



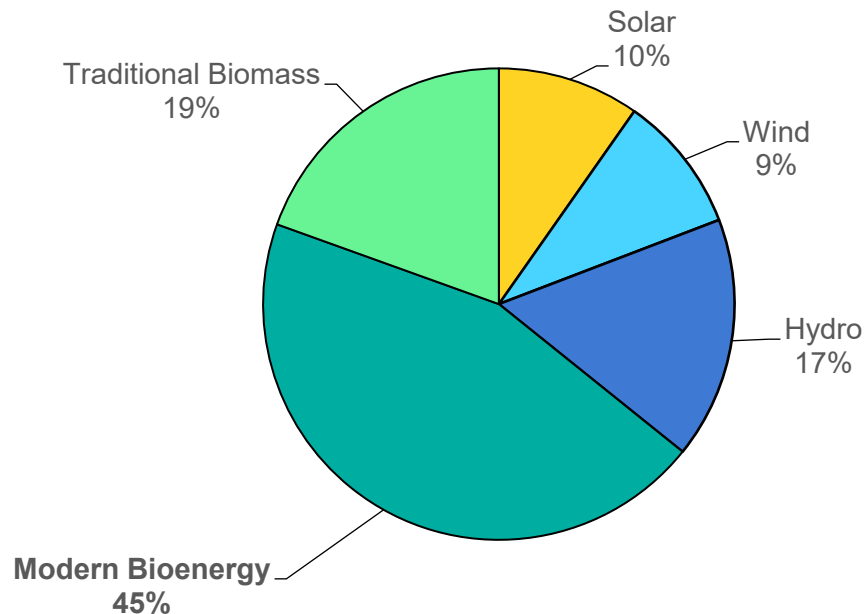
Role of Bioenergy up to 2050

Dr. Paolo Frankl, Head Renewable Energy Division

IEA Bioenergy TCP ExCo97 Workshop *Sustainable Biomass Availability and Mobilisation*, 17 June 2026

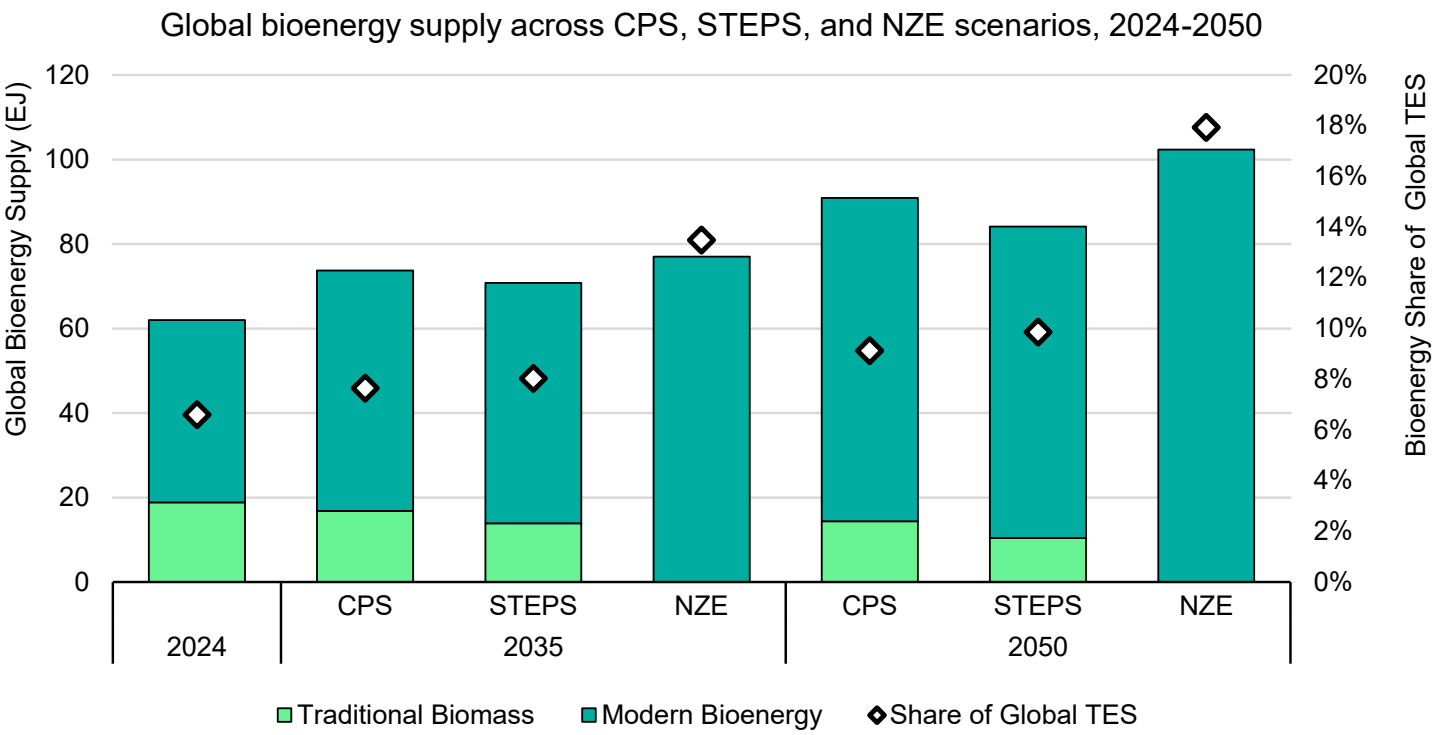
Modern bioenergy is the hidden giant of renewable energy

Share of total renewable energy supply, 2024



While solar and wind are the fastest expanding technologies, modern, sustainable bioenergy accounts for more than half of all renewable energy supply today.

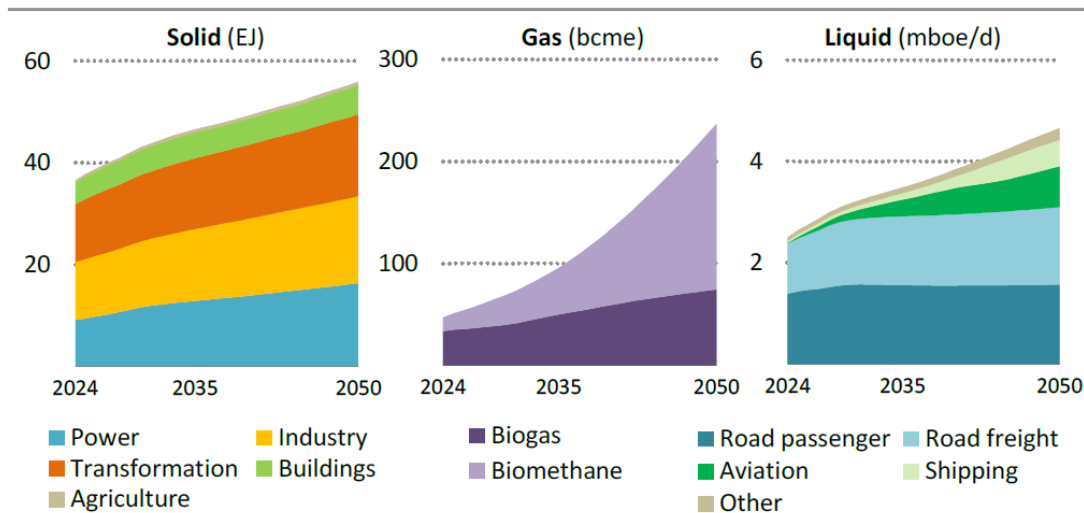
Modern bioenergy continues to grow in all scenarios



Given its compatibility with existing infrastructure and global availability modern bioenergy expands across all sectors in all IEA scenarios.

All forms of modern bioenergy are set to grow

Modern bioenergy demand by type and sector in the WEO STEPS to 2050



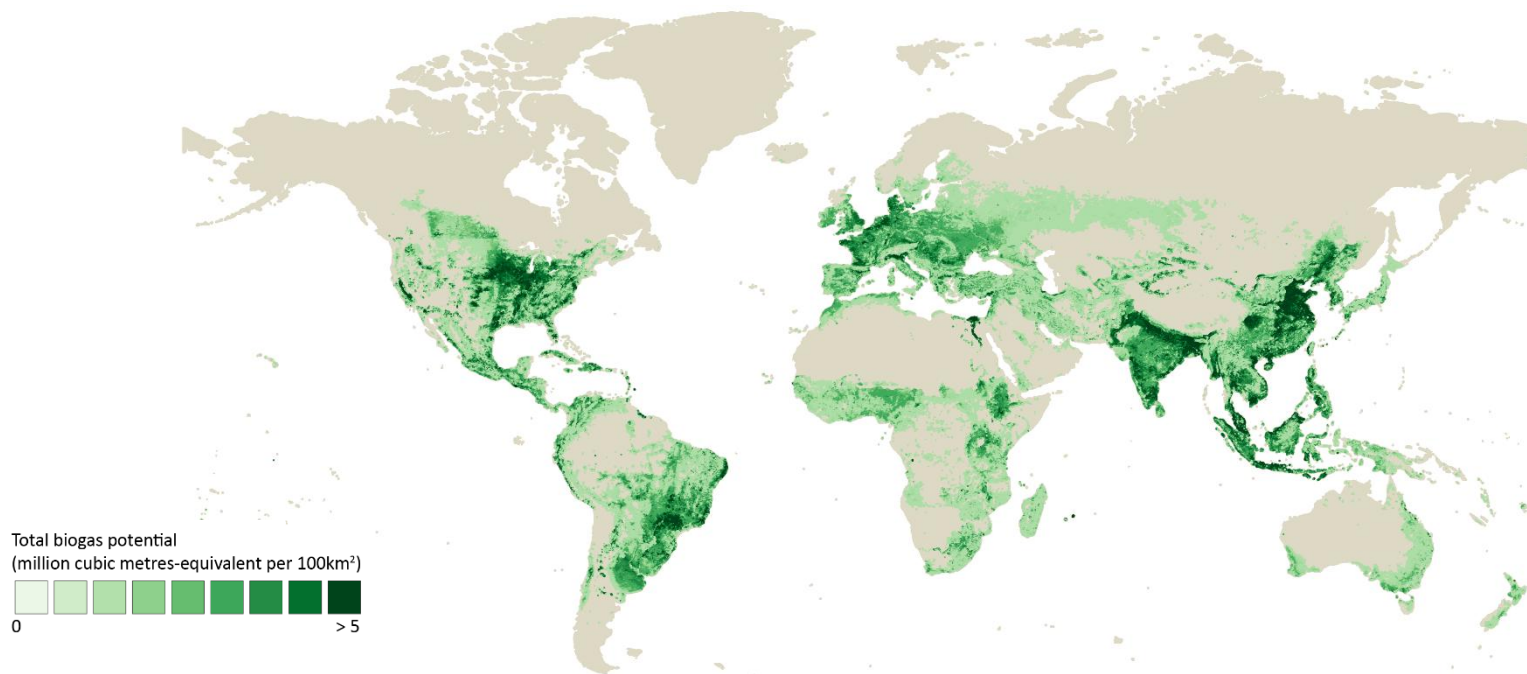
IEA. CC BY 4.0.

Notes: EJ = exajoule; bcme = billion cubic metres of natural gas equivalent; mboe/d = million barrels of oil equivalent per day. Transformation is the energy consumed converting primary bioenergy into usable final forms.

While solid bioenergy remains the most used of modern bioenergy, biogas and biomethane is the fastest growing to 2050 thanks to its versatility in end-uses and multiple advantages.

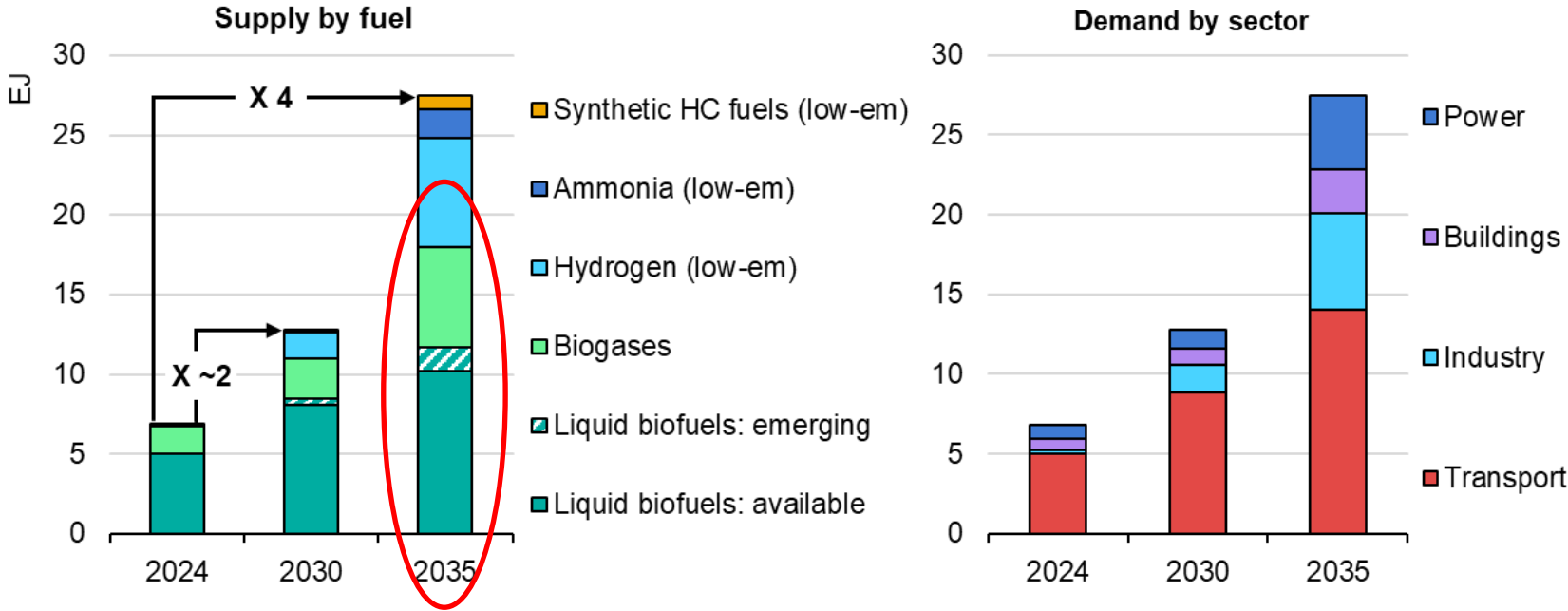
Biogases: a homegrown resource that can be produced in many countries

Geographic distribution of biogas and biomethane resources globally, in 2024



Nearly 1 trillion cubic metres could be produced sustainably each year – equivalent to 25% of the world's annual demand for natural gas today. Around 80% of this potential lies in emerging markets.

Sustainable fuel supply and demand in the pledge case, 2024-2035



Depending on country and regional circumstances the sustainable fuels mix can vary from global averages.

