

Goodbye fossil fuels hello renewable heat

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The region of Upper Austria



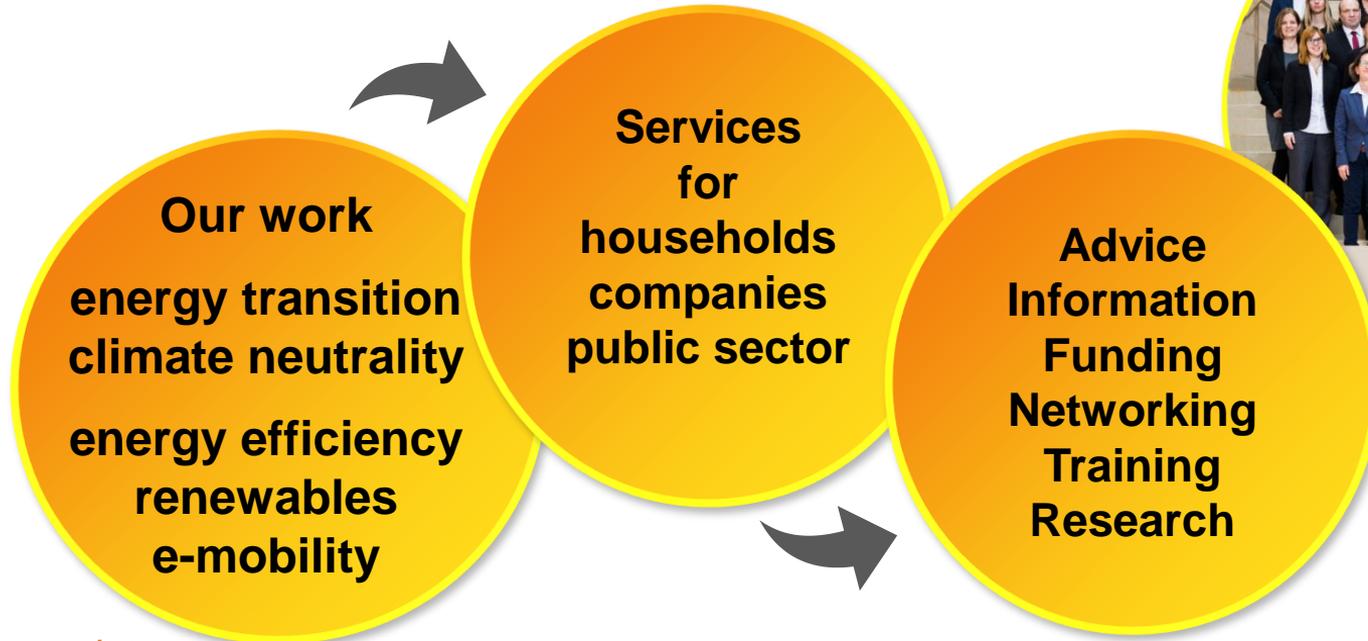
Capital: Linz
Population: 1.5 million



Industrial & rural:
Industrial heart of Austria
50% live in small municipalities

OÖ Energiesparverband

The Energy Agency of Upper Austria



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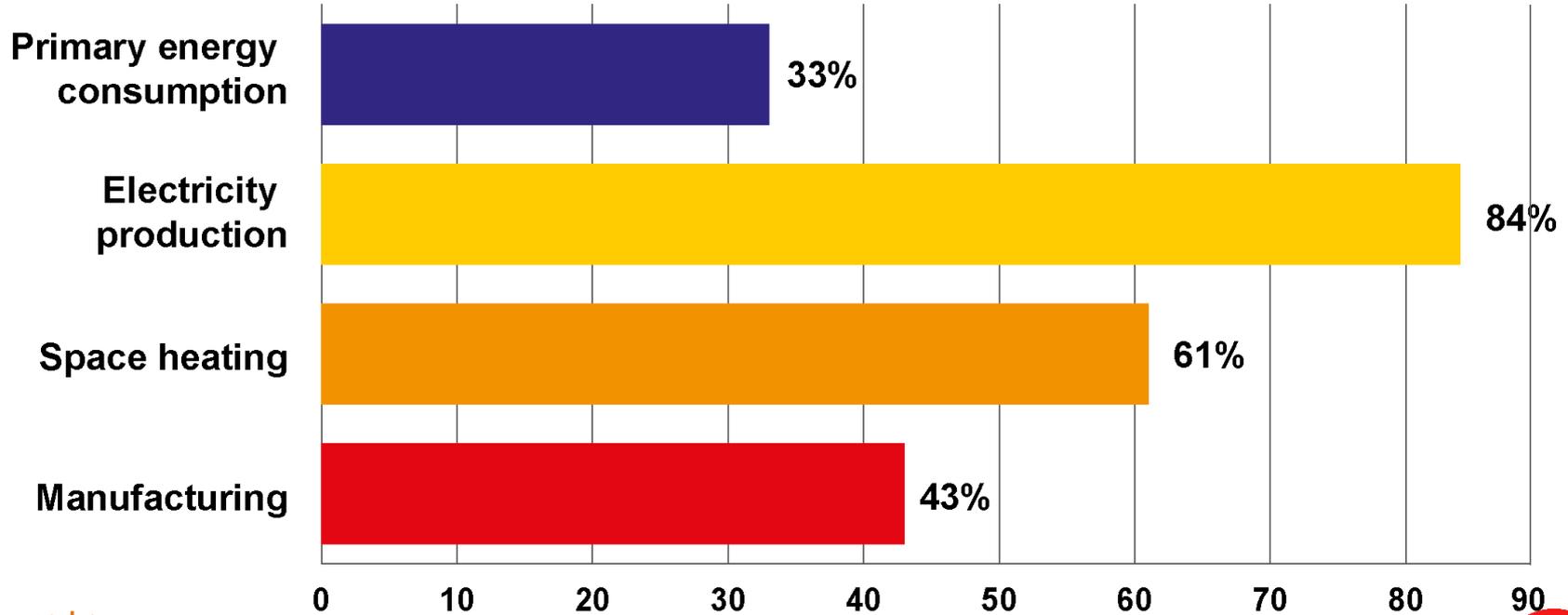


Our work
energy transition
climate neutrality
energy efficiency
renewables
e-mobility

Services for
household
companies
public sector

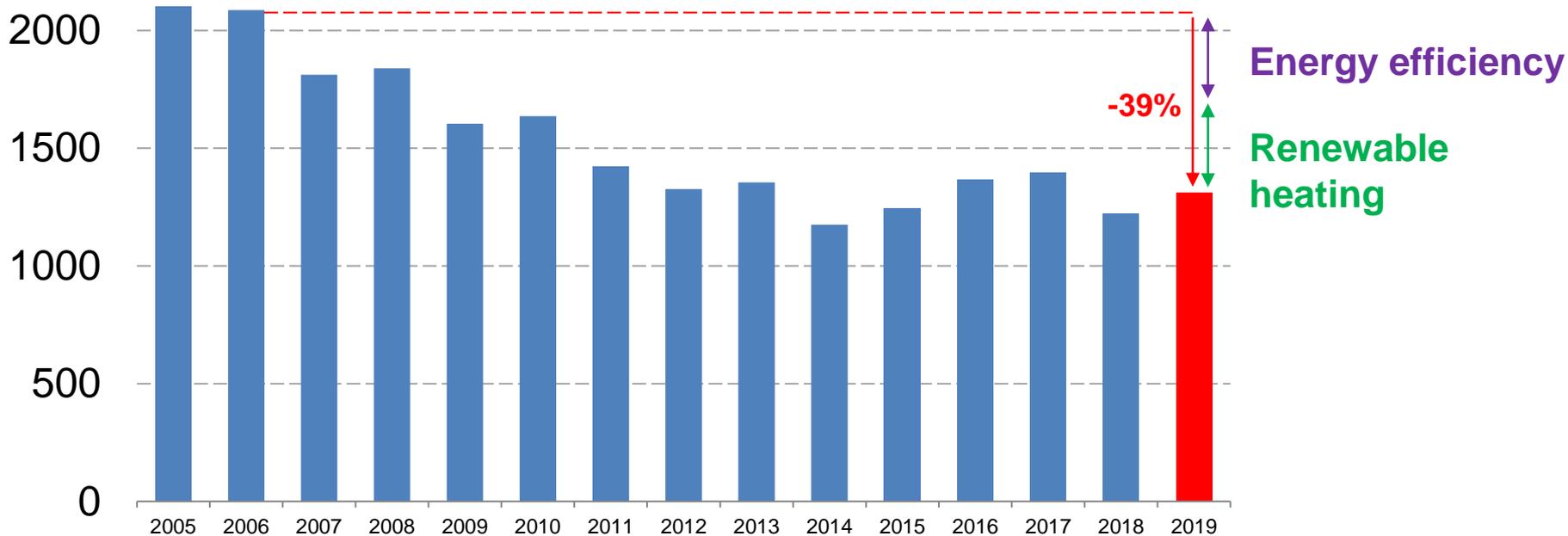
- 10,000 **face-to-face energy advice** sessions/year
- 250,000 **energy certificates** for buildings
- 250 **ESCO projects**
- 30 **training courses** with 500+ participants/year
- 25 **R&D projects** on industrial energy transition

Share of renewable energy in different sectors Upper Austria



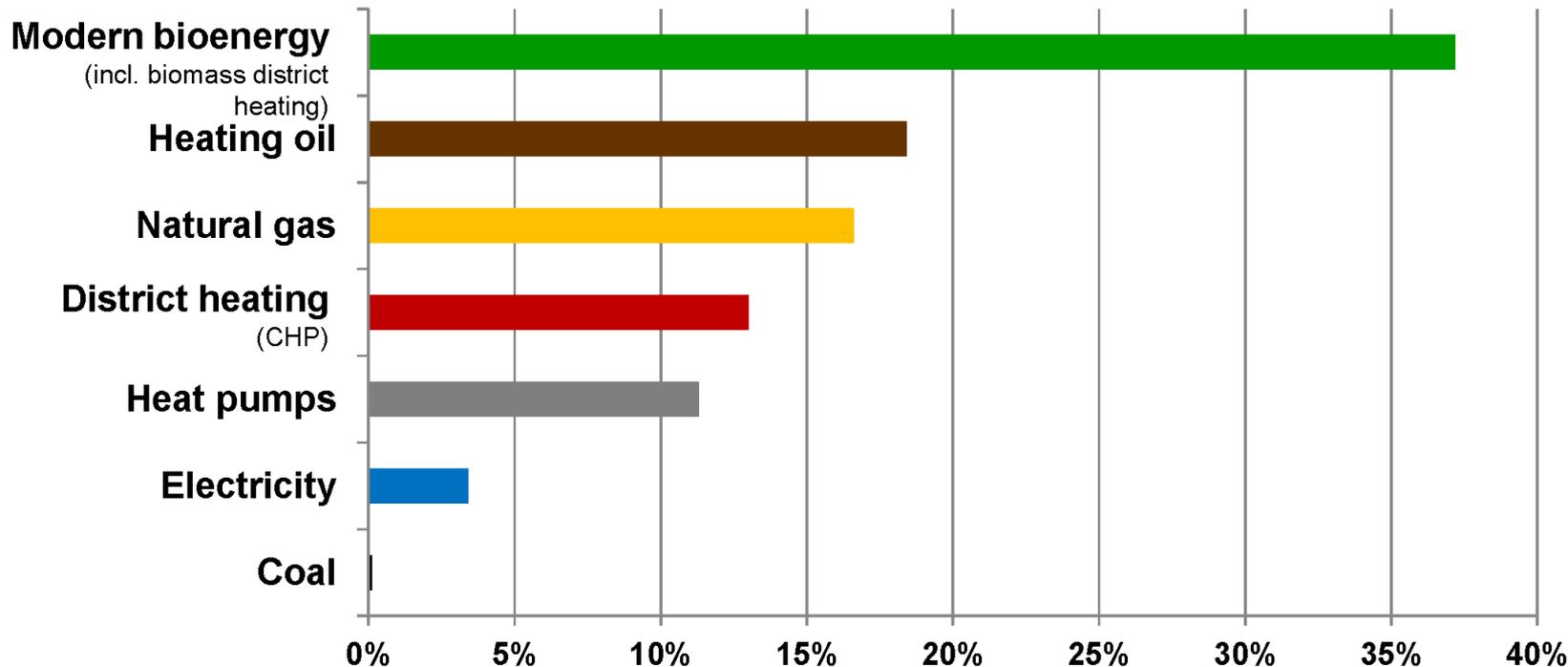
Greenhouse gas emissions from buildings Upper Austria

1000 t CO₂



Heating in Upper Austria: over 60% from clean sources

% of all dwellings



Goodbye fossil fuels, hello renewable heat

Subsidies for replacement of fossil systems: 50 %, for low income household up to 100 %

Energy advice 10,000 face-face sessions/a

AdieuÖl large-scale multiplier campaign

Training programmes for actors along the value chain



Banning oil and gas heating

2019: in new construction

2023: no replacement of broken oil boilers

2025: oil boilers must be replaced (step-plan)

2035: no oil heating anymore!
Gas ban to follow

Emission and efficiency standards for heating systems and buildings

Innovation and market development support for businesses (e.g. product development, joint export actions etc.)

Quality and sustainability are king: Emission and efficiency criteria



Heat pumps

- performance requirements, based on a seasonal efficiency calculation
- strict noise limits for air-source heat pumps
- refrigerant Global Warming Potential (GWP) below 1,500
- green electricity contract

District heating

- min. 80 % from renewables, high-efficiency CHP or waste heat

Pellets boilers

- sustainable forestry practices
- stringent emission standards of the Austrian Ecolabel (e.g. CO 45 mg/MJ, org C 3 mg/MJ, NO_x 100 mg/MJ, dust 15 mg/MJ)

Some lessons learnt



- Understand, quantify and **communicate all the benefits** (beyond climate protection and cost savings)
- **Market segmentation:**
 - which consumer group is most likely to be activated?
 - how can they be reached?
 - where do pellets or heat pumps work best?
- **Value chain approach:** identify and aim overcome gaps in the supply chain
- **Policy:** "package approaches" work best (carrots, sticks, tambourines, skateboards!)

European Energy Efficiency Conference

2 - 3 March 2023, Wels/Austria

Held in the context of the World Sustainable Energy Days, an international conference on energy transition and climate neutrality with 650+ experts from over 60 countries

- **Energy Efficiency Policy Conference**
- **Industrial Energy Conference**
- **Young Energy Researchers Conference**
- **Trade Show with 500+ exhibitors**

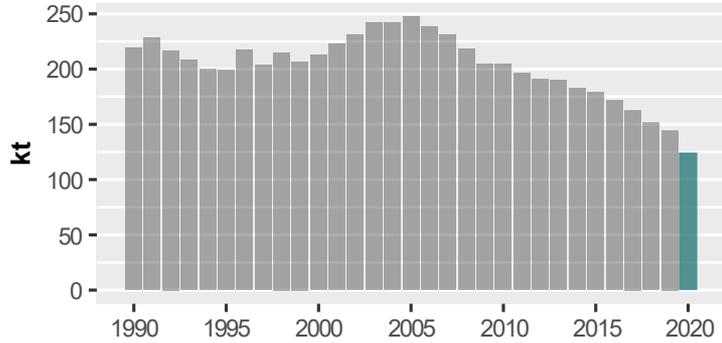
www.wsed.at



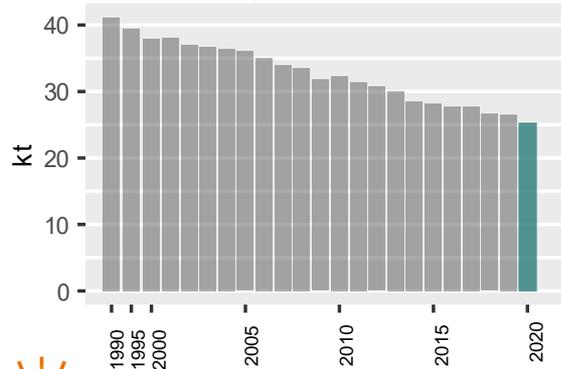


Emissions in Austria - Examples

NO_x-Emissions



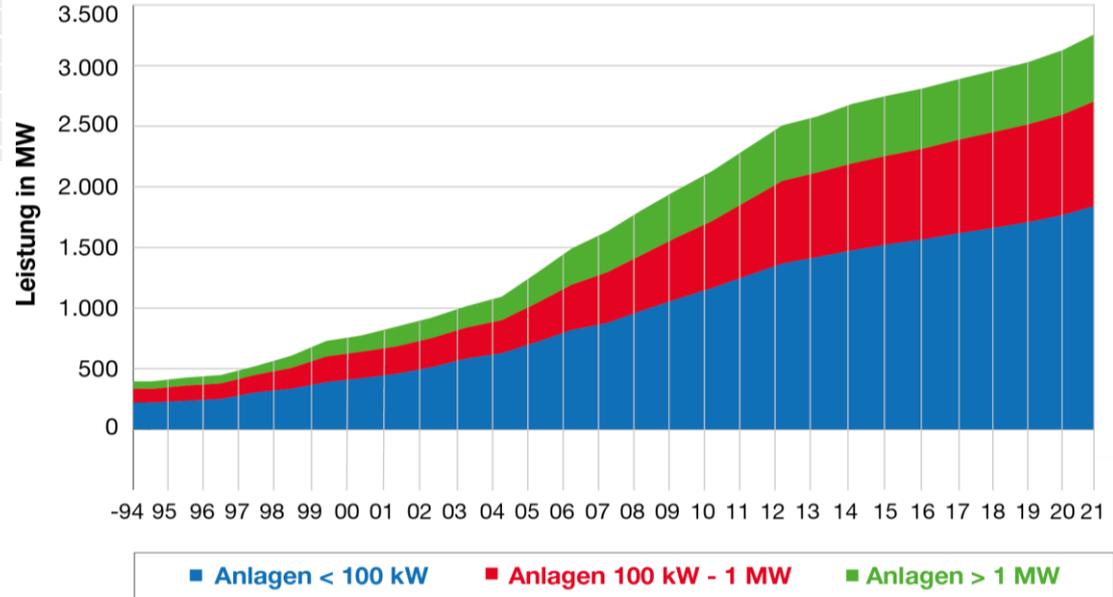
PM₁₀-Emissions



Source: Austrian Environment Agency

Automated pellet & wood chip systems Upper Austria

Installed capacities



Modern and clean wood heating – IF

**sustainable
forestry**

**effective
fuel
production
and
distribution**

**efficient
and low-
emission
heating
equipment**

"Clean heating for everyone"

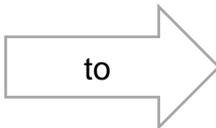
100 % funding for low-income households

- Income thresholds (per month)
100 %: 1454 € for 1-person households, 2181 € for 2-persons
- Single-family homes, owned and occupied by eligible persons (other building types to follow)
- Switch from fossil and direct electric to renewable heating
- Obligatory advice and comprehensive support from ESV



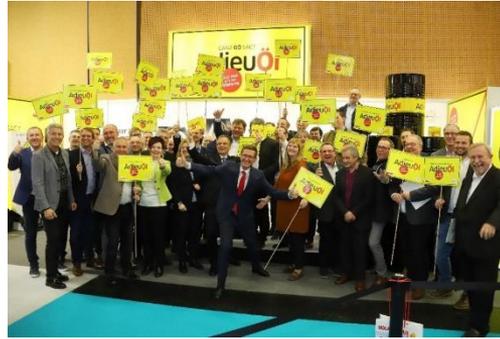
Switching from

- oil
- gas
- coal
- electric



- pellets, wood chips, log wood
- heat pumps
- renewable district heating

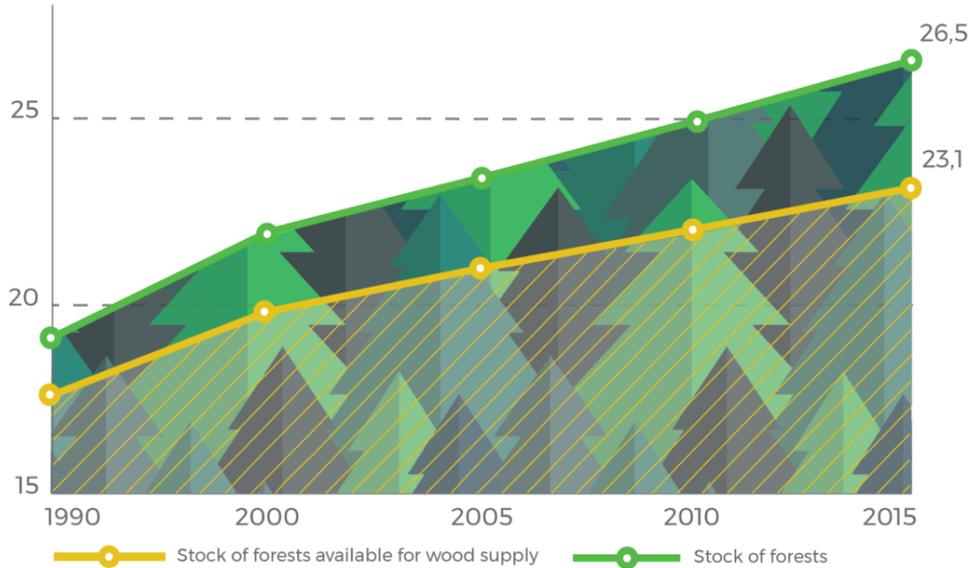
AdieuÖl Campaign: Creating public awareness



Forest Growth Continues in EU



EU-28 evolution of forest stock and stock available for wood supply (From 1990 to 2015, billion of m³)



Source: Eurostat



Source: source: Eurostat, [jrc-forest-bioenergy-study-2021-final_online.pdf](#)

- Volume increased 48% since 1990
- Available supply is ~ 85% of total forest stock
- Forest area increased 1,7% in the EU between 2010-2020

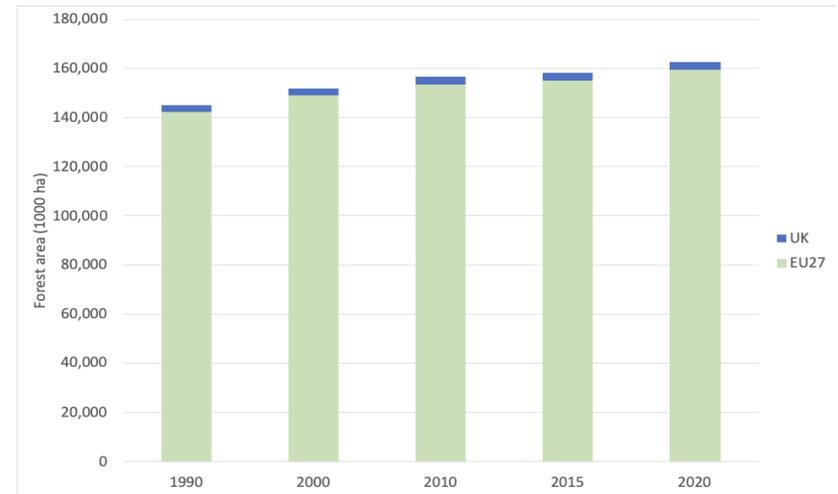


Figure 3. Forest area evolution in the EU. Source: FRA 2020 (FAO 2020)

Biomass heating: a "carbon neutral" fuel

