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INEOS
Inovyn



INEOS INOVYN is part of INEOS Group



INEOS Group overview



\$61 bn Turnover



26,000 employees



36 Businesses



66 million tons of chemicals capacity



20 million tons of refinery products
(420,000 bbls/day)



26 million boe per annum

194

manufacturing
sites worldwide

29 Countries

84 sites
in Europe



80 sites in
Americas

25 sites
in Asia

5 sites
in ROW



INEOS INOVYN overview



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Inovyn

INEOS INOVYN - key dimensions

Profile

Annual Commercial Volume

10 million tonnes



Sites

15 manufacturing Sites in 8 countries



Turnover

€4.5 Billion



Pedigree

INEOS BASF
Tessenderlo Chemie
ICI SOLVAY
EVC Norsk Hydro

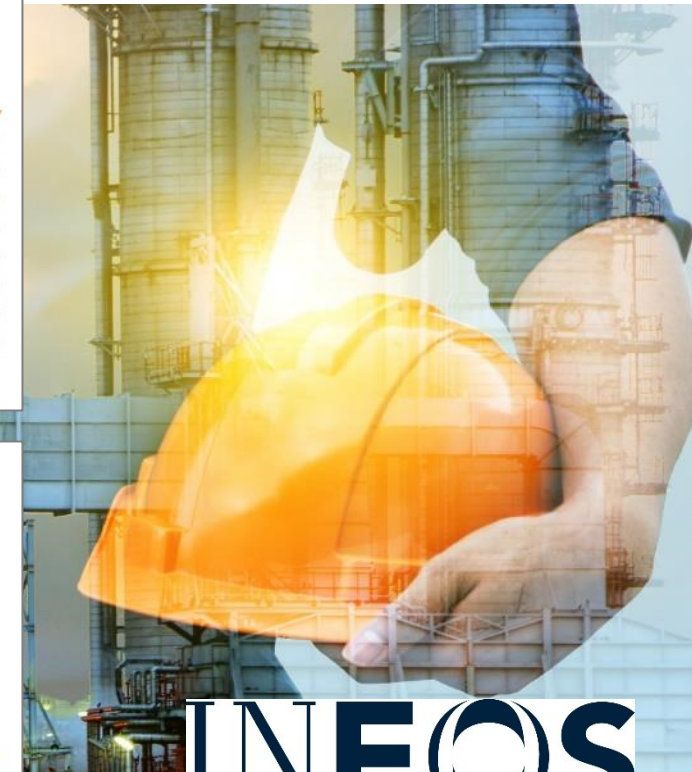
Employees

4200



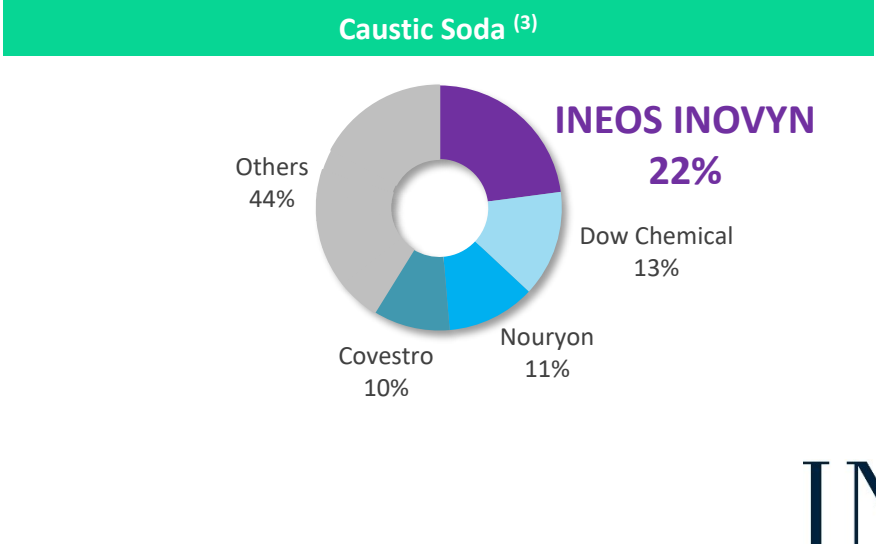
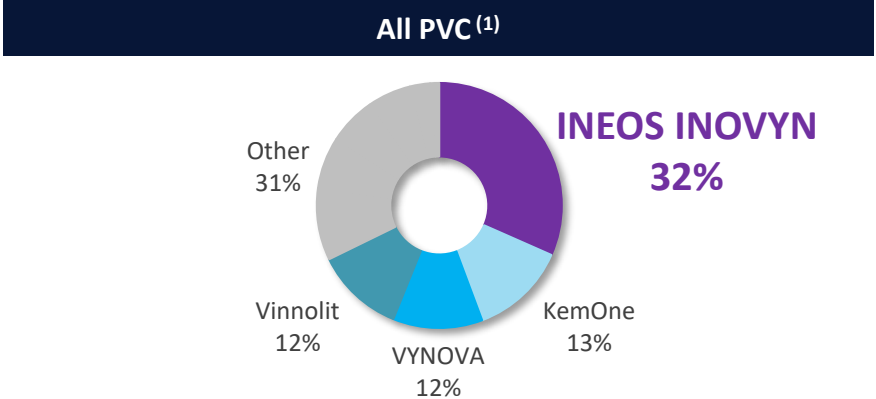
Key Brands

CERECOR™
BIOVYN™
INOVYN™ PVC



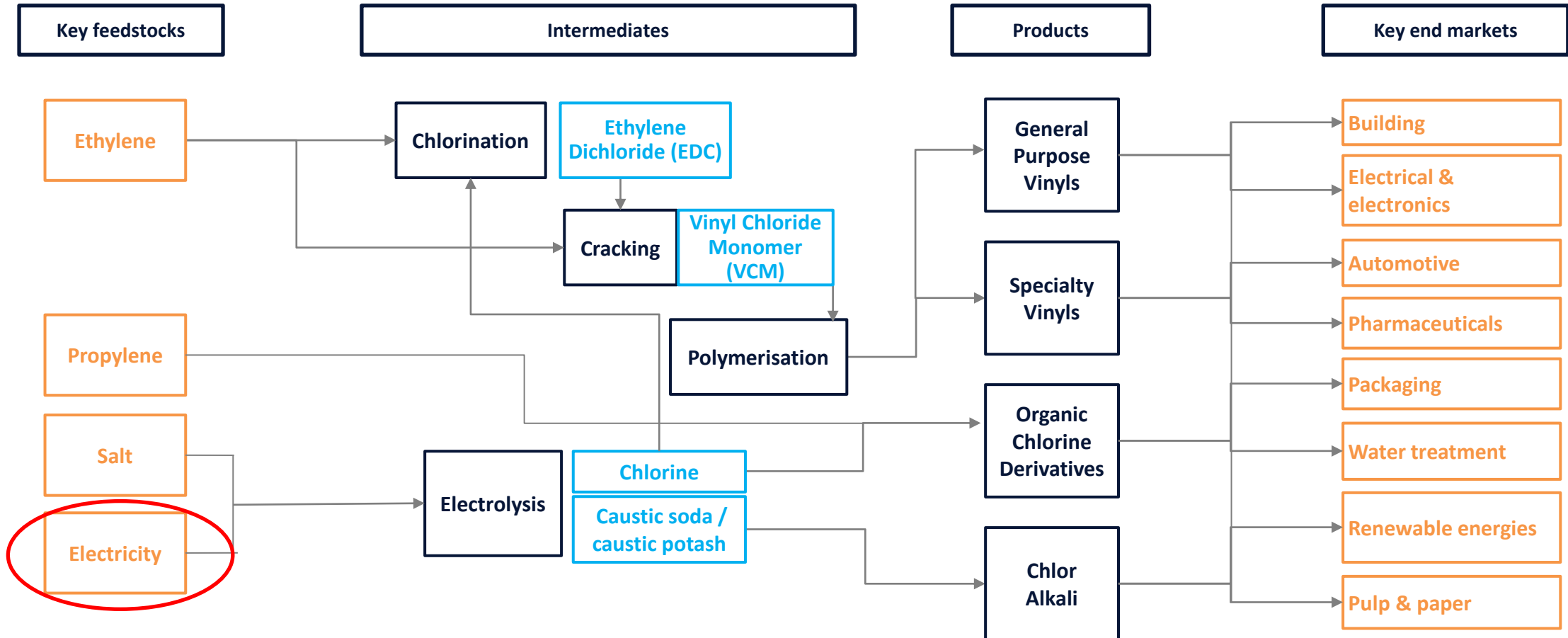
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INEOS INOVYN is the European leader



Source: IHS, company information
 1. Capacity market share for EEA (2017), excluding Oltchim
 2. Based on management estimates for merchant market share
 3. Merchant market share for caustic soda liquor (EEA 2016)

The INEOS INOVYN value chain



Production > 40 million tonnes per annum





The importance of electricity for INEOS INOVYN

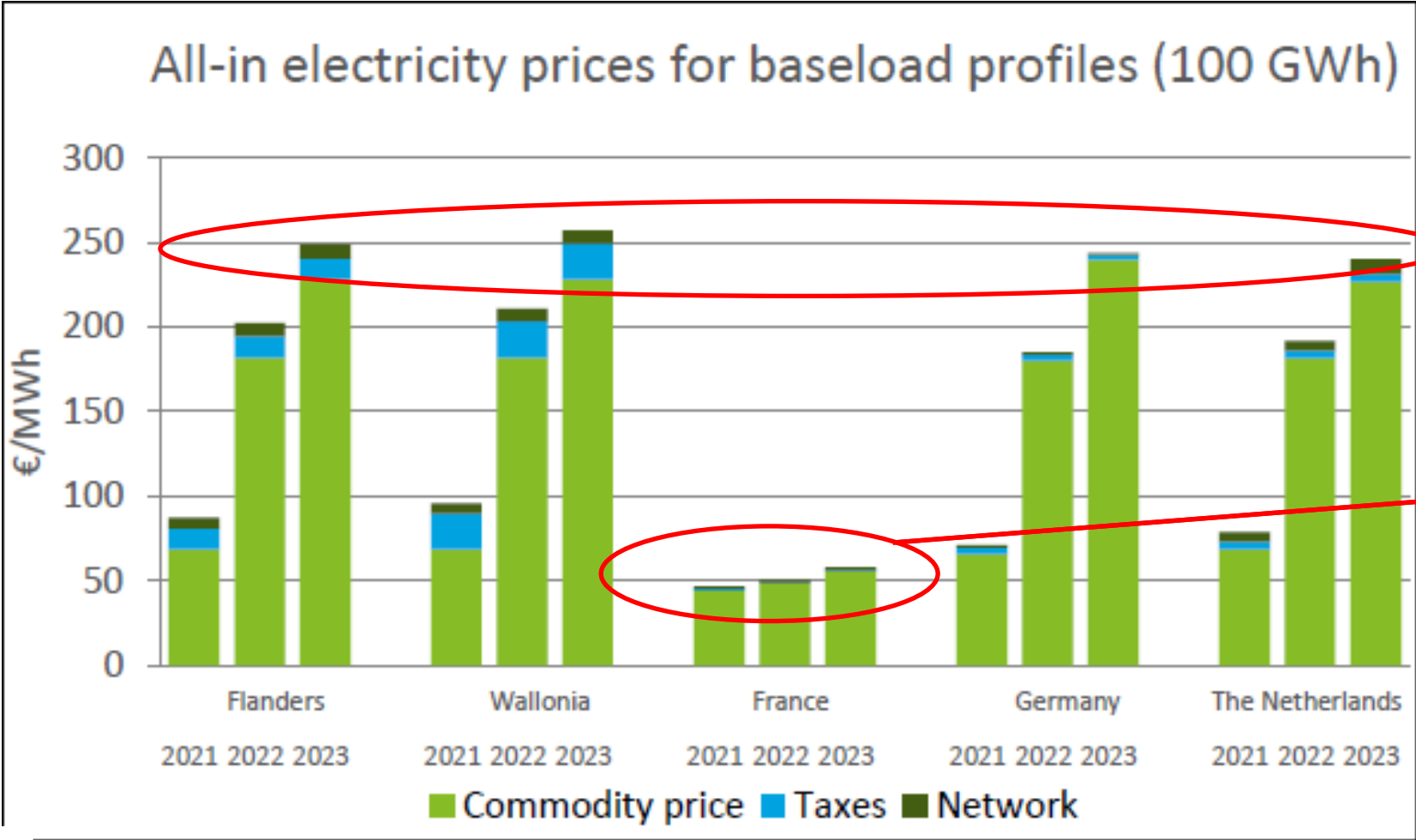


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The importance of electricity for INEOS INOVYN

- INOVYN electricity consumption (typical GWh/y) :
 - Europe : 6250
 - Belgium : 2050 Antwerp (An) : ~1200 GWh/y, Jemeppe (Je) : ~650 GWh/y (~50 GWh/y net)
 - France : 1200
 - Germany : 500
- European investments/projects since INOVYN creation in 2016 :
 - 2016 : Jemeppe (BE) : acquisition of the local cogeneration unit
Antwerp (BE) : **capacity expansion (+20%) of electrolysis**
 - 2017 : Antwerp (BE) : capacity conversion of electrolysis from NaOH to KOH
 - 2018 : Tavaux (FR) and Rheinberg (DE) : **capacity expansion of electrolysis**
 - 2019 : Jemeppe (BE) : capacity conversion from PVC commodities to PVC specialties
Stenungsund (SE) : capacity conversion of electrolysis
 - 2020 : Rafnes (NO) : **capacity expansion of the electrolysis** and vinyls chain
Jemeppe (BE) : capacity expansion of the vinyls chain
 - 2021 : Stenungsund (SE) : capacity expansion of PVC production
 - 2023 : Rafnes (NO) : **capacity expansion of the electrolysis**
Rheinberg (DE) : capacity expansion of the VCM production
 - 2025 : Jemeppe (BE) : **marginal capacity expansion of the electrolysis, but project questioned due to electricity cost**
Rafnes (NO) : capacity expansion of the VCM production

Deloitte 2023 study for JEMEPPE : confirmation of 2021/2022



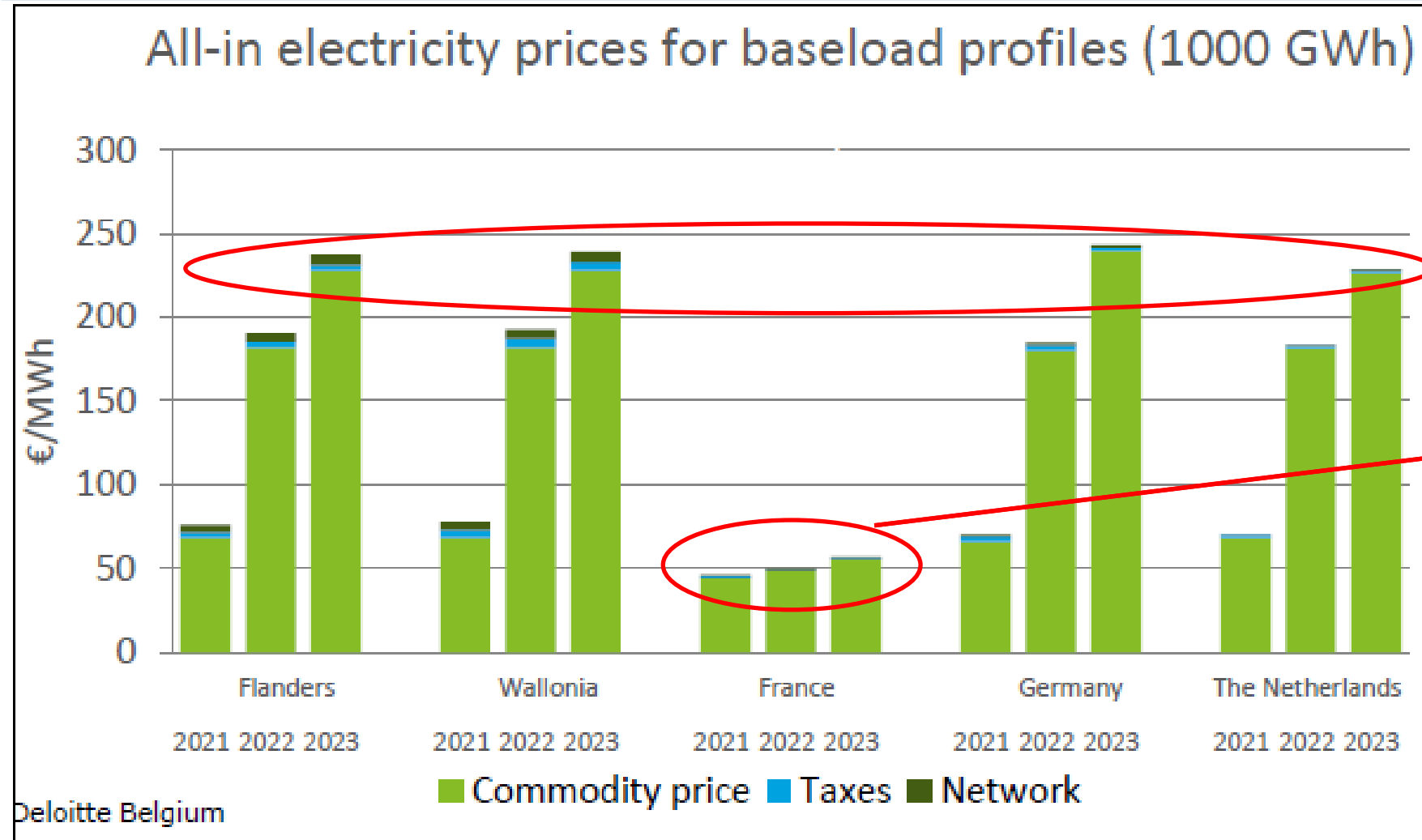
A difference of 10 €/MWh is equivalent to 1 M€/y for 100 GWh/y

A difference of 200 €/MWh is equivalent to 20 M€/y for 100 GWh/y



Deloitte 2023 study for Antwerp : confirmation of 2021/2022*

* Except for Germany (before price cap application)



A difference of 10 €/MWh is equivalent to 10 M€/y for 1000 GWh/y

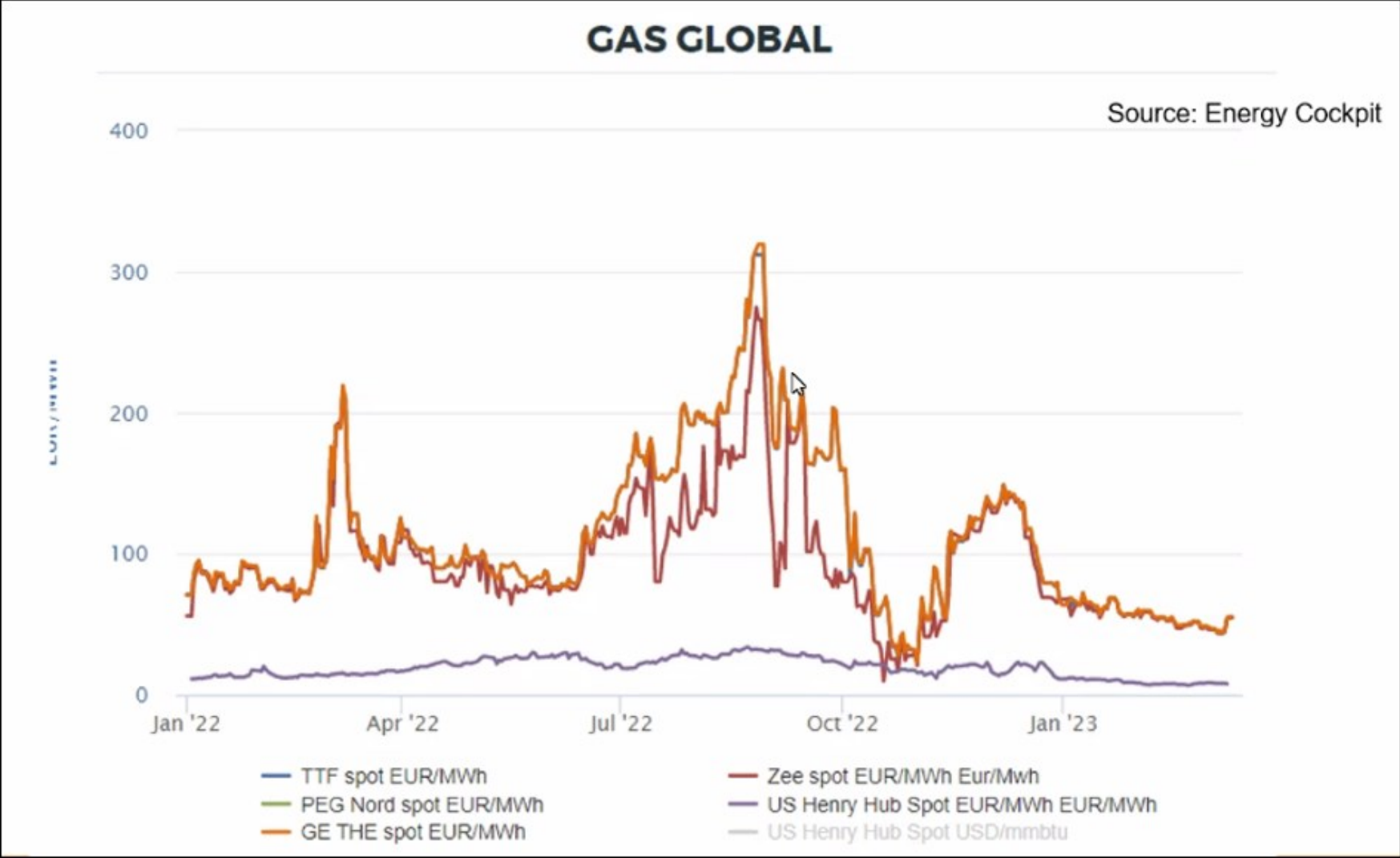
A difference of 200 €/MWh is equivalent to 200 M€/y for 1000 GWh/y



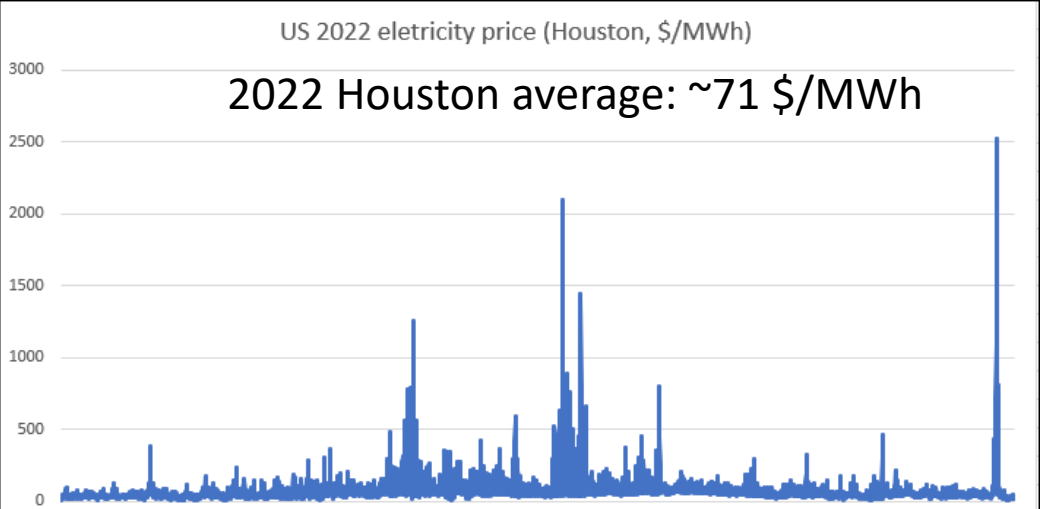
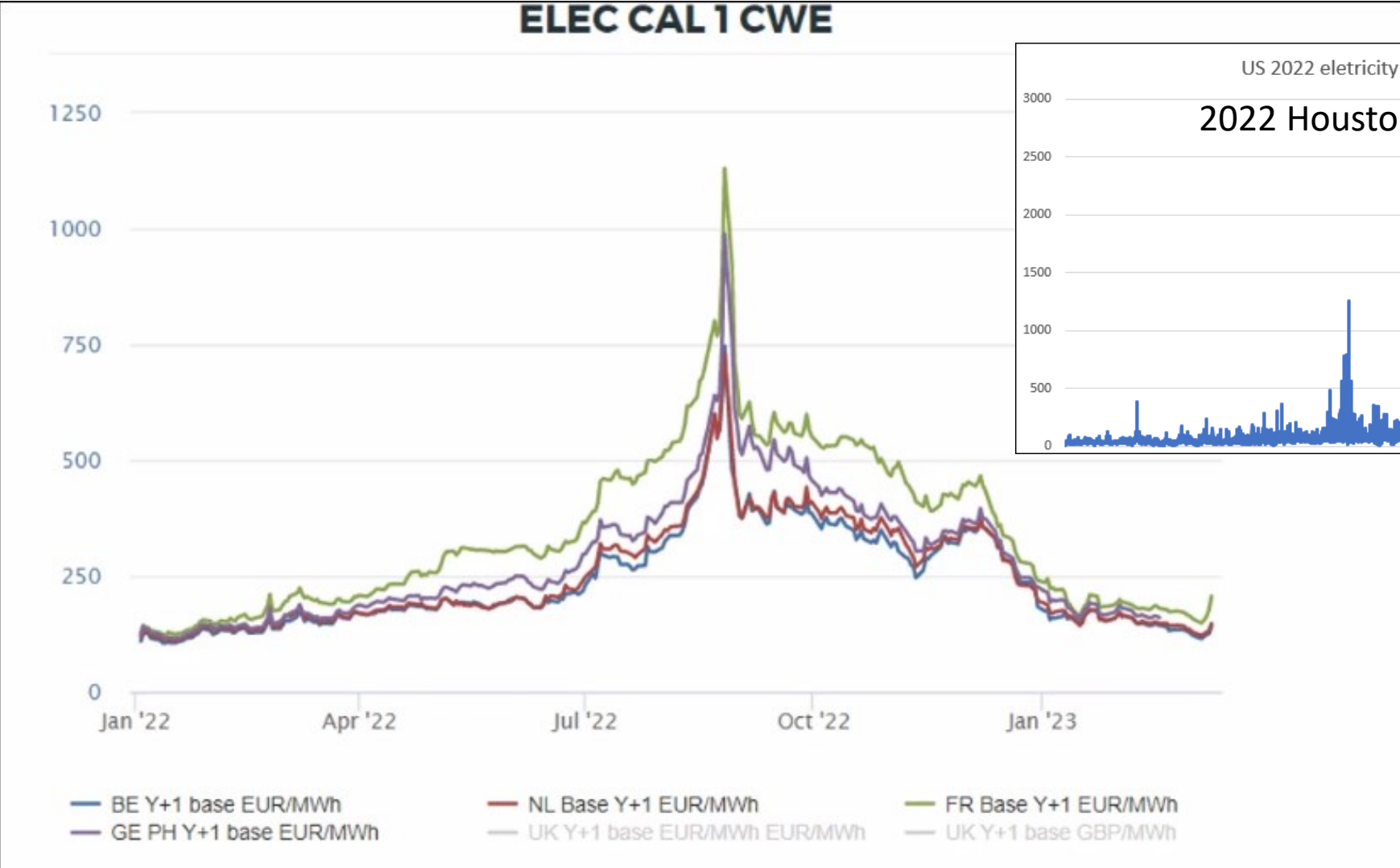
Belgium Electricity Competitiveness in 2023

- **Additional short/medium terms threats vs EU/WW competition :**
 - **Federal issues impacting Belgium competitiveness :**
 - Security of supply in case of delay of 2 GW nuclear extension
 - Slow decision-taking on grid capacity adaptation to renewable impact (offshore, PV, ...)
 - Transportation tariff increase (80%?) for 2024-2027, and more after
 - **EU issues impacting WW competitiveness :**
 - Electricity price spike vs other WW regions (gas price impact)
 - Direct CO2 emission : impact of current CO2 price increase
 - Indirect CO2 emissions compensation :
 - Limitation of eligible activities for compensation
 - Reduction of BE compensation emission factor (EF)

EU Gas & Electricity Competitiveness vs US



EU Gas & Electricity Competitiveness vs US



Belgium Electricity Competitiveness in 2023

- **Short/medium terms threat (M€/y) :**

	Antwerp (1200 GWh/y)	Jemeppe (50 GWh/y)
– BE electricity price spike due to EU gas price spike		
• Hyp : @200 €/MWh vs ~50 €/MWh until 2020	+180 M€/y	+7.5 M€/y
– EU indirect CO2 emission compensation (CO2 @ 100 €/t)		
• Reduction of eligible activities	+1 M€/y	+4 M€/y
• BE EF reduction (0.76 -> 0.51 t CO2/MWh) (FR : 0.51, DE : 0.75, NL : 0.50, ...)	+19 M€/y	+8 M€/y (*)
	(*) in case of max compensation in Wallonia vs EU rules	
– EU direct CO2 emission cost increase (CO2 @ 100 €/t today vs < 30 €/t until 2020)		
• Emission not covered by free allocations in 2022	+1 M€/y	+17 M€/y

Belgium Electricity Competitiveness in 2023

- **Conclusion :**

- **Deloitte 2023 study : 2021/2022 conclusions mainly confirmed**

- Handicap > 1~10 M€/y for Inovyn sites in BE vs neighboring countries (NL, DE, ...)
- Up to 20~200 M€/y vs FR due to significant nuclear capacity

- **Additional major threats for Belgium electricity competitiveness vs EU/WW**

- Up to +~40 M€/y vs 2020 for 50 GWh/y baseload consumption with local CHP
- Up to +~200 M€/y vs 2020 for 1200 GWh/y baseload consumption

→ **Urgent need to restore Belgium competitiveness of electricity price for industrial consumers !**