



HAWKINS WRIGHT

HAWKINS WRIGHT

Pellet conference
SVEBIO
01/02/2023



The Outlook for Wood Pellets Demand, supply, costs and prices

A multi-client service comprising regularly updated forecasts of the wood pellet market's development

- Quarterly PDF reports (50-70 pages)
- Excel databases (listing global pellet mills and power plants)
- Quarterly webinars with Q&A
- Personalised workshop or presentation meeting
- Charts and background data on request
- Access to Hawkins Wright consultants and our response to ad-hoc questions

www.hawkinswright.com

fiona.matthews@hawkinswright.com



Bioenergy Team

70+ years (cumulated) of experience at your service

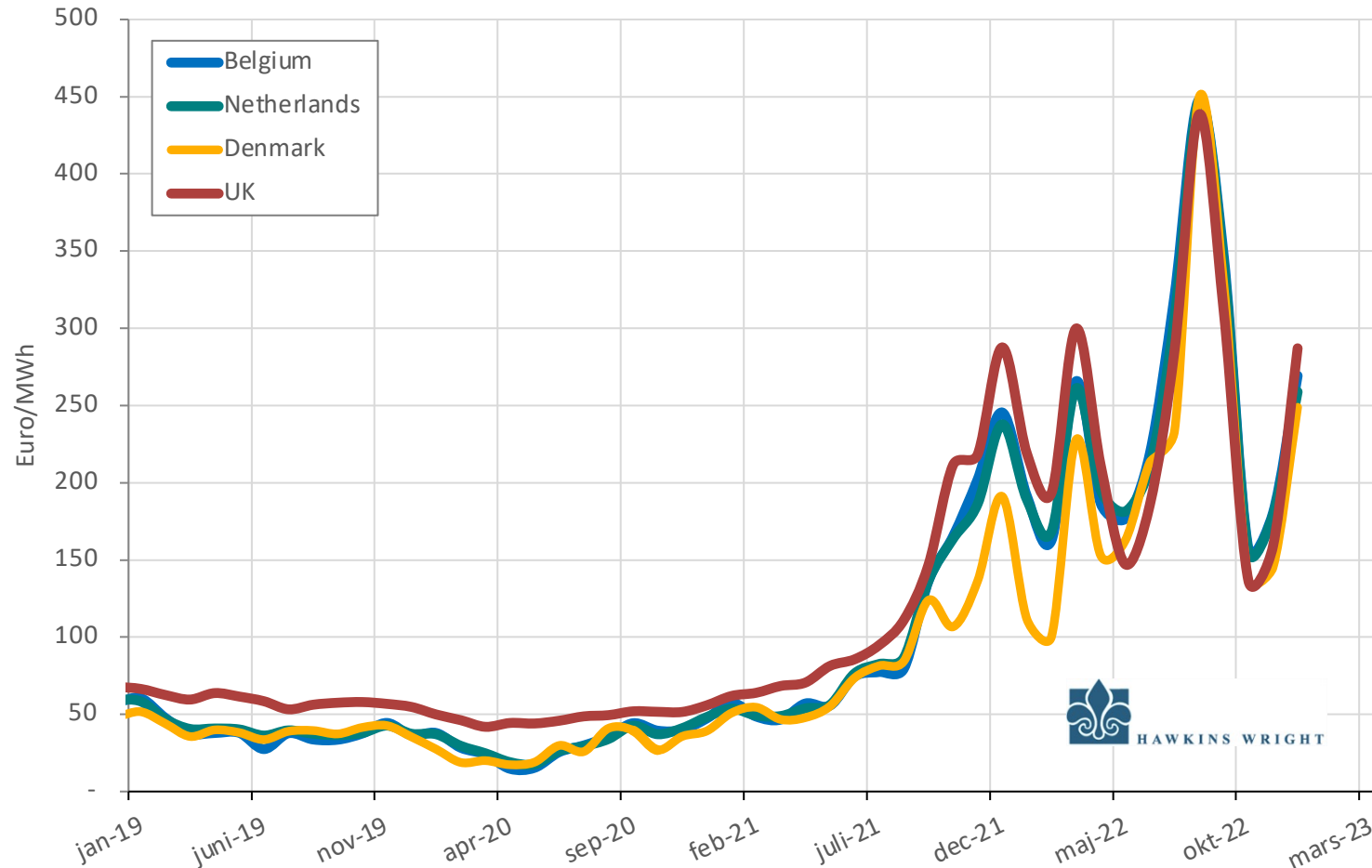


Energy and economic context



ENERGY MARKET CONTEXT

Day-ahead electricity prices to Dec-22



- Peak in August 2022
- Great price decrease in Q4 2022
- -46% Q4 vs Q3 2022

Electricity price => Greatest driver for industrial demand

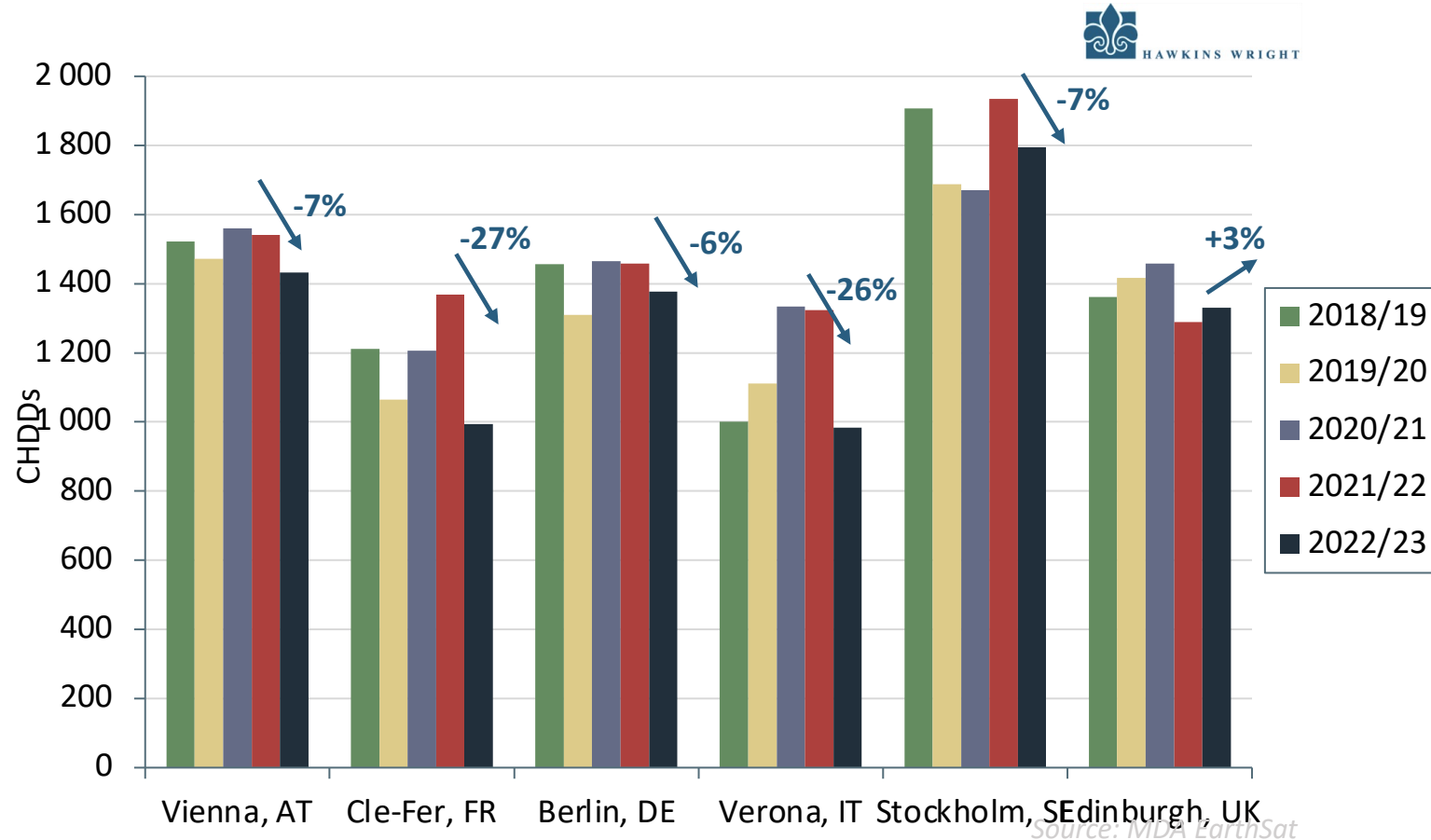


Source: Nordpool



HEAT DEMAND

Cumulative heating degree days in Oct-Jan 2018-2023



Source: MDA EarthSat

- Abnormal mild weather
- ⇒ up to 27% lower heat demand 22/23 vs 21/22

- October was the warmest on record

Heat demand => greatest driver for residential demand

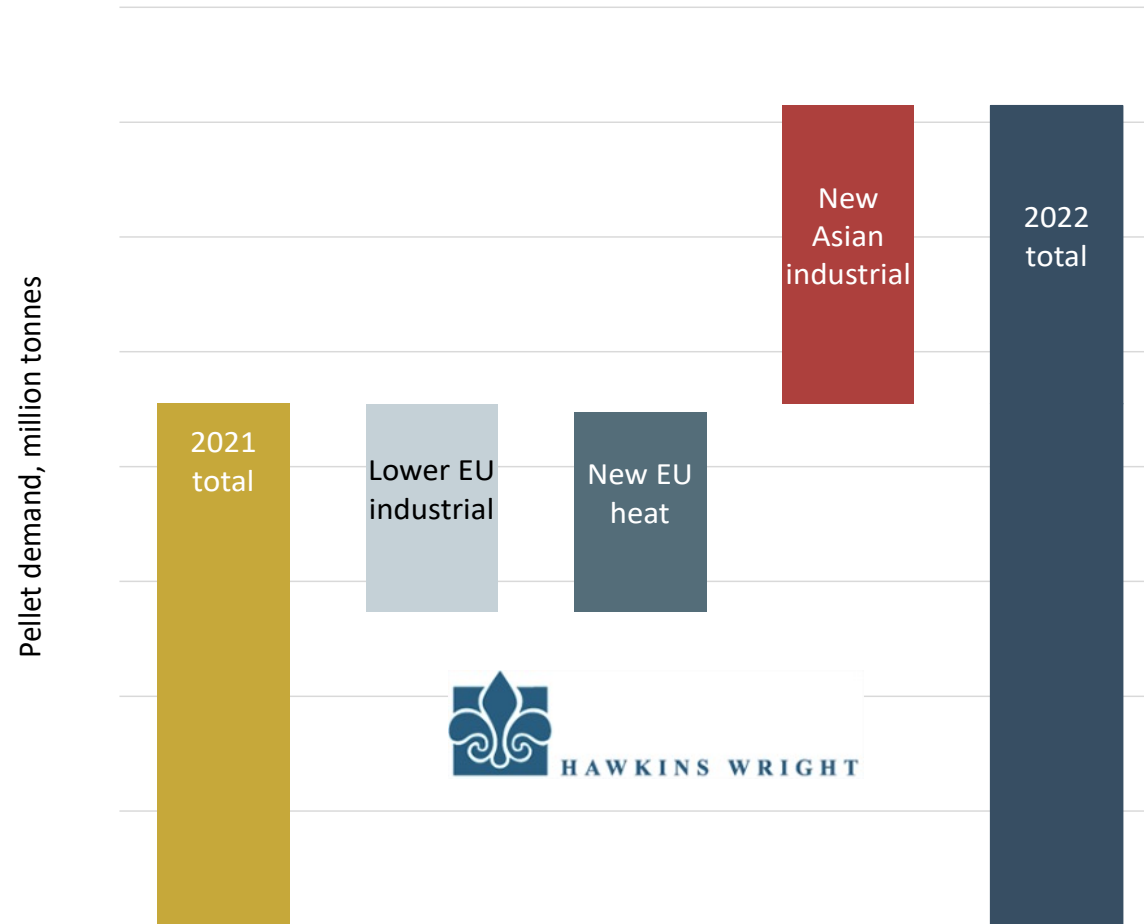
Demand





Changes in global demand in 2022 (provisional)

Summary of global pellet demand changes in 2022



- European industrial pellets demand 2022: significant demand destruction
- European heating pellets demand 2022: increase but lower than anticipated
- ⇒ European heating pellet demand exceeded industrial pellet demand for the first time since 2018
- Asian industrial pellets demand 2022: strong increase
- ⇒ Global wood pellets demand growth (22 vs 21): 6%

(22vs21 growth shrank by 50% compared to 21vs20)

*** « EU » includes EU27 + UK ***

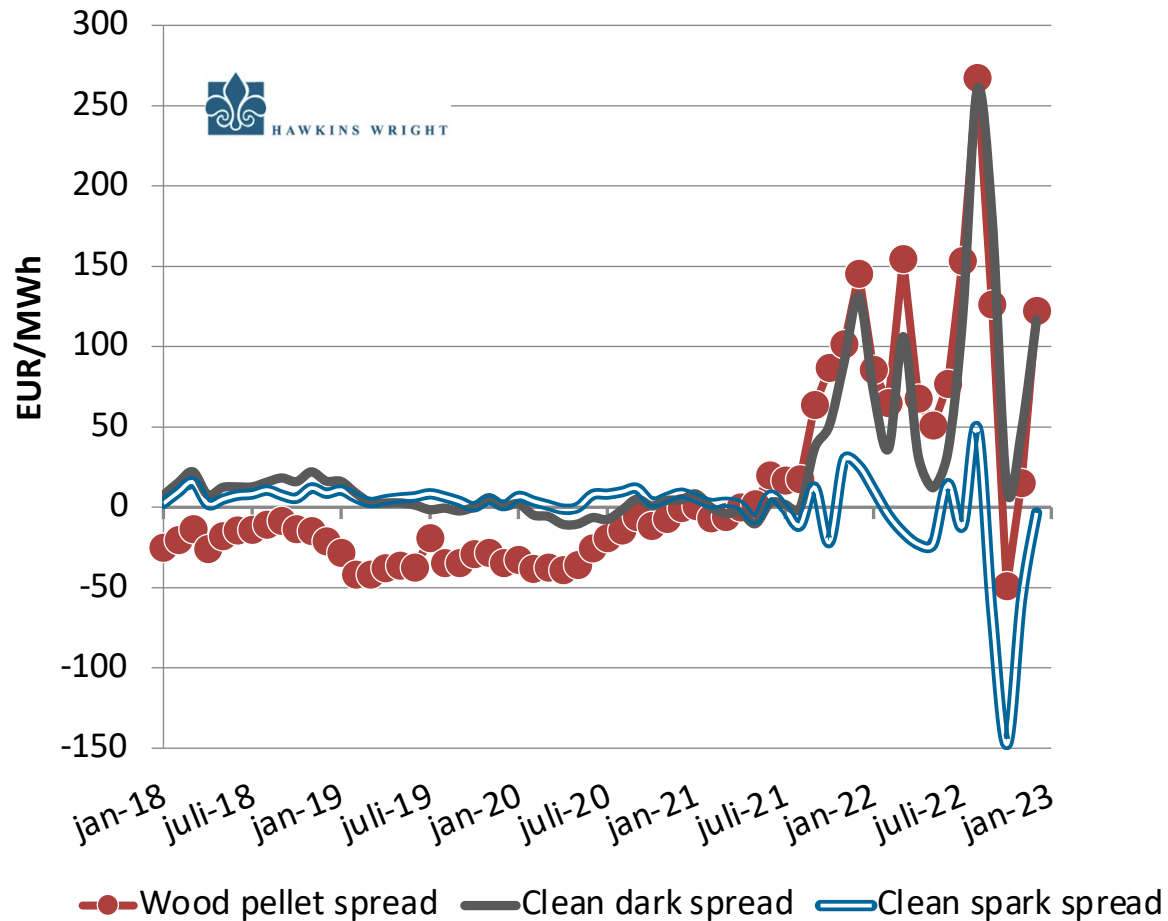
Source: Hawkins Wright

INDUSTRIAL DEMAND

Demand destruction late 2022



Dutch spreads to Jan 23 (@46%)



Changing conditions in 2022

- First, high electricity price so high profitability but limited pellet availability
- Later,
 - Lower electricity price so lower paying capabilities
 - Mild weather
 - Possibility to use coal (Netherlands)
- ⇒ Demand destruction
- ⇒ -1,8 million tonnes lower demand than anticipated

DATA EXCLUDES SUBSIDIES

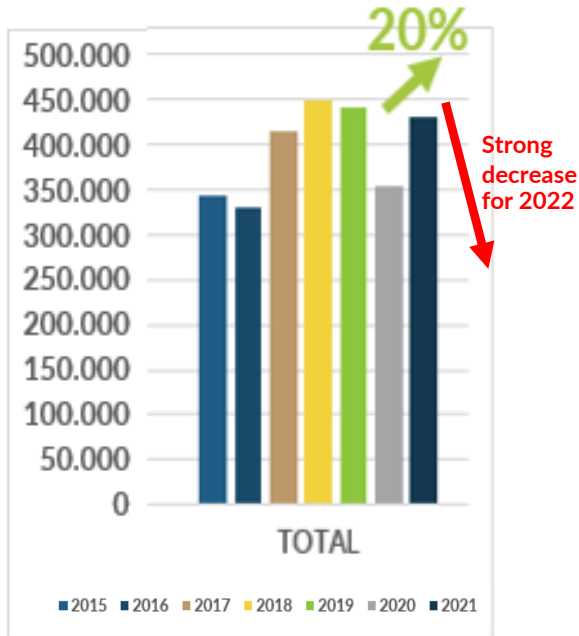
Source: Hawkins Wright

RESIDENTIAL DEMAND

European demand & heating appliances



Annual sales of pellets stoves in Europe (n° of units)



Annual sales of pellets residential boilers in Europe (n° of units)



Source: Bioenergy Europe

2022-2023 heating season

- Low heating demand: greatest impact
 - Recession and high pellet price: second greatest impact
 - Pellet users: changing behaviour
 - Sales of heating appliances: lower than anticipated
- ⇒ 1.8 millions tonnes additional demand 2022 vs 2021

(lower demand than expected earlier in 2022)

Sales of pellet stoves/boilers in Europe

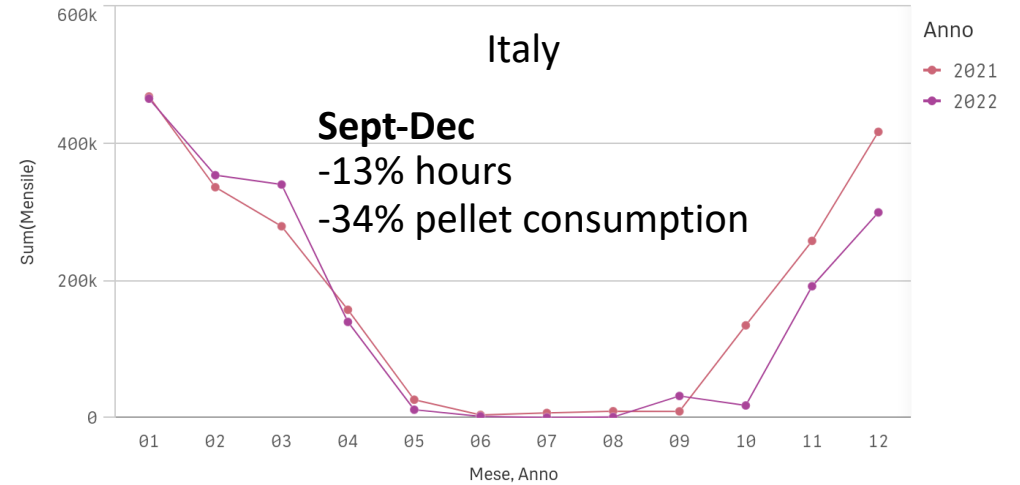
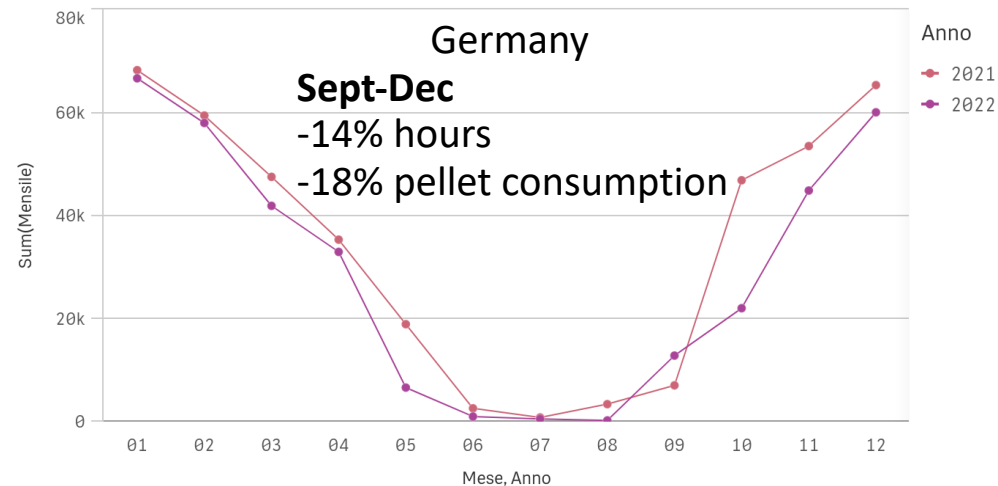
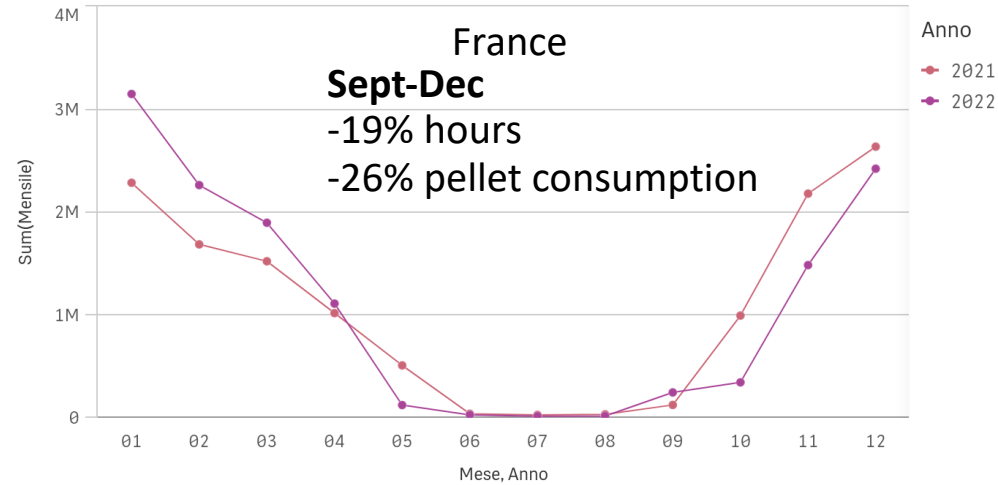
- 2022 H1 records sales
- 2022 H2 sales strong decrease (even more for stoves)

Future demand to be influenced by

- Heating demand
- Pellet reputation/users' trust
- Regulation

RESIDENTIAL DEMAND

Pellet users: changing behaviour



Note: the charts displayed in this slide only show the behaviour of Palazzetti stoves users

Source: PALAZZETTI IoT Data Platform

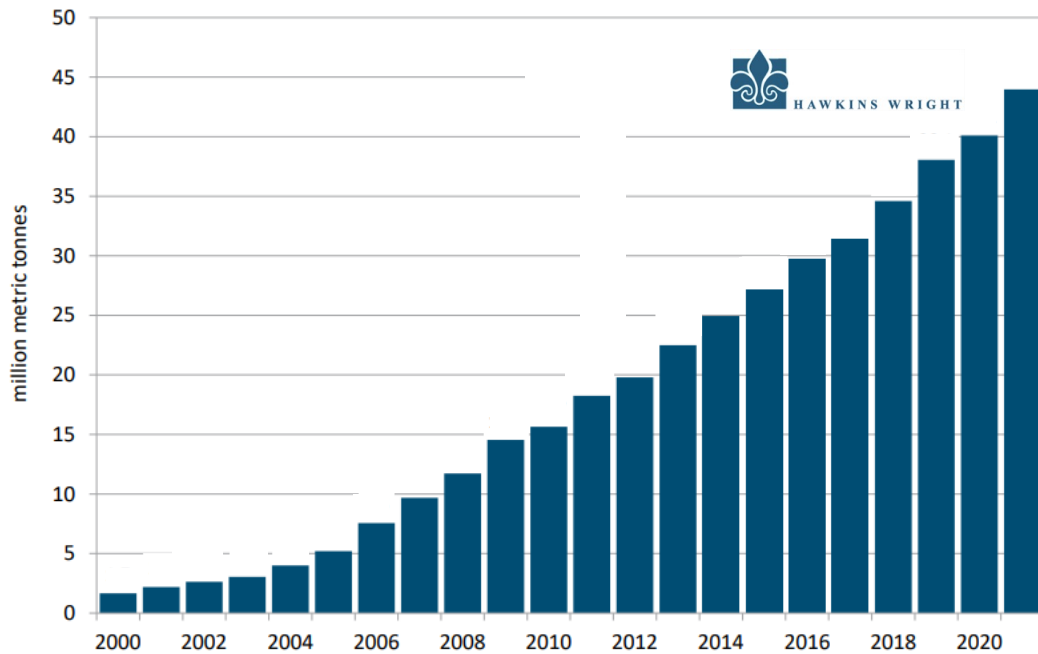
Wood pellet supply



GLOBAL SUPPLY



Global wood pellet production 2000-2021



Source: Hawkins Wright

Pellet supply to Europe in 2022

- Early 2022: low level of stock at the end of 21-22 heating season
- Later in 2022: great supply tightness
 - Noticeable market reaction to tight supply still insufficient at first
 - « loss » of Russian, Belarussian supply (July)
- End of 2022:
 - Enhanced convergence between industrial and residential markets
 - Supply tightness eased significantly
- Today: high stock levels for most European suppliers

Raw material availability/price

- Raw material situation stabilising/improving (Baltic, Germany, Vietnam) in Dec22-Jan23
- Sawmilling activity will be key for raw material availability and price

Future additional capacity

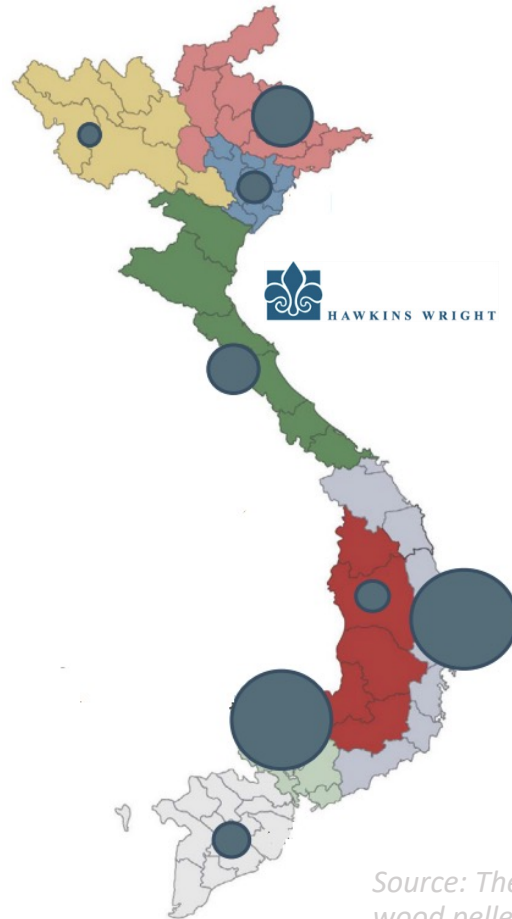
- US Big capacity mills under development again
- SE Asia
- South America (incl. Chile)
- Europe



GLOBAL SUPPLY

Vietnam pellet production

Vietnam pellet map



Source: The outlook for wood pellets Q4 2022

- Vietnam second largest pellet producing country, behind USA
- Production of 4.6 million tonnes in 2022
- Almost all for export to Japan and Korea
- Revised upward Vietnamese pellet production capacity
- 3 million tonnes production in project

Hawking Wright pellets mill database just updated

Global pellet mills database (1000+ entries)



Hawkins Wright
Outlook for Wood Pellets, Q4 2022 - Pellet Mill Database
****This file is CONFIDENTIAL to Outlook for Wood Pellet subscribers****

Tab	Description	Link
1.1	Pellet mill capacity table	→
2.1	Canada pellet mills	→
2.2	US pellet mills	→
2.3	EU/UK pellet mills	→
2.4	Other Europe pellet mills	→
2.5	Russia pellet mills	→
2.6	Asia pellet mills	→
2.7	Rest of world pellet mills	→

Any questions or comments please contact Rachael Levinson at

Wood pellet prices

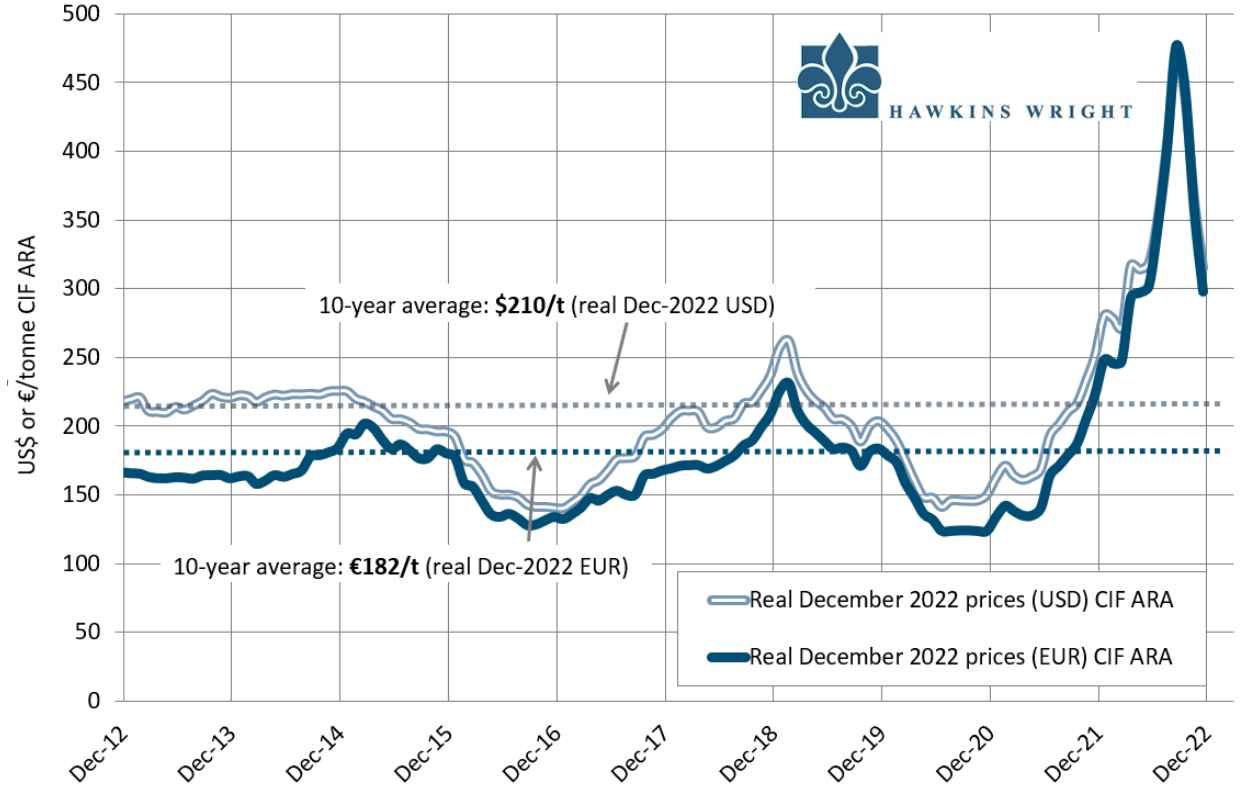


INDUSTRIAL SPOT PRICE



- Demand dropped in Q4 2022
 - Market tension eased significantly
 - European industrial spot prices dropped in Q4 2022
- ⇒ Down -7% on Q3 2022 but still up +77% compared to a year earlier

Wood pellet spot prices, \$/t and €/t CIF ARA



Source: Hawkins Wright

RESIDENTIAL PELLET PRICE



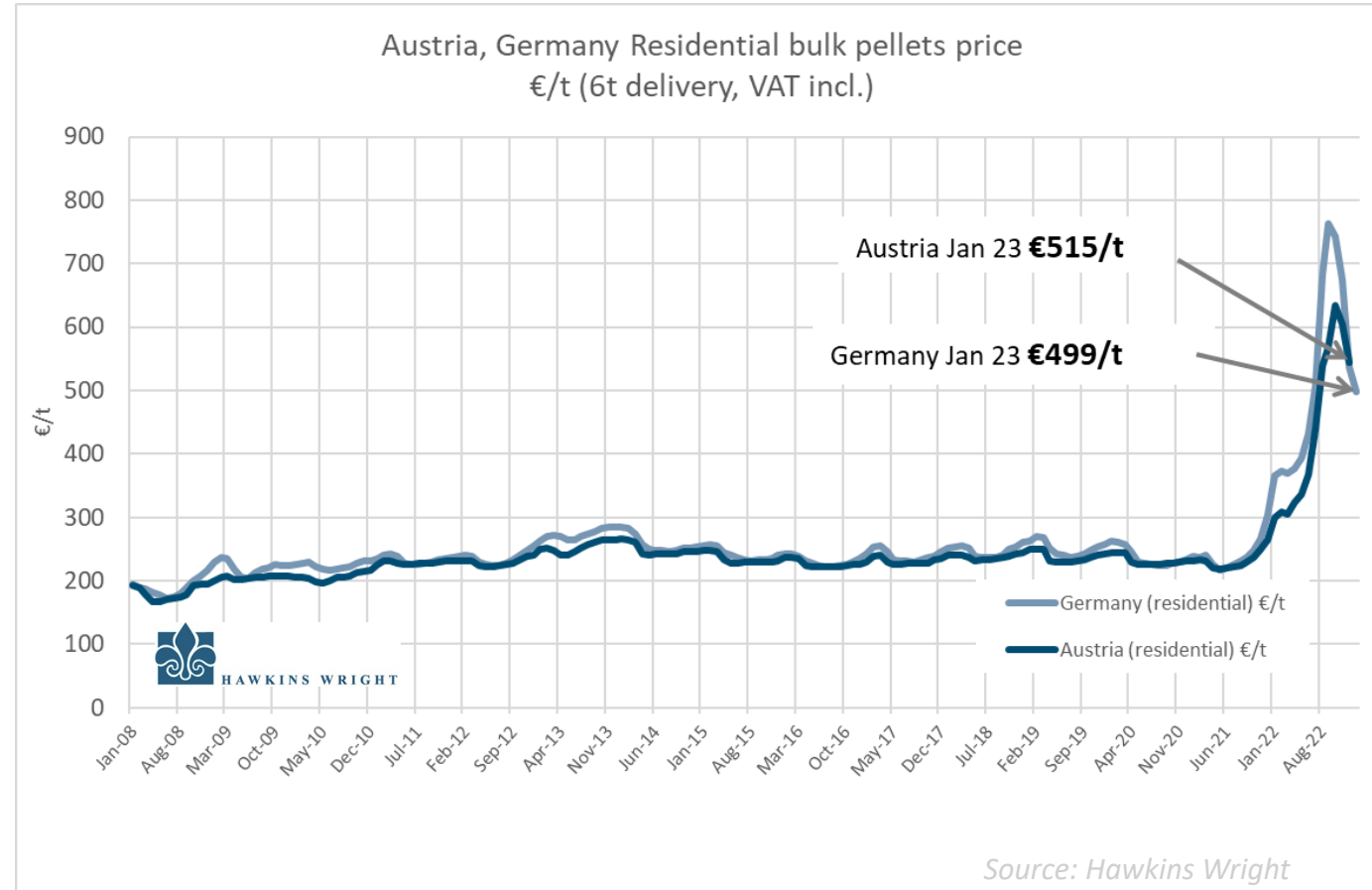
Europe

- Market tension eased significantly

Country focus

- Germany: continuous price decrease since September
- Austria: continuous price decrease since October
- Other countries: slightly different reaction time

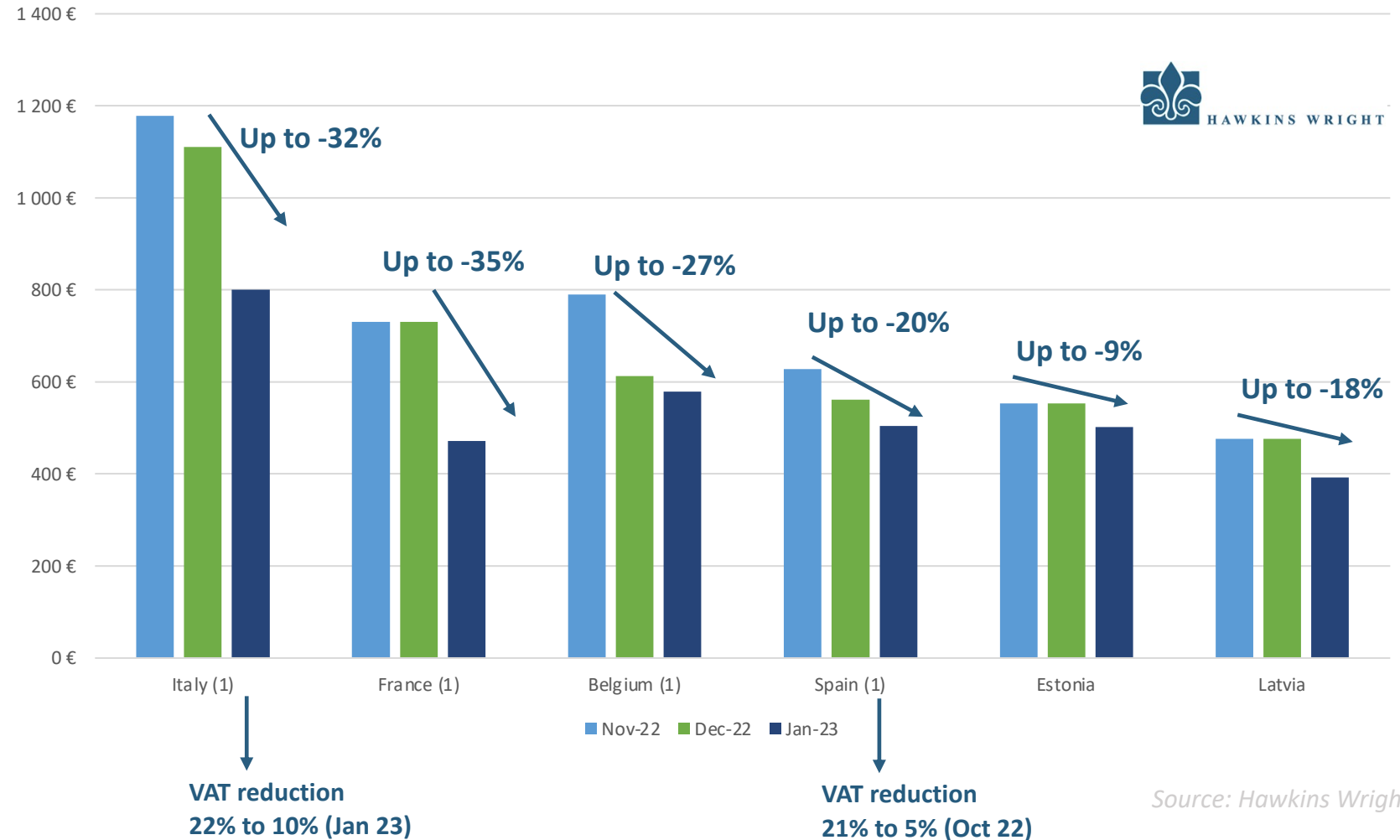
Austria, Germany Residential bulk pellet price €/t (6t del., VAT incl.)



RESIDENTIAL PELLET PRICE



Bagged pellet price €/t (retail price, VAT incl.) in some European markets



- Other European markets saw price decrease happening later than Germany, Austria
- Ex-works price had decrease for some time in several countries without translating in retail price decrease
- Further decrease expected if heating demand remains low

** The prices displayed in this slides are not consolidated national prices but better a compilation of individual retail prices**

Source: Hawkins Wright



Conclusion & Future trends

Summary & future trends



Lower power prices dented utilities paying capability in October-November

Continued downtime at many utilities and higher coal usage for some

Heating market growth slowing

Significantly reduced demand has improved this winter's situation

We expect the market to be undersupplied in 2023, but significant demand uncertainties persist

The structural shortage in the market will support price rises next winter