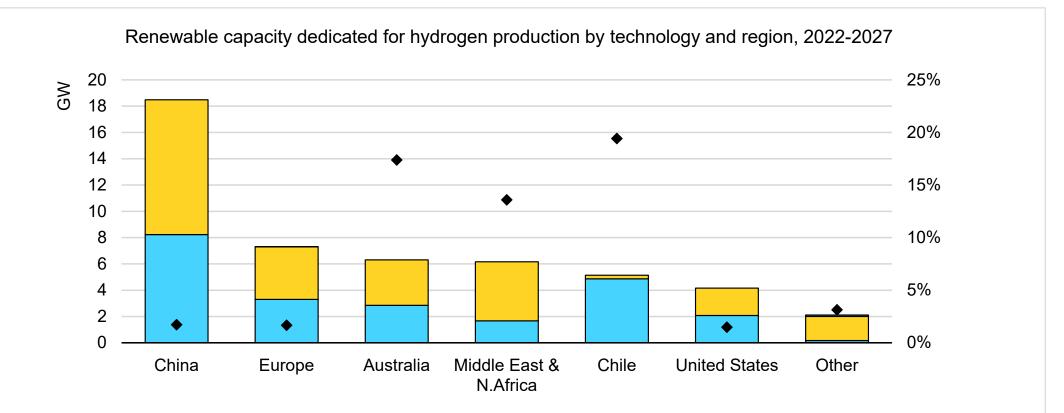




New policy support in India (PLI) and the United States (IRA) will triple PV manufacturing investment outside China, increasing geographical diversification. However, China will continue to dominate investing triple than the rest.

#### Hydrogen production emerges as a new driver for solar PV and wind





Renewable capacity dedicated to hydrogen production grows 100-fold by 50 GW by 2027 accounting for nearly 2% of our forecast growth over 2022-27 geographically diversified across all continents.

♦ % total renewable capacity growth (right axis)

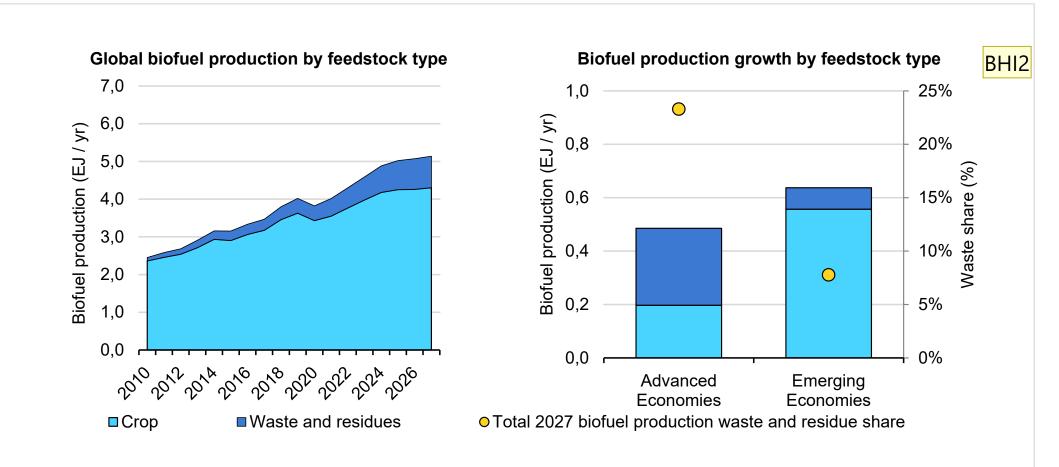
Onshore wind

Offshore wind

■Solar PV

#### Advanced economies drive growth of waste and residue biofuels





Greenhouse gas reduction policies in the US and Europe are driving demand for waste and residue biofuels which account for 1/3 of total growth. However action is required to prevent a waste feedstock supply crunch

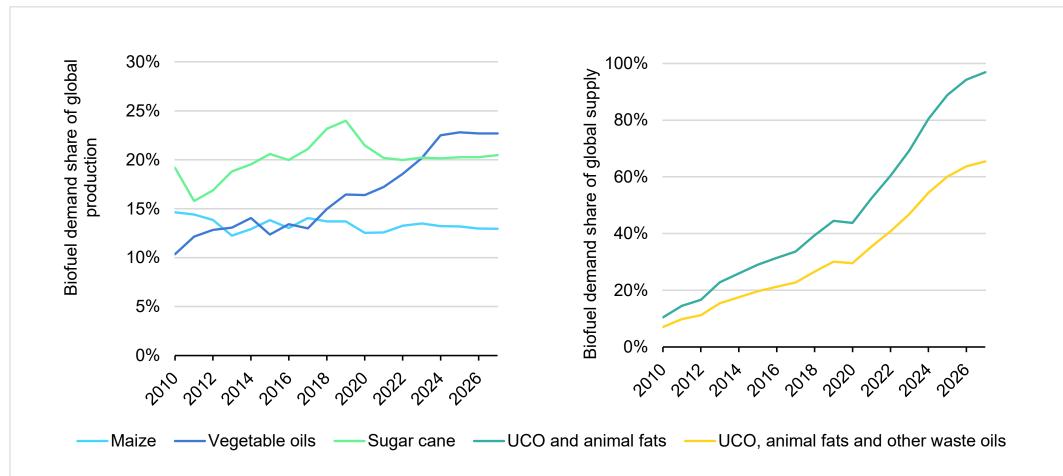
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BAHAR Heymi, IEA/EMS/RED; 06/12/2022

#### Biofuels are facing a looming supply crunch

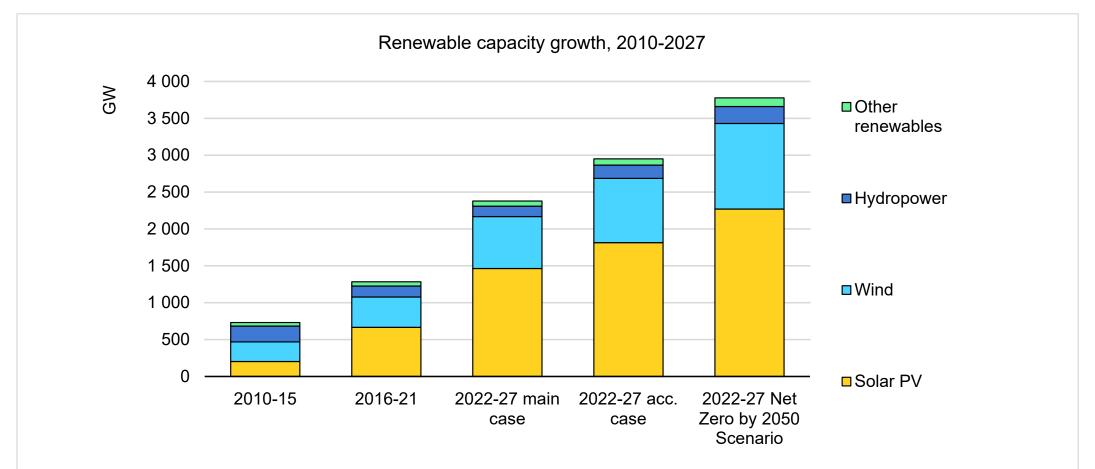




Production of biofuels necessary for the energy transition may slow as demand for vegetable oil and waste and residue oils reaches supply limits by 2027. Bio-based diesels and biojet fuels are most at risk.

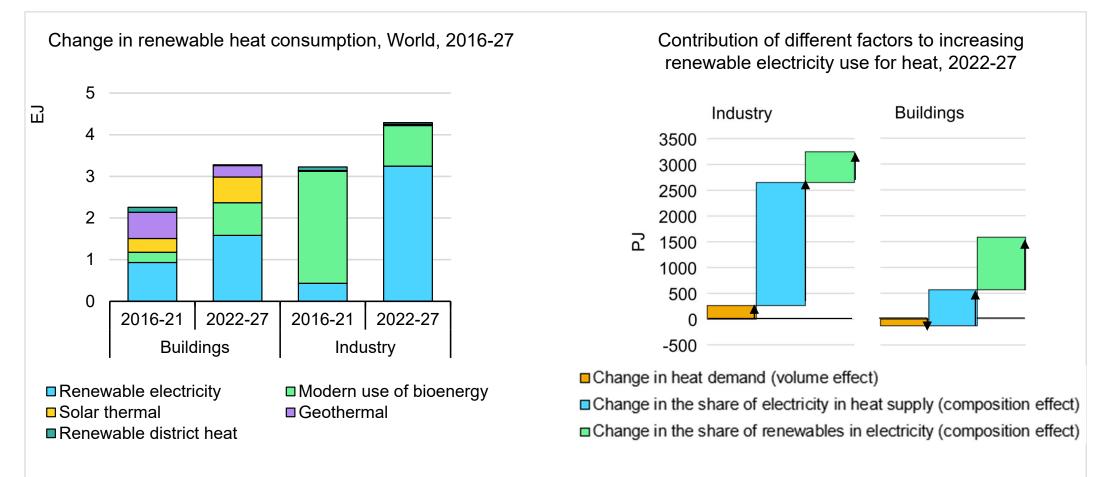
#### Improved policies can further narrow the gap with net zero by 2050





Faster permitting, addressing grid and system integration issues and enabling affordable financing in developing countries could unlock 25% additional capacity in the accelerated case narrowing the gap with net zero by 2050

### Electricity used for heating contributes most to renewable heat uptake



Rising shares of renewables in electricity, heat electrification and heat pump growth in China, EU & USA boost renewable heat uptake, while improved biomass stoves displace traditional use of biomass in China, India & sub-Saharan Africa.



# Q&A

