



Introduction to IEA Bioenergy

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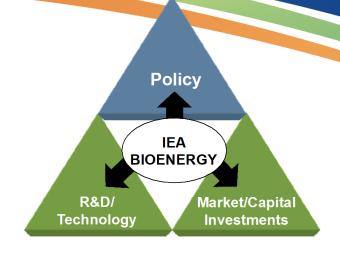
Dina Bacovsky, Chair

Polish TCP Co-ordination Day, 23/03/2023

The IEA Bioenergy Technology Collaboration Programme (TCP) is organised under the auspices of the International Energy Agency (IEA) but is functionally and legally autonomous. Views, findings and publications of the IEA Bioenergy TCP do not necessarily represent the views or policies of the IEA Secretariat or its individual member countries.

IEA Bioenergy

Technology Collaboration Programme (TCP), functioning within a framework created by the International Energy Agency (IEA)



Goal:

- International collaboration and info exchange on bioenergy research, technology development, demonstration, markets, and policy analysis
- Facilitate the commercialization and market deployment of sustainable bioenergy systems = **climate positive**, **environmentally sound**, **socially acceptable** and **cost-competitive** (incl. external costs)

25 members: 14 European countries (including Norway) + EC, USA, Canada, Brazil, India, China, Japan, Korea, Australia, New Zealand, South Africa

Work programme carried out through **Tasks** and **Special Projects**, covering the full value chain from feedstock to final energy product



Bioenergy ...

- is the largest source of renewable energy today
- is **versatile**: heat, power, transport services
- provides substantial GHG emission savings if done responsibly
- diversifies energy sources and improves energy supply security
- provides income through regional biomass supply chains

but

cannot achieve decarbonisation of our energy system on its own

 \Rightarrow complements other renewable energy sources & increases in energy efficiency & reductions in energy demand



Contribution to climate change mitigation

Bioenergy contributes to climate change mitigation when:

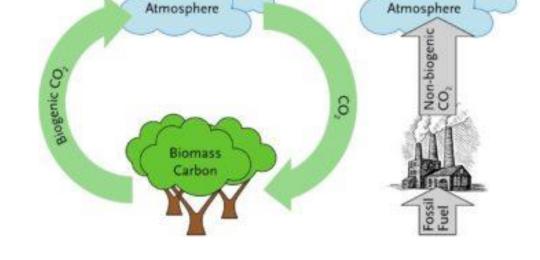
• Biomass is grown **sustainably** (from sustainably managed landscapes) and/or based on **waste/residues**

• Converted to energy products efficiently (often together with other

biobased products)

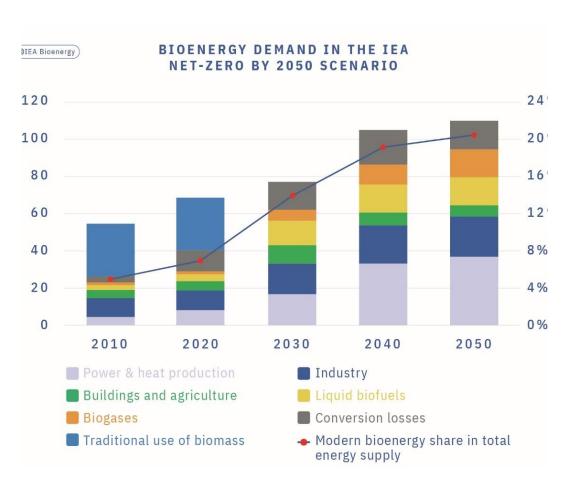
Used to displace fossil fuels

Bio-CCS/CCU can add to that





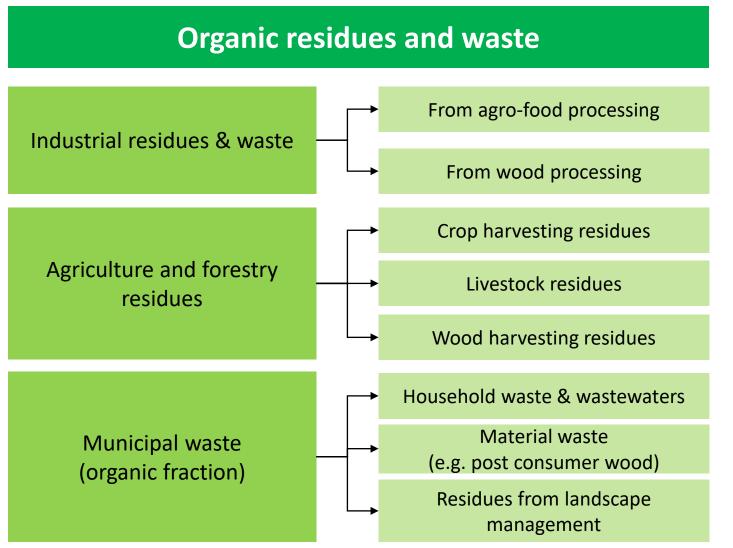
Towards ,net zero' - important role of bioenergy



- bioenergy provides one-fifth of energy supply in IEA's net-zero by 2050 scenario
- Traditional use of biomass to be phased out as soon as possible
- Modern bioenergy supply to triple from 2020 to 2050 (partly replacing traditional use)
- All decarbonisation scenarios have increased deployment of sustainable bioenergy
- Negative emissions through BECCS



Multiple sources of biomass - for energy & biobased economy



Forestry

Harvests from natural & semi-natural forests

Harvests from forest plantations

Agriculture

Sugar, starch and oilseed crops

Lignocellulosic crops and short rotation coppice

Aquaculture (algae)

Source: IEA ETP 2017



Sustainability is key

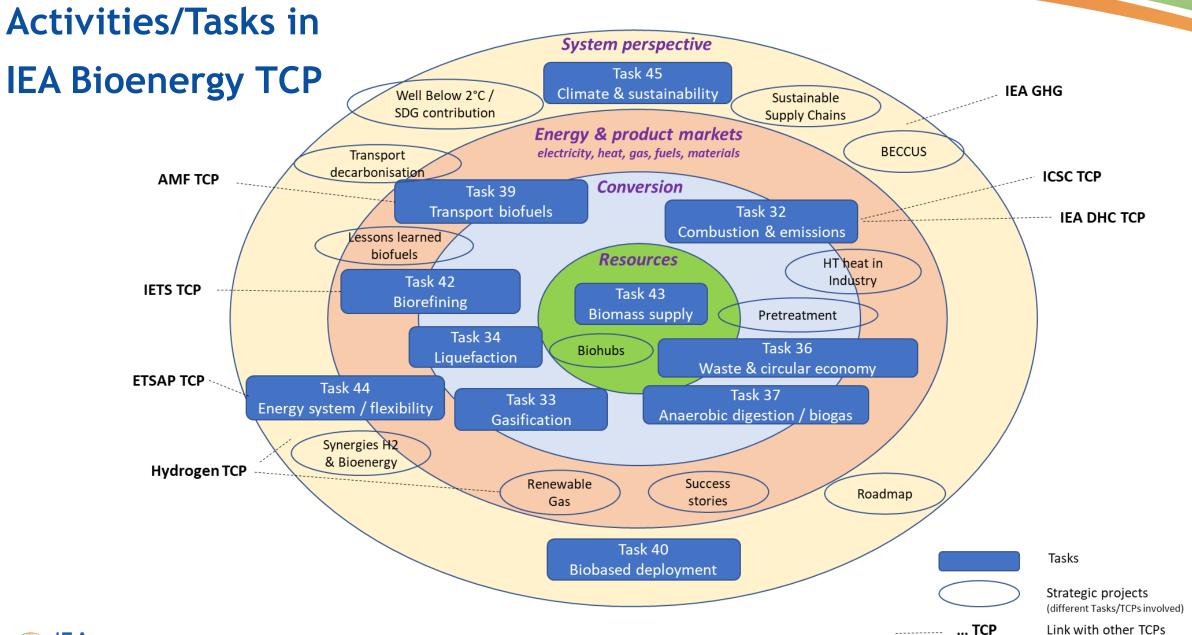
Sustainable forest management Sustainable agricultural practice Sustainable landscape management

- → Biodiversity safeguards
- → Attention for carbon sinks, preserving carbon stocks
- → Healthy soils (nutrients & organic matter)
- → Social opportunities are part of sustainability

Waste treatment & valorisation

+ food/feed & higher value materials have higher priority than energy







Membership fees

The total cost of the TCP is shared by all members, allowing a reasonable price for an excellent output. The cost details are as follows:

- Each member pays a fixed annual contribution of US\$6,700 to cover the ExCo administration (Secretariat, fund administration, website, Newsletter, etc.)
- In addition, each member chooses the Tasks it will join (at least one). The annual cost for each Task ranges from US\$15,000 to US\$18,500



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