

Activities of the World Bioenergy Association and Experiences with Bioenergy Development in Austria

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About the World Bioenergy Association



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- Membership organisation: bioenergy associations, industries, experts
- Mission: promote the sustainable use of bioenergy
- Our role: information platform, platform for contacts
 - Bioenergy International Magazine
 - Webinars
 - propellets.africa website
- We represent Bioenergy in International organisations and advise policy makers
- We do not participate in economic activities but help to enable them

Activities related to industrial use of bioenergy



- Advocacy and public relation activities for the sector
- Strategy Workshops
- Next activity: Strategy workshop on developing stakeholder relationships for the industrial pellet sector Amsterdam, 23-24.1.2024

Activities to support modern use of Bioenergy in developing economies



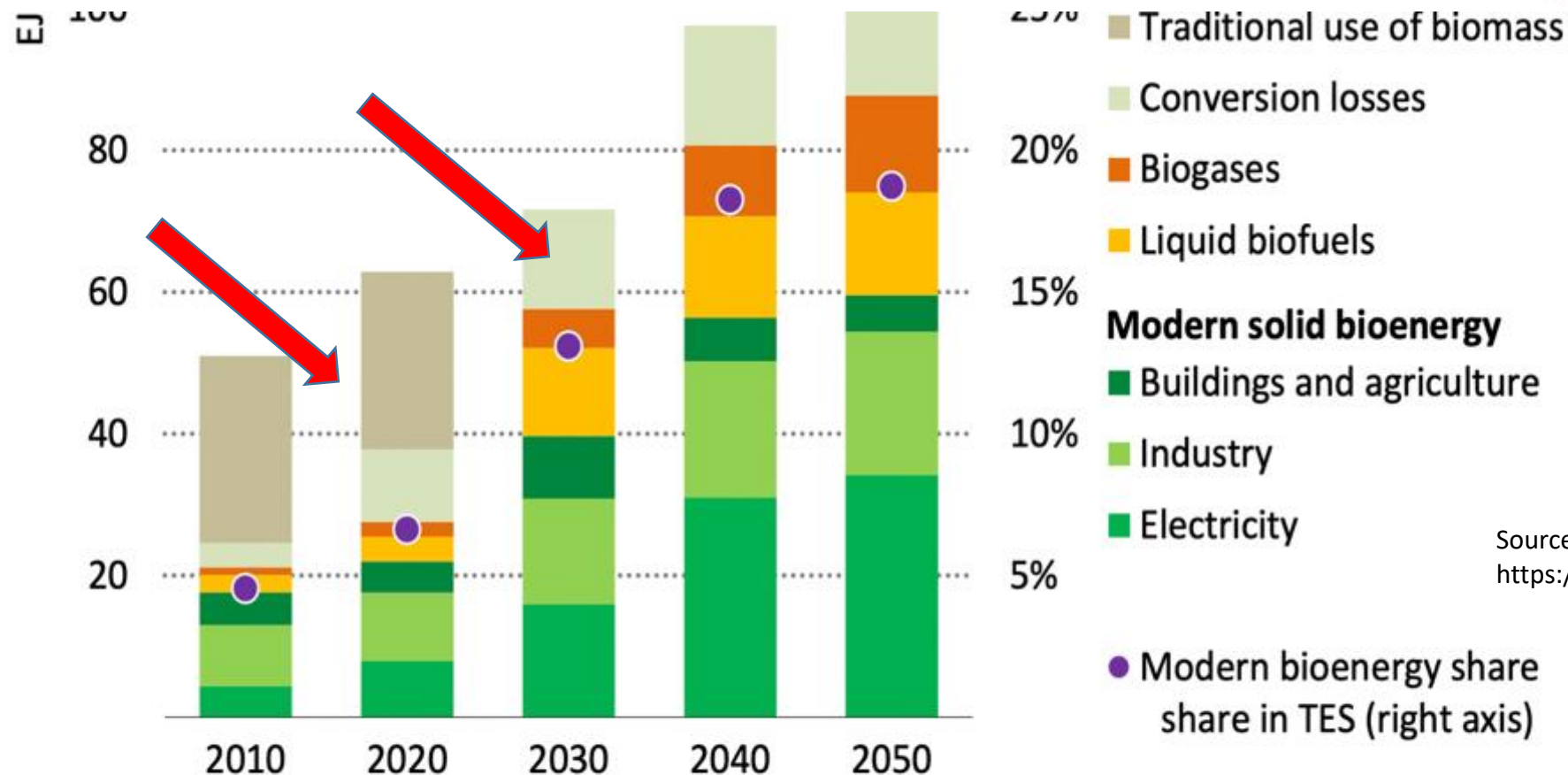
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- Transition from traditional biomass use to using upgraded biomass
- Green cooking

International Energy Agency's view on future bioenergy use



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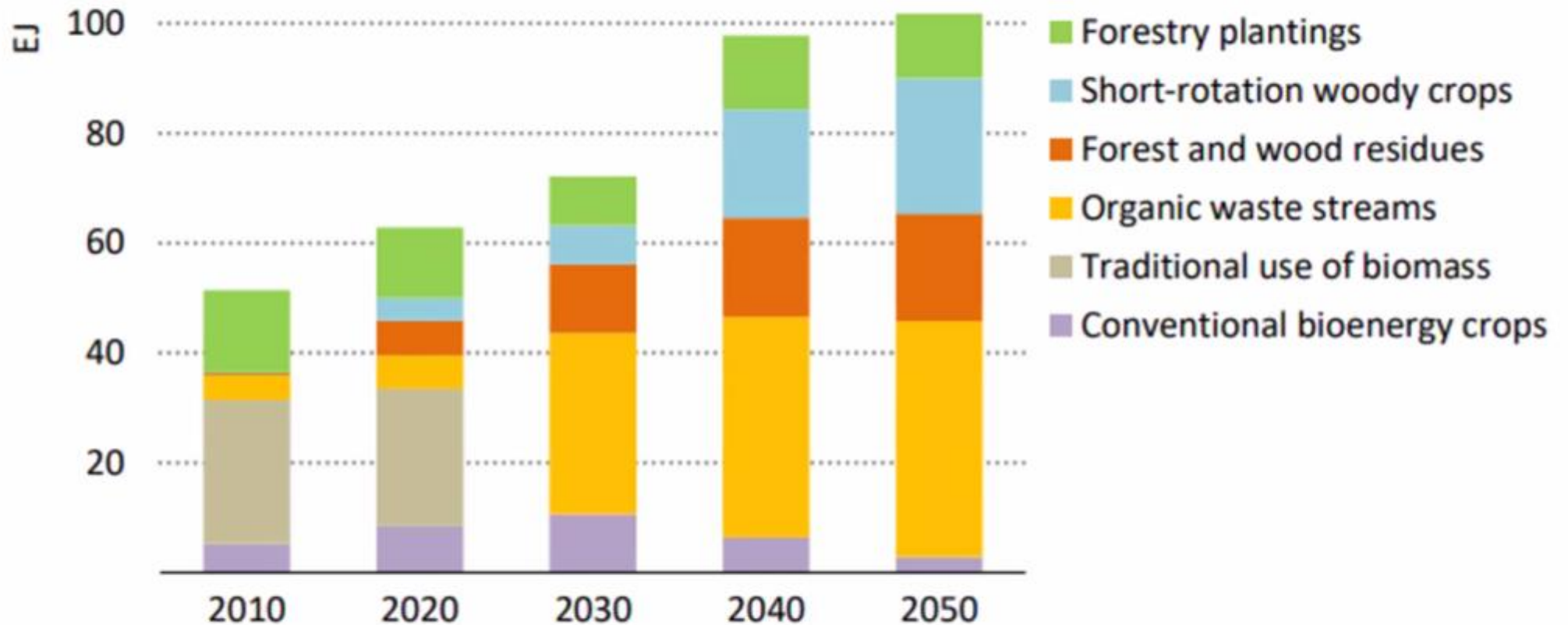


Source: <https://www.iea.org/reports/net-zero-by-2050>

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**Modern bioenergy use rises to 100 EJ in 2050, meeting almost 20% of total energy needs.
Global demand in 2050 is well below the assessed sustainable potential**

Figure 2.28 ▶ Global bioenergy supply by source in the NZE



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Bioenergy use increases by around 60% between 2020 and 2050, while shifting away from conventional feedstocks and the traditional use of biomass

Source: <https://www.iea.org/reports/net-zero-by-2050>

“Green cooking” is based on



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advanced combustion technology
based on gasification



Pellets



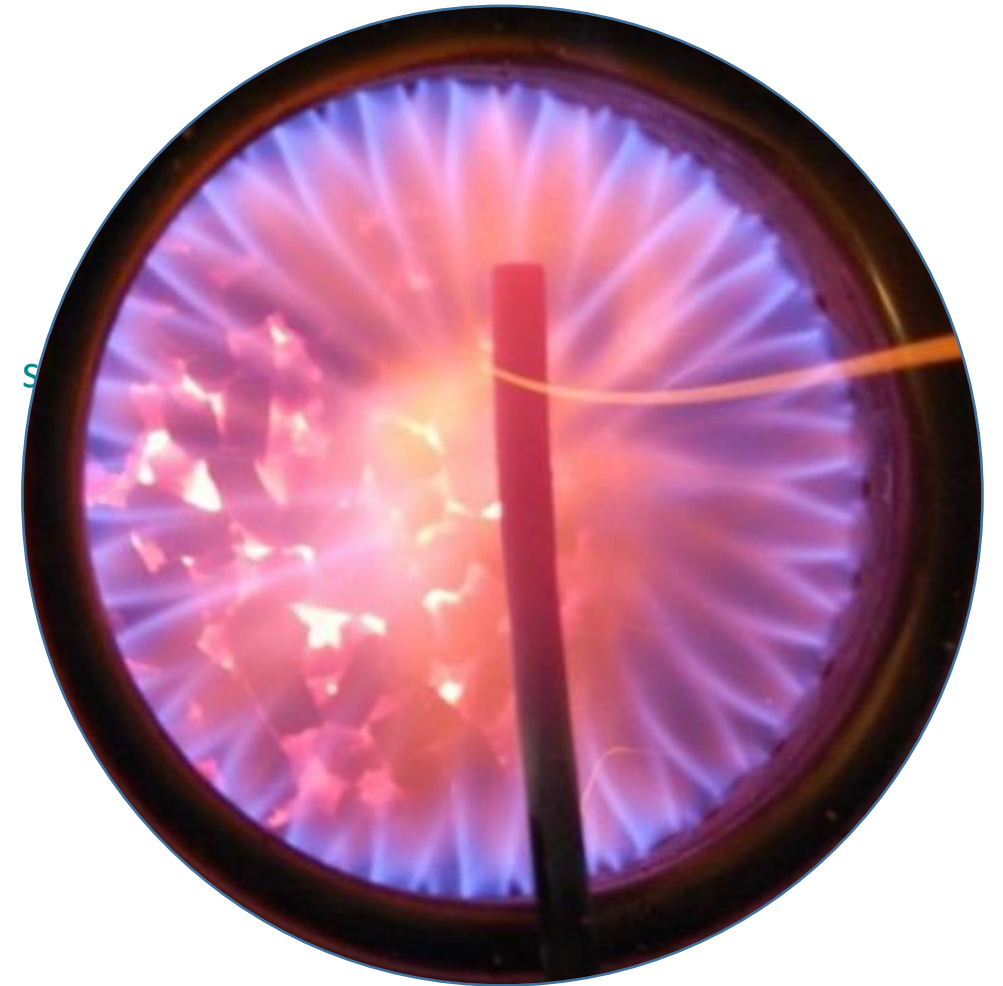
Foto: Ekasi Energy

Green cooking – a sustainable cooking solution



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- Cooking without smoke
- Affordable
- Based on local agricultural residues
- supports local economy
- Protects forests and woodlands from exploitation



Cooking without smoke



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Cookstove emissions

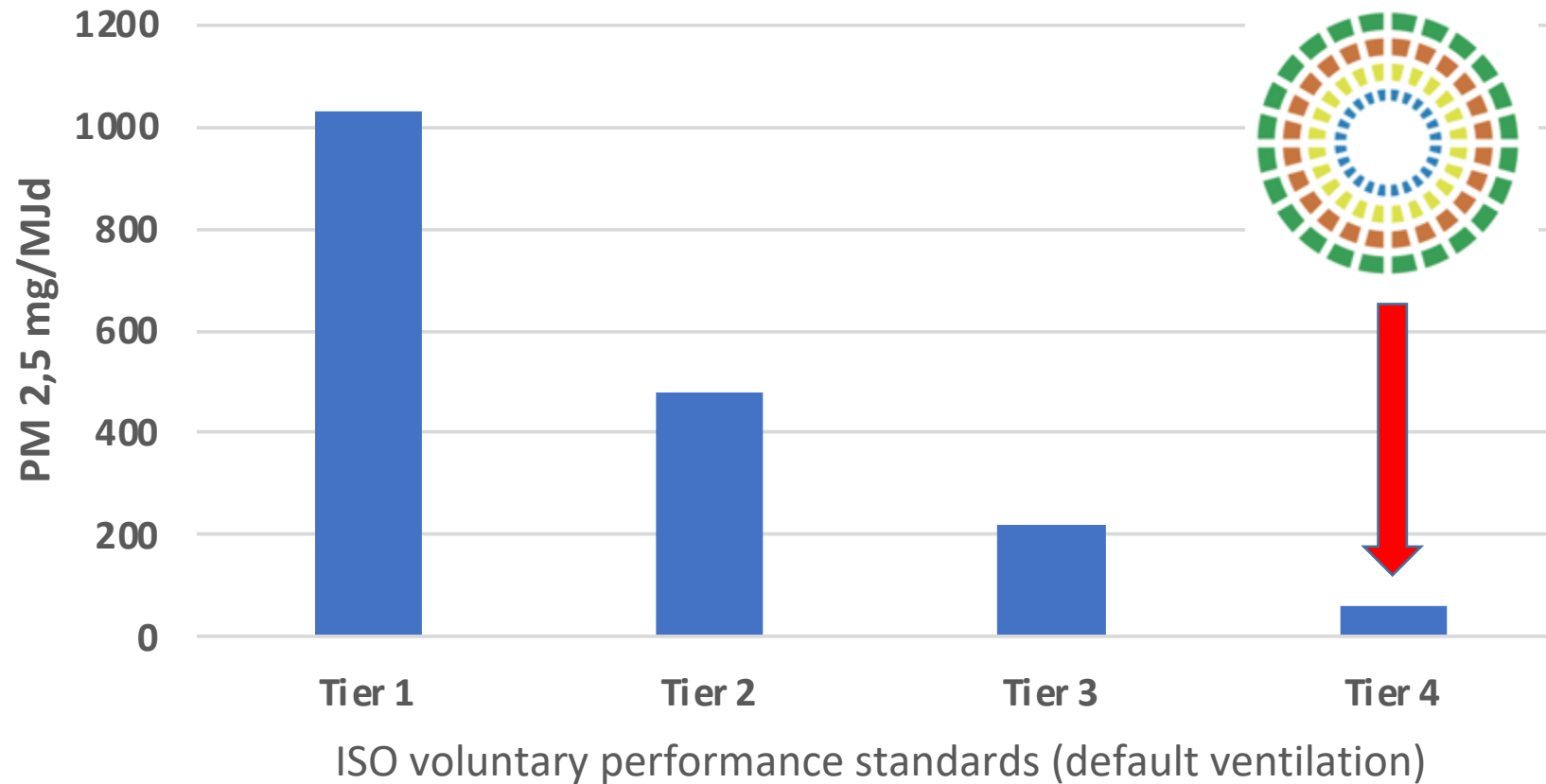
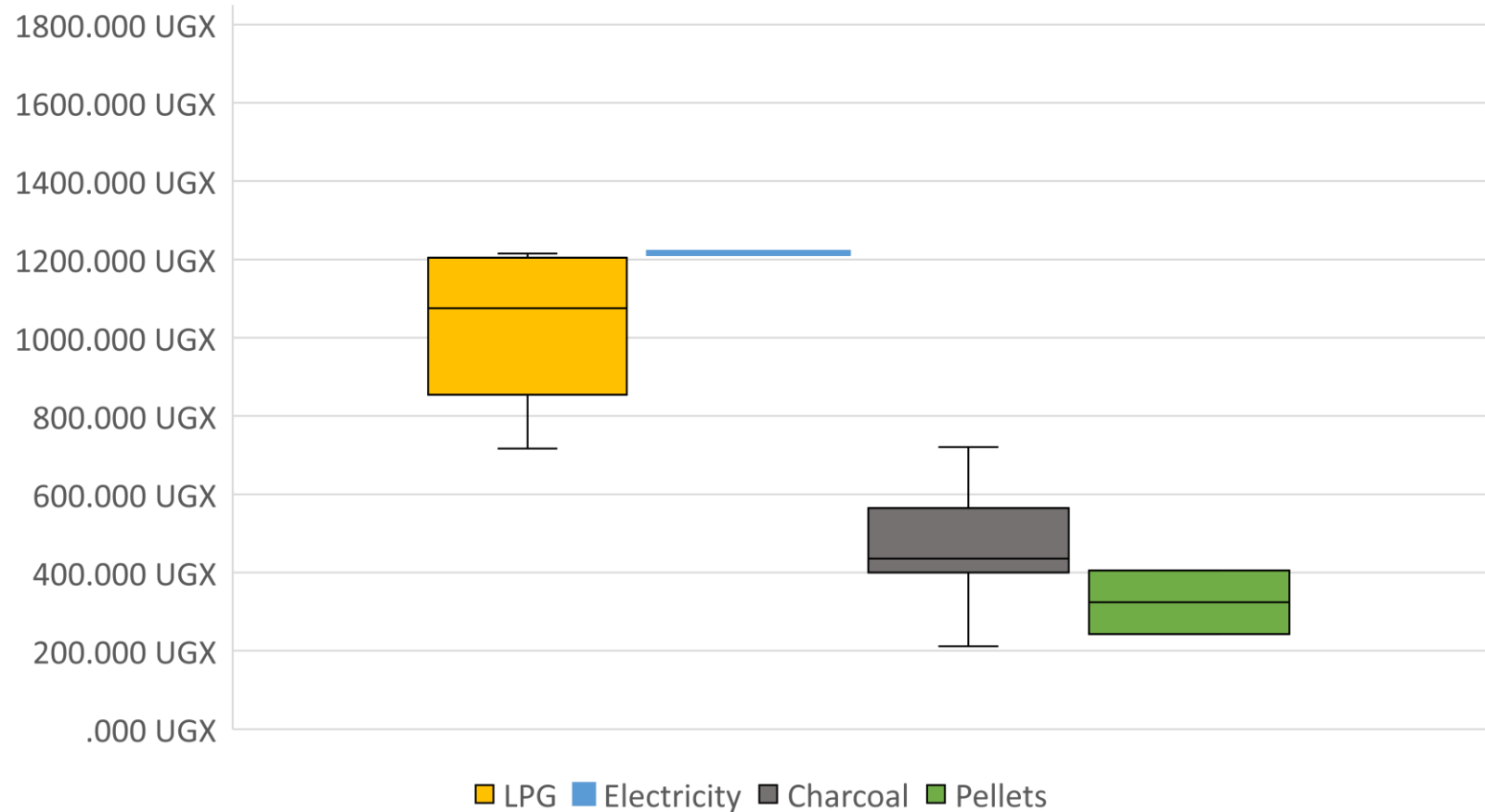


Foto: Africa Clean Energy

Cost per energy delivered



Kampala - UGX/kWh delivered



Assumptions of this calculation

Fuel	kWh/kg (or l)	Therm. Eff.	kWh/kg delivered	Sources
LPG	13,6	0,57	7,752	<i>Environmental Science & Technology</i> 55 (22): 15333–42. https://doi.org/10.1021/ac.s.est.1c03390 .
Charcoal	8,3	0,38	3,154	
Pellets	4,6	0,497	2,2365	
Electricity	1	0,74	0,74	

ESMAP Papers. Washington DC: World Bank.
<http://hdl.handle.net/10986/38418>.

Our activities in this context

- Communication: working group, webinars, website propellets.africa
- Initiation and support of pellet production projects
- Strategy development to disseminate Green Cooking
- Capacity building activities (e.g. establishing pellet testing labs, training of plant operators etc.)

Development of the bioenergy sector in Austria



- Foundation for the bioenergy sector in Austria is a well developed forestry and forest industry sector!
- Forest covers almost 50% of Austria
- Sustainable forest management has been established for 100 years
- Well developed access to forests with forest roads
- Forest industry has shown very dynamic development in the last 4 decades
- Dedicated research organisation „Holzforschung Austria“
- Joint marketing effort of the forest industry – very large export business

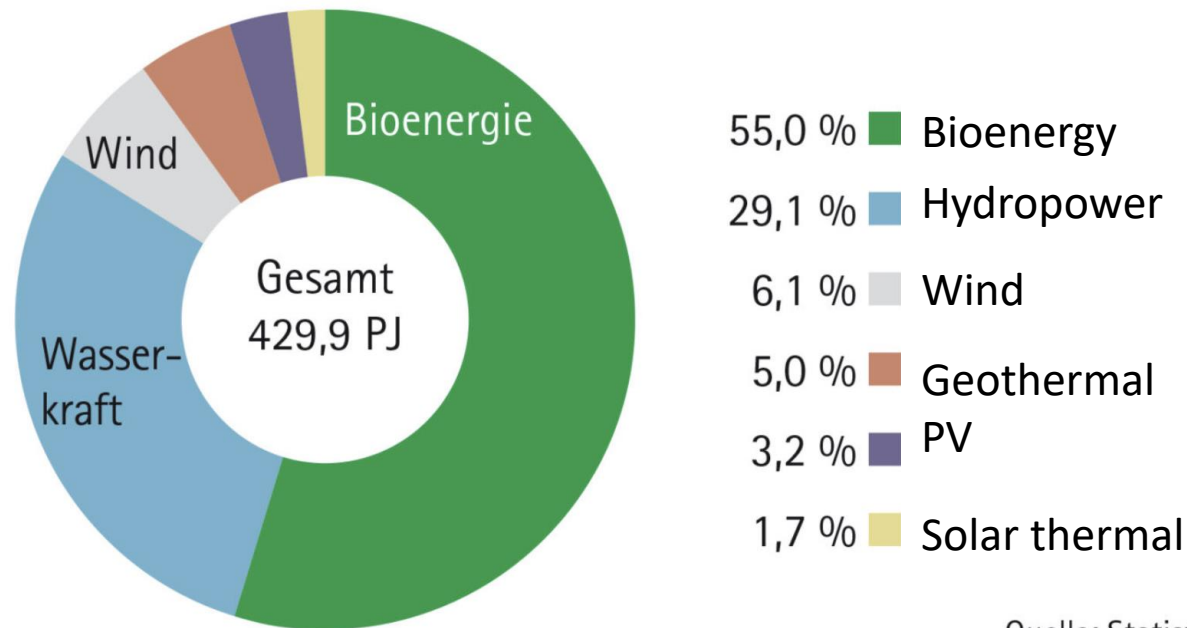
Sources of raw material for bioenergy use in Austria



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- Low value wood from the forests (e.g. trees that cannot be used commercially)
- Logging residues (branches, tops)
- Residues from wood processing (bark, sawdust, chips, shavings)

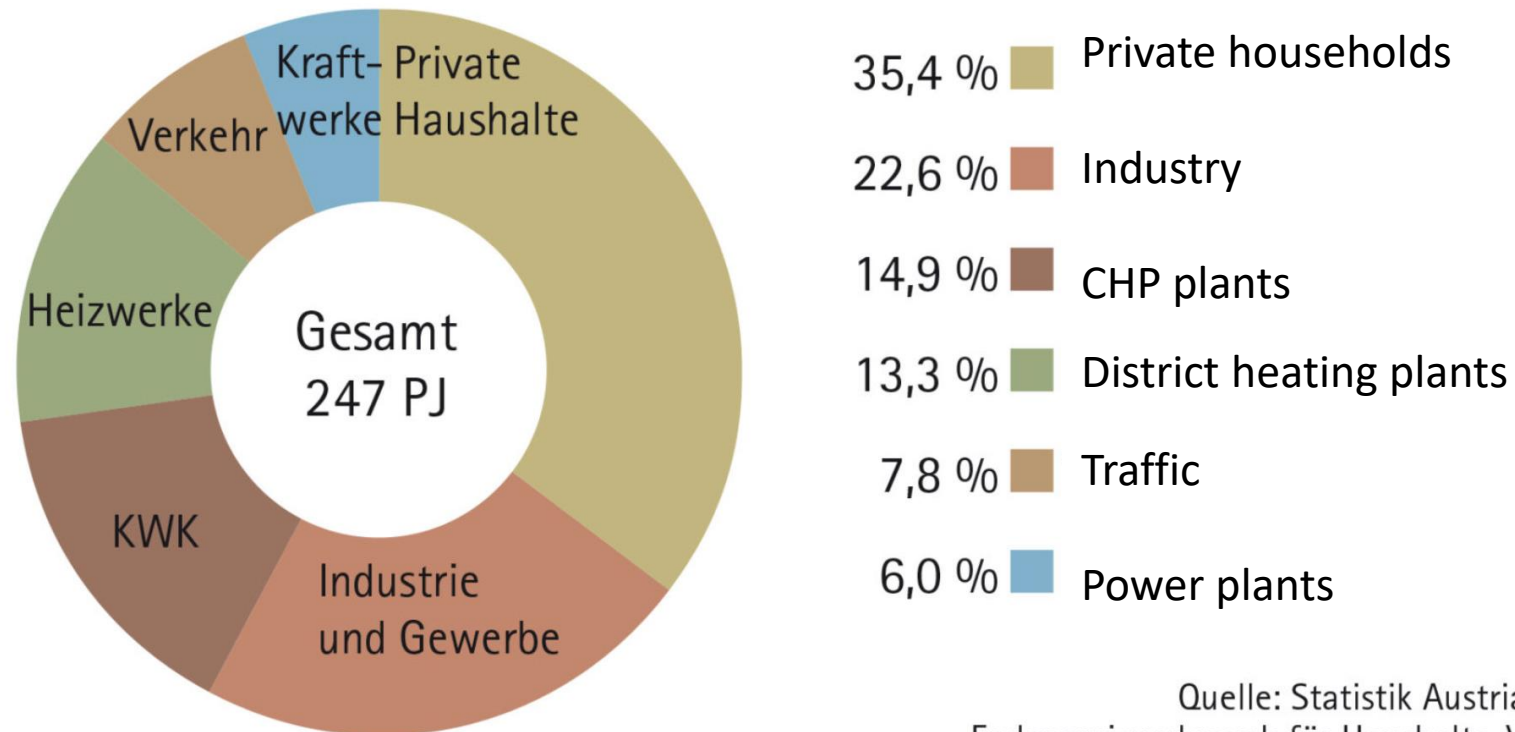
The share of bioenergy in our renewable energy portfolio



Quelle: Statistik Austria, Vorläufige Energiebilanz 2022

Our overall share of renewable energy is 32% of final energy consumption

Where is bioenergy being used?





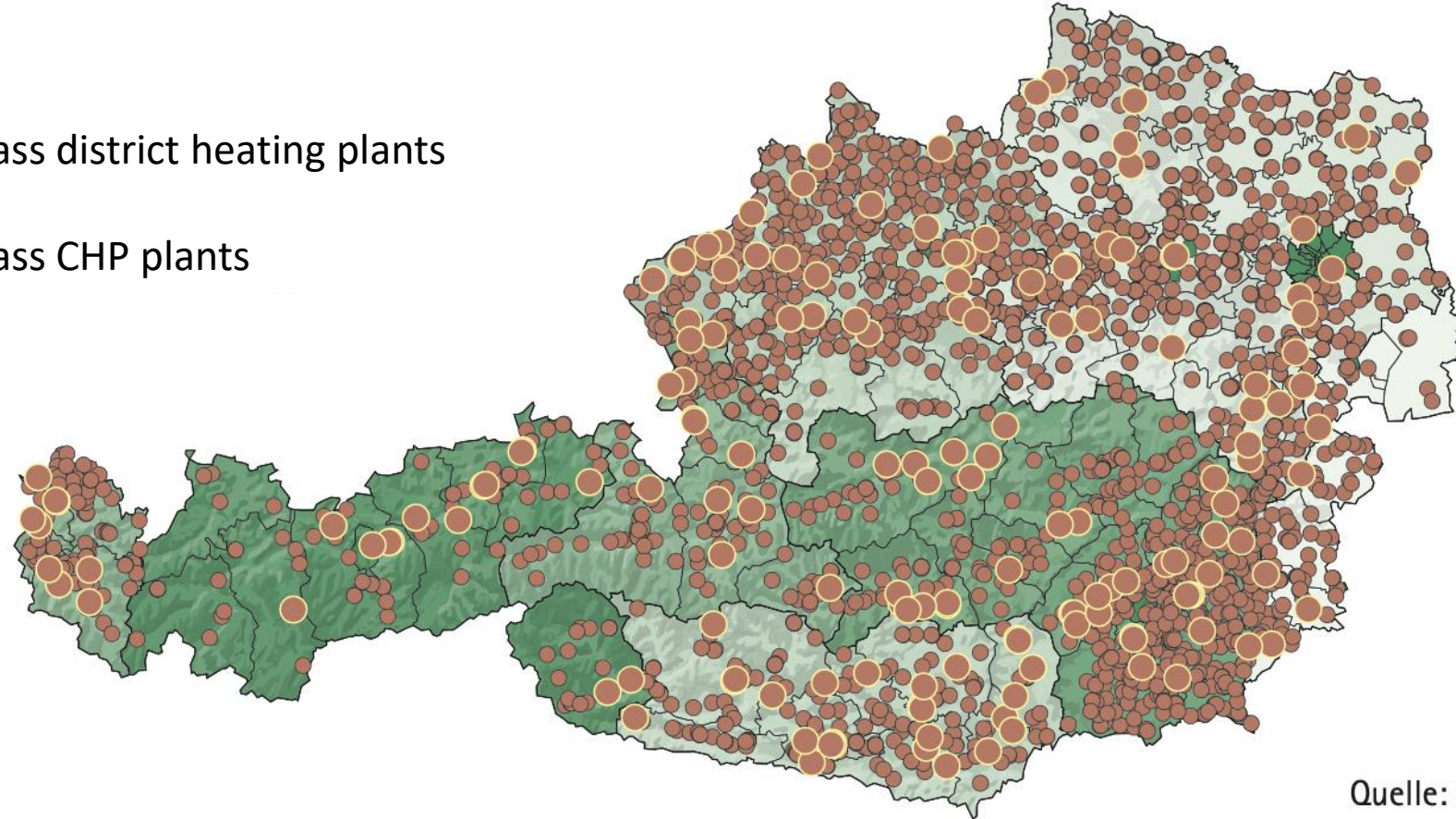
Quelle: Statistik Austria, Energiebilanz 2021,
Endenergieverbrauch für Haushalte, Verkehr und Industrie;
Umwandlungseinsatz für Kraftwerke, KWK und Heizwerke

Biomass District heating and CHP plants



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-  Biomass district heating plants
-  Biomass CHP plants

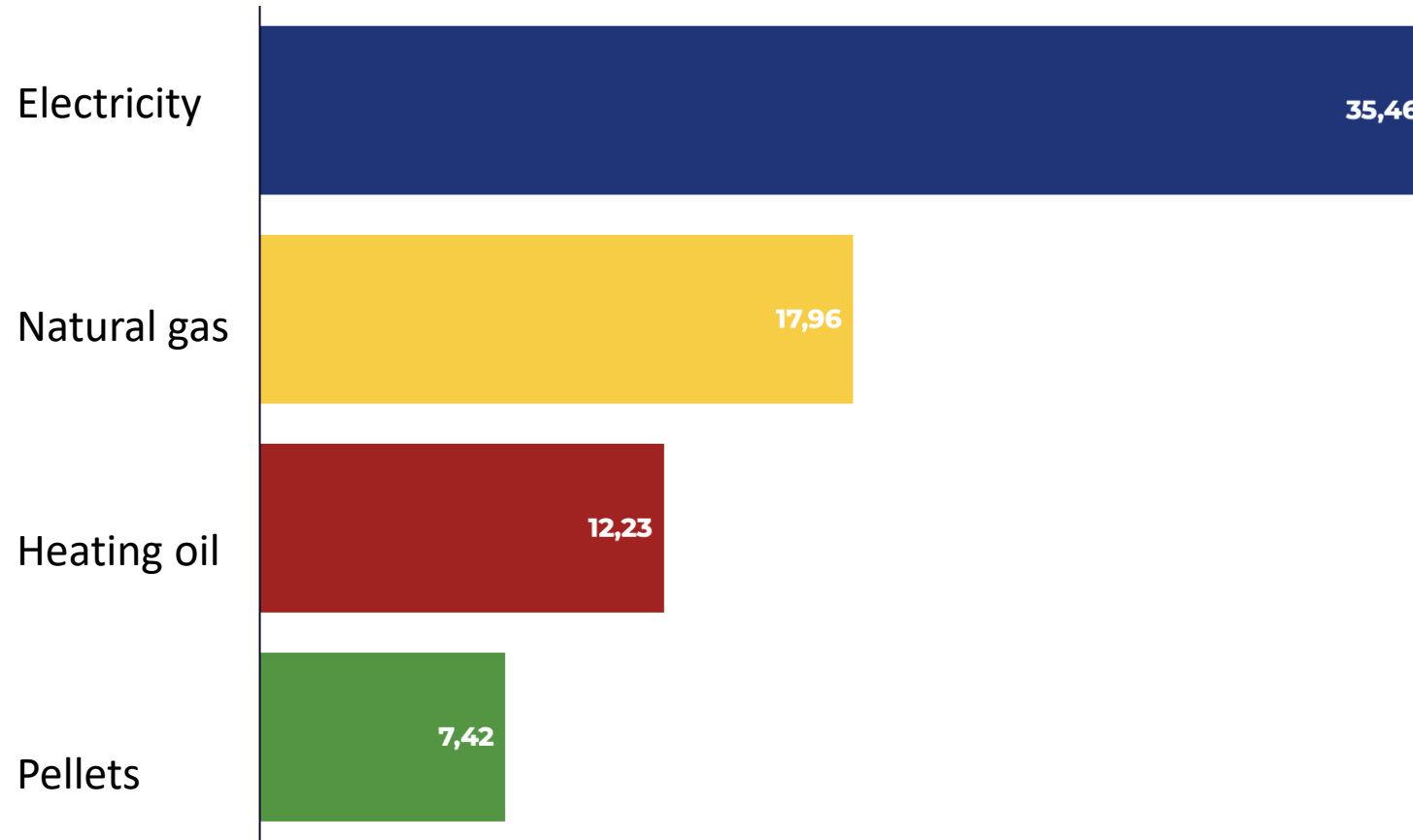


Quelle: ÖBMV

Comparison of fuel costs for domestic heating (Eurocent / kWh)



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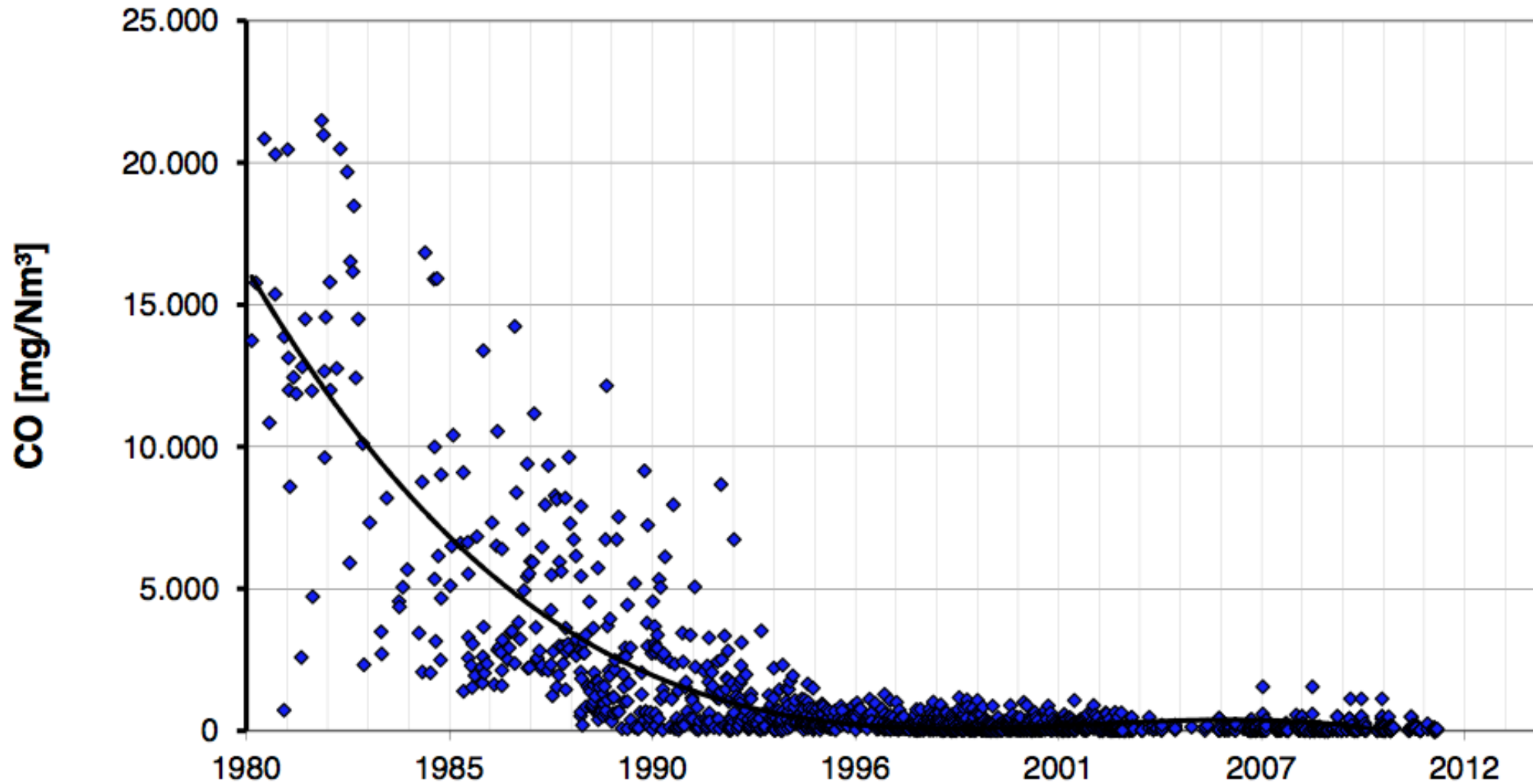
What has helped to develop such a large bioenergy sector?

- Subsidies for forest road establishment
- Policies supporting rural economic development: subsidies for rural district heating systems with biomass (2500 systems established)
- Long term R&D policies supporting highly efficient and clean biomass combustion
- Subsidies for modern domestic biomass heating equipment (logwood, woodchips, pellets)
- Well established sectoral associations: Austrian Biomass Association, proPellets Austria

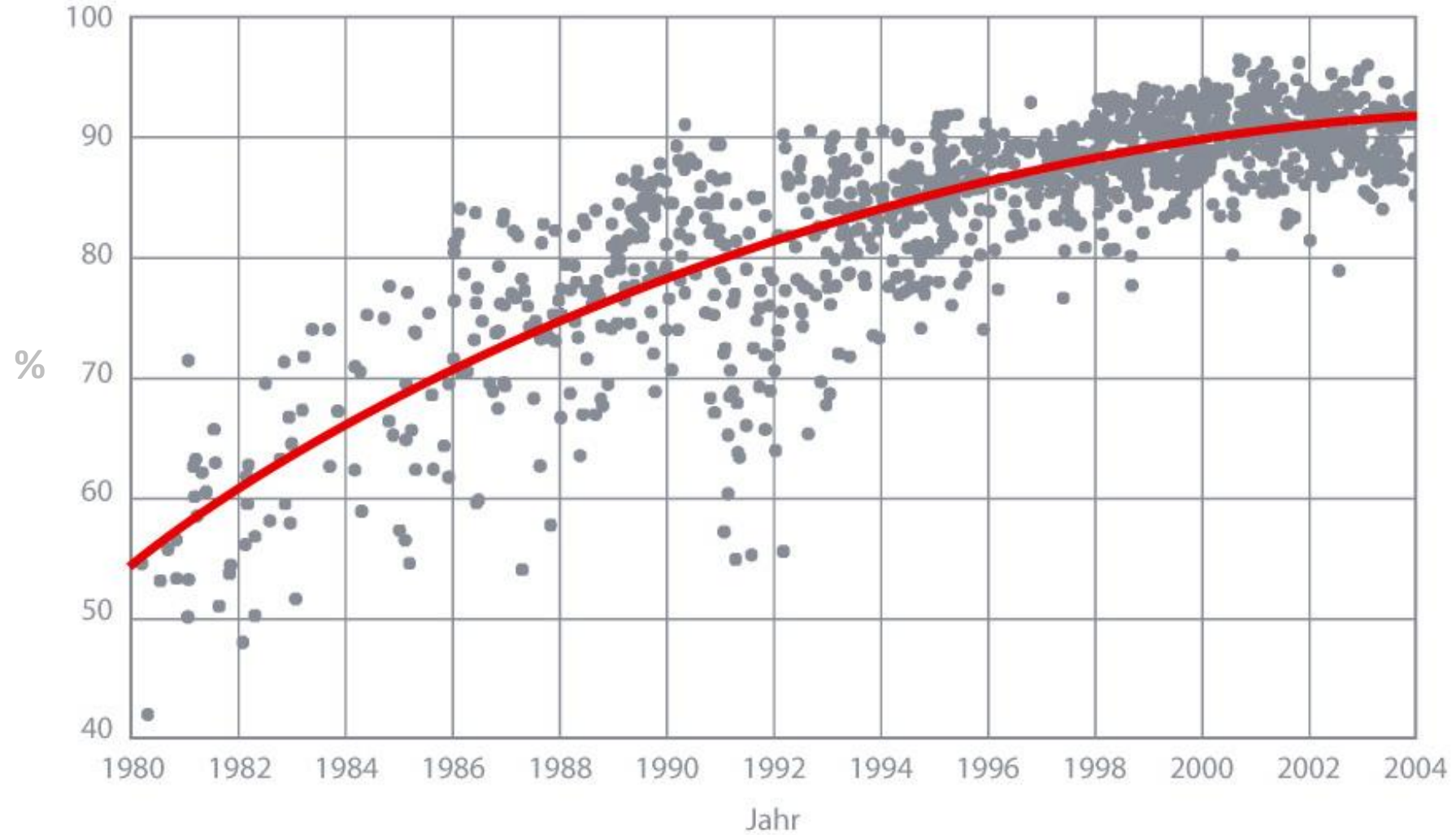
CO Emissions of new wood boiler models in Austria (logwood, chips, pellets)



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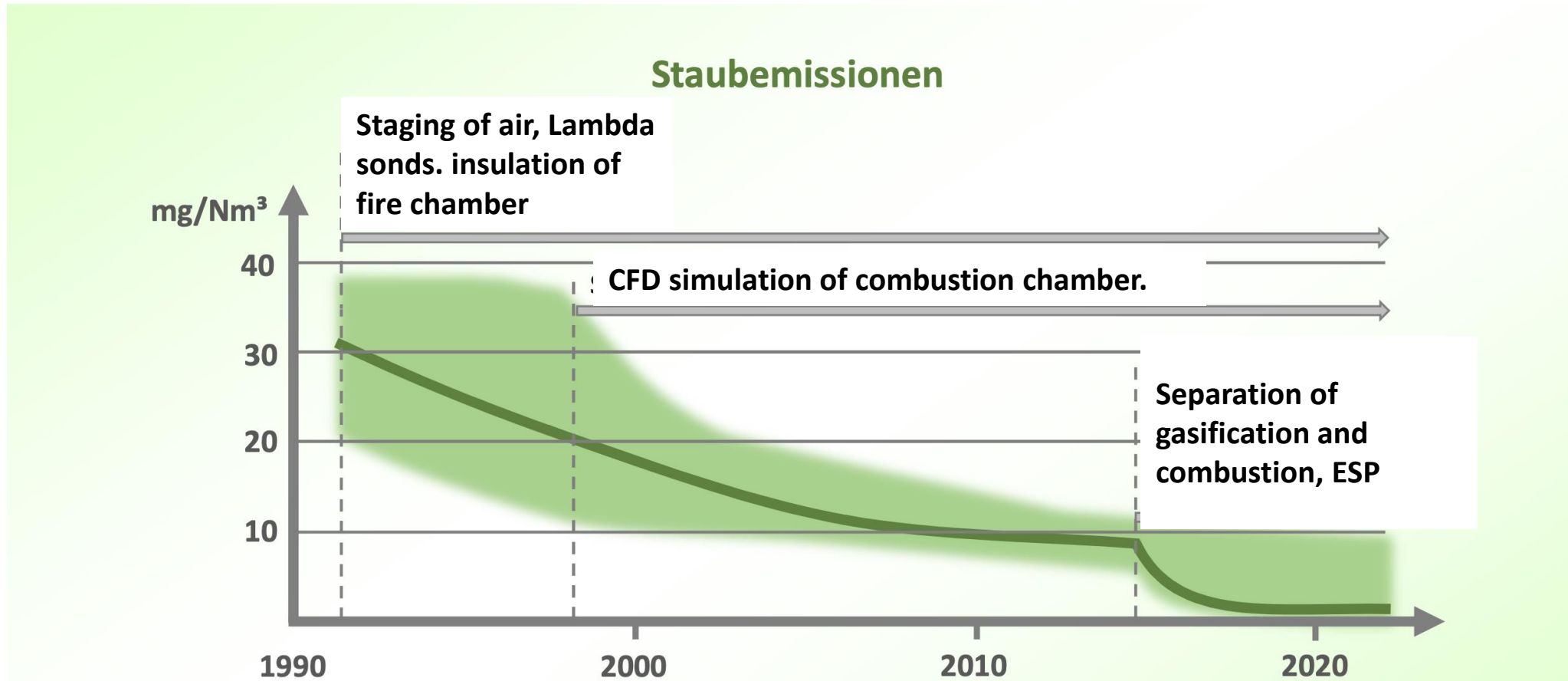
The improvement of wood boiler efficiency



Emissions of dust from Austrian pellet boilers (mg/m³)



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Typische Emissionsbereiche bei Nennlastbetrieb
in mg/Nm³ (bezogen auf 13 Vol% O₂)



BIOENERGIESYSTEME GmbH
www.bios-bioenergy.at

Conclusions

- Developing a healthy bioenergy sector requires a long term policy
- Domestic sourcing of biomass can be an important factor for supply security and economic value added
- An economically healthy bioenergy sector that is largely independent of running cost subsidies can be established in the heat sector
- Availability of pellets can boost the opportunities for biomass heating applications
- Technologies are available for utilizing biomass at every scale without risk of air pollution

Thank you for your attention!

Feel free to contact me!

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