

**GERMANY:**  
**20 YEARS ~~SUCCESS~~ EXPERIENCE**  
**AND EFFORTS**  
**WITH WOOD PELLET HEATING**

*Martin Bentele, DEPV*

*2019 WPAC AGM Pellet Conference*

---

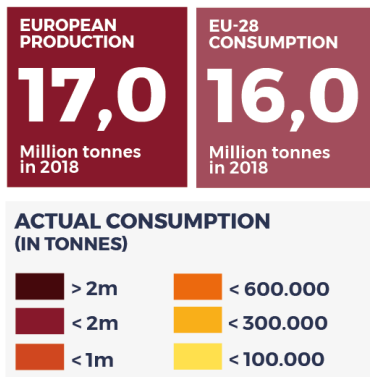
Ottawa, September 25th, 2019

**DEPV** Deutscher Energieholz-  
und Pellet-Verband e.V.

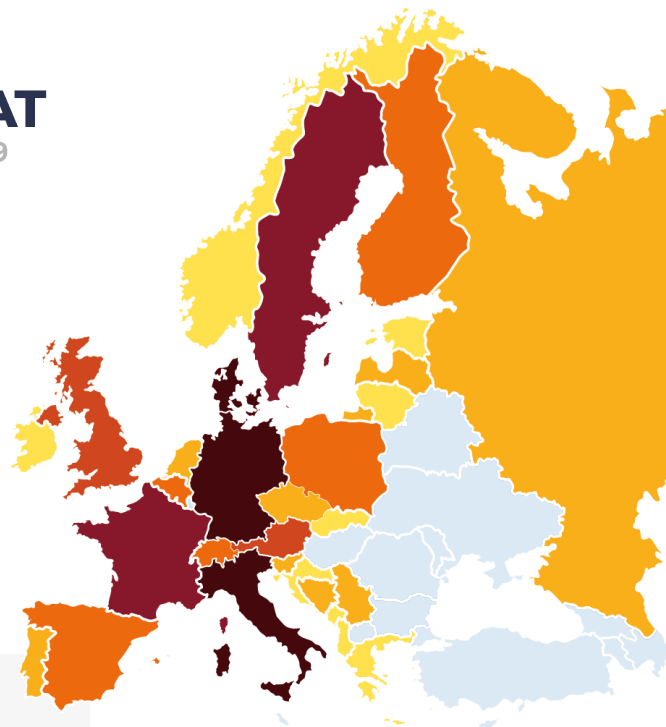
# PELLET CONSUMPTION FOR HEAT IN EUROPA 2018

## EU-28 WOOD PELLET CONSUMPTION FOR HEAT

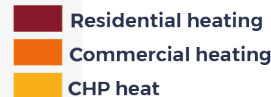
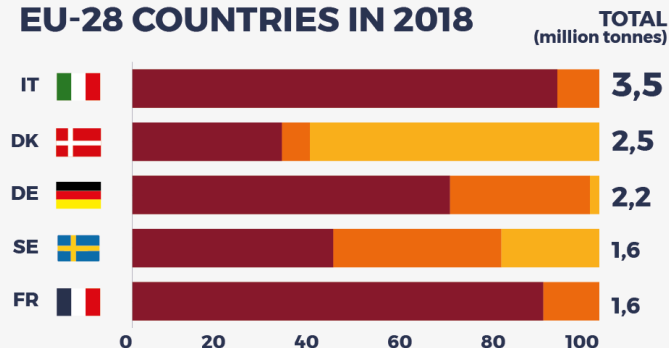
(IN 2018, TONNES, %) SOURCE: EPC SURVEY 2019



EU28 pellet consumption for heat increased by **5,0%** between 2017 and 2018



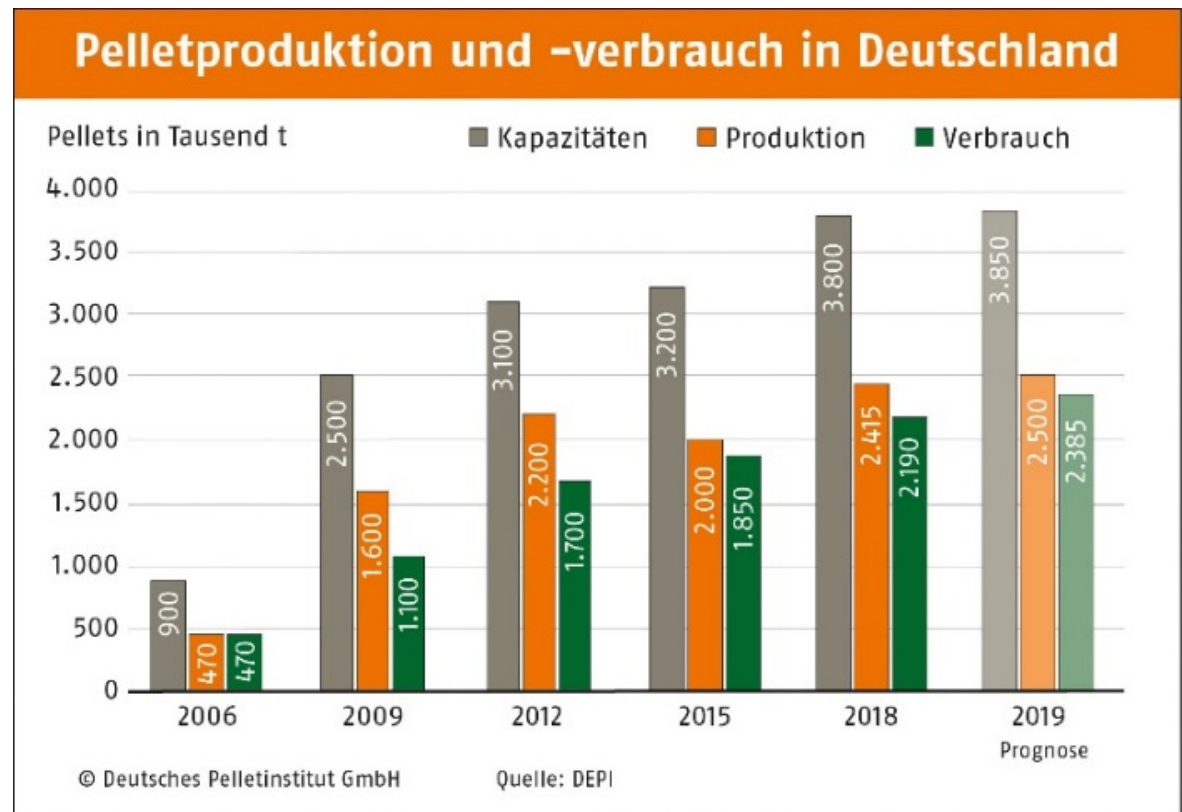
### CONSUMPTION IN TOP 5 EU-28 COUNTRIES IN 2018



# PELLET PRODUCTION AND CONSUMPTION IN GERMANY

## Important Preconditions:

- Huge base of raw material (6,5 Mio. t sawmill residues/a);
- high quality;
- obligation to report bulk amount quarterly;
- professionell market reviews;
- sufficient stockage in autumn (compensation?).



# WHY HEATING WITH PELLETS?

---

**Pellet boilers for the heating market in Europe were created to substitute oil heating systems.**

It must be ensured:

- costs and convenience of pellet heating systems can compete with oil boilers;
- high efficiency, ultral-low (zero) emissions, safe use;
- social acceptance for modern wood fuels: sustainable origin and part of a cascade system.



# THE GERMAN WOOD FUEL AND PELLET FEDERATION - MEMBERS

## DEPV sector federation

⇒ manufacturers of boilers and stoves:



**Overall 107 members of the entire sector:**

producers and traders of pellets, wood chips and briquettes as well as component manufacturers



# BIG RANGE OF APPLICATION FOR PELLET FURNACES

- **Residential heating systems with small capacity**
  - New and existing buildings
  - Pellet boiler as central heating
  - Stoves (with/without water-chamber), in most cases addition to an existing central heating system
  - Pellet barbecue 😊



# PELLET-BASED CENTRAL HEATING SYSTEMS

- Mainly for single and double-family-houses
- Nominal output from 10 up to 50 kW
- High efficiency > 95 %, low dust emissions < 20 mg/m<sup>3</sup>
- Fuel demand: 3 to 20 t/a
- Recommended storage size: yearly fuel demand
- Boiler maintenance and clearing chimney by chimney sweeper once a year
- Automated heat exchanger and burner cleaning
- Automated pellet supply from storage by screw or suction systems
- Increasing of condense boilers (financial incentive)



Quelle: SOLARFOCUS GmbH



Quelle: KWB Deutschland – Kraft und Wärme aus Biomasse GmbH





# BIG RANGE OF APPLICATION FOR PELLET BOILERS

**Commercial and industrial heating systems with high capacity up from 50 kW:**

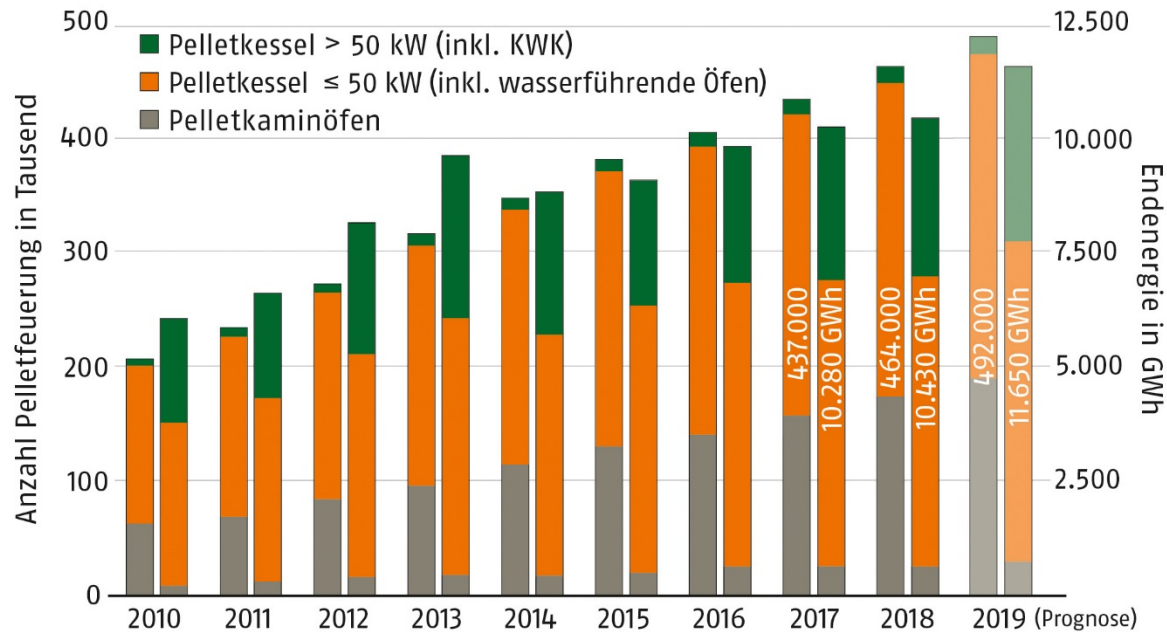
- Municipal sector (schools, pools, hospitals...)
- Big non- and residential buildings
- Process heat (pharmacy, laundry), and specially for food production (brewery, bakery...)
- Local heat network, CHP systems
- Hot-air boiler for mobile applications





# PELLET SYSTEMS IN GERMANY AND HEAT SUPPLY

Pellet heating systems (left bar)/heat supply (right)



© Deutsches Pelletinstitut GmbH Quelle: DEPI auf Basis der Zahlen von Biomasseatlas.de, ZIV, HKI, BDH; Stand Februar 2019

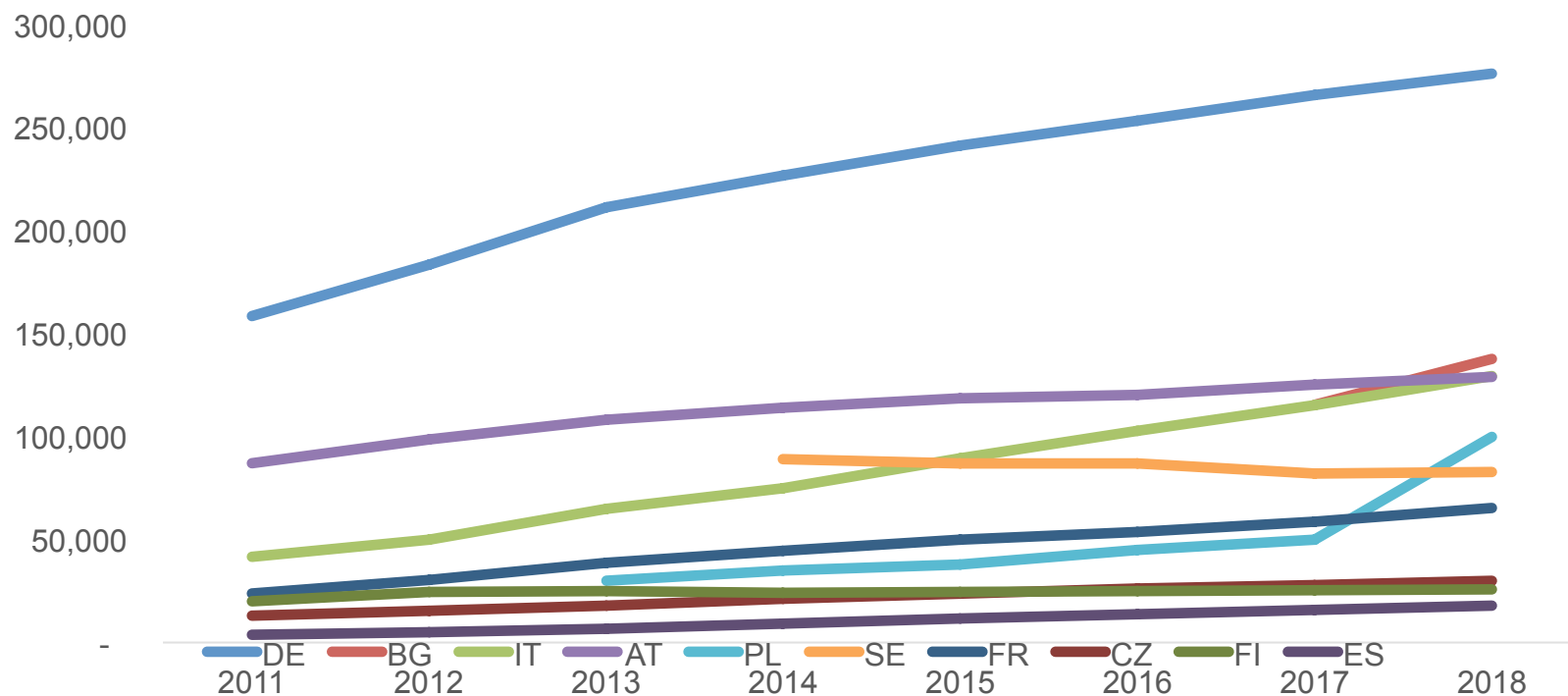
Annual installation level (amount)	2017	2018	2019*
<b>Pellet stoves</b>	16,500	18,000	18,675
<b>Pellet boilers &lt; 50 kW (incl. water-bearing stoves)</b>	15,000	14,500	15,250
<b>Pellet boilers &gt; 50 kW (incl. CHP)</b>	800	725	800
<b>Total</b>	<b>32,300</b>	<b>33,225</b>	<b>34,725</b>

\*forecast



# ACCEPTANCE OF PELLET BOILER IN EUROPE

Evolution of installed stock of residential pellet boilers (<50 kW) in some European countries (N° of units)



Source: EPC survey 2019



# HIGH QUALITY REQUIREMENTS ...

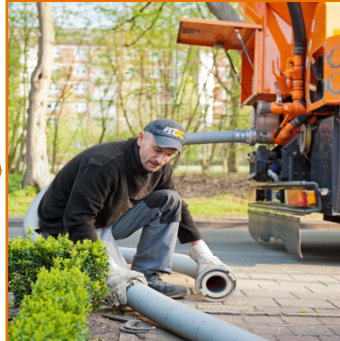
...most importantly high standards –  
throughout the whole supply chain!



Production



Trade



Consumer



Installers



stove specialists



RIKA Innovative Ofentechnik GmbH

**120 ENplus-certified pellet dealers in Germany**  
and about 600 qualified installers

Sources: DEPI

Source: © RIKA Innovative Ofentechnik GmbH



# ENplus REQUIREMENTS – TRADE (1)

- **Share of fines**
  - $\leq 1,0 \%$  for bulk pellets (at the time of loading)
  - $\leq 0,5 \%$  for bagged pellets (at the time of bagging)
- **Temperature at the time of loading for bulk delivery**
  - Maximum 40 °C (deviation from ISO 17225-2)
  - Minimization of off-gasing
- **Complaint management**
  - Appointment of a complaint manager
  - Preconditions for the acceptance of complaints regarding the amount of fines: if it exceeds 4 w-% in the store of the user.



# ENplus REQUIREMENTS – TRADE (2)

- **Mandatory quality trainings**
  - For quality managers and truck drivers with contact to end-users in the first year and then once every certification period, organised by DEPI (about 20/a)
  - Annual in-house trainings for the entire staff
- **Documentation**
  - Maintenance and cleaning measures
  - Delivery notes including prior freight of delivery trucks
  - Quality control (durability & fines) : testing procedures and results, defects and corrective measures, management of non-conforming pellets
  - Complaints and corrective measures
  - Quality trainings





# HIGH QUALITY REQUIREMENTS ...

...most importantly high standards –  
throughout the whole supply chain!



Production



Trade



Consumer



Installers



stove specialists



RIKA Innovative Ofentechnik GmbH

120 ENplus-certified pellet dealers in Germany  
and about **600 qualified installers**

Sources: DEPI

Source: © RIKA Innovative Ofentechnik GmbH





# HIGH QUALITY IN TECHNOLOGY AND FUEL

## Campaign „Qualified Pellet Installer“

for companies installing  
pellet boilers and storages

Heating with wood and pellets is much more  
complex than heating with fossile fuels



## Qualified Pellet installers need special skills regarding:

- origin and quality of wood fuels;
- emissions and efficiency;
- heating technology;
- **interaction between boiler and fuel storage;**
- financial incentives and public regulations.



# NEW CLIMATE PROTECTION PROGRAM 2030

German government presented actually a climate protection programme 2030: CO<sub>2</sub>-reduction of 40% compared to 1990

## Measures:

- Implementation of CO<sub>2</sub>-price (not dirty word “tax”) for energy in sectors traffic and building: increasing from 10 EUR/t CO<sub>2</sub> in 2021 to 35 EUR/t CO<sub>2</sub> in 2035
- Electricity: decrease of costs (today highest costs in Europe)
- Buildings
  - Costs for converting boilers and efficiency shall be set off against tax liability (20% of investment over three years)
  - Investment grant for converting boiler will be improved to 40% (today 25%).
  - No more installation of oil boilers in buildings possible, where renewable systems can be installed.



**Deutscher Energieholz- und Pellet-Verband e.V. (DEPV)**

10117 Berlin, Neustädtische Kirchstraße 8

Tel.: 030 - 6881599-66

Fax: 030 - 6881599-77

E-Mail: [info@depv.de](mailto:info@depv.de)

[www.depv.de](http://www.depv.de)

Source: Nhl.com

---

**THANK YOU FOR YOUR ATTENTION!**