Deloitte.

Benchmarking study of electricity prices between Belgium and neighboring countries

2023

Benchmarking study

Content

Objectives and scope of the benchmarking study

Objectives and scope of the benchmarking study

The **primary objective of the study that Febeliec requested from Deloitte** is to obtain an overview of possible **price differences for electricity** purchased on the electricity market by major industrial consumers in Belgium, such as the members of Febeliec, as compared to their peers in France, the Netherlands and Germany.

- The **primary focus** is on **relative price differences** that exist on the market for Febeliec member profiles using identical, simplified, standardized, load (baseload and peak load) and volume profiles (ranging from 100 GWh to 1000 GWh).
- The **study covers** the actual prices for electricity that can be purchased in the relevant electricity markets in the **period 2021, 2022 and 2023** based on existing legislation and policies.

Benchmark methodology

Benchmark methodology

The relevant electricity price components used in this study are based solely on public data sources.

Market price:

Market prices are **based on electricity market quotations** (using appropriate combinations of spot & forward prices) to obtain objective data that is comparable over the different Febeliec members.

This pricing approach neutralizes the impact of:

- Different sourcing and hedging strategies
- Historical long term sourcing contracts concluded under different market conditions

Network costs:

Network costs are regulated tariffs applied by the transmission grid operators (TSOs) for the transport of electricity over the transmission network (excluding distribution).

Electricity taxes:

Represent all taxes and other levies that are to be paid on top of the market price and network costs in the different jurisdictions. All countries and regions in this study apply hardship regimes for different electricity surcharges and taxes for specific activities and/or offtake volumes. The different countries and regions apply various rules and criteria, though in most cases the European EEAG (Guidelines on State aid for environmental protection and energy) apply in order to avoid illegal state aid and/or distortion of competition.

In this study, it is assumed that consumers are rational and benefit from the maximum possible exemptions for qualified industrial activities. This does not exclude that specific (categories of) consumers benefit either from higher exemptions (e.g. very high energy-intensive activities or specific activity sectors) or from lower exemptions (e.g. consumers in specific activity sectors).

Results of the benchmarking study

Baseload profile

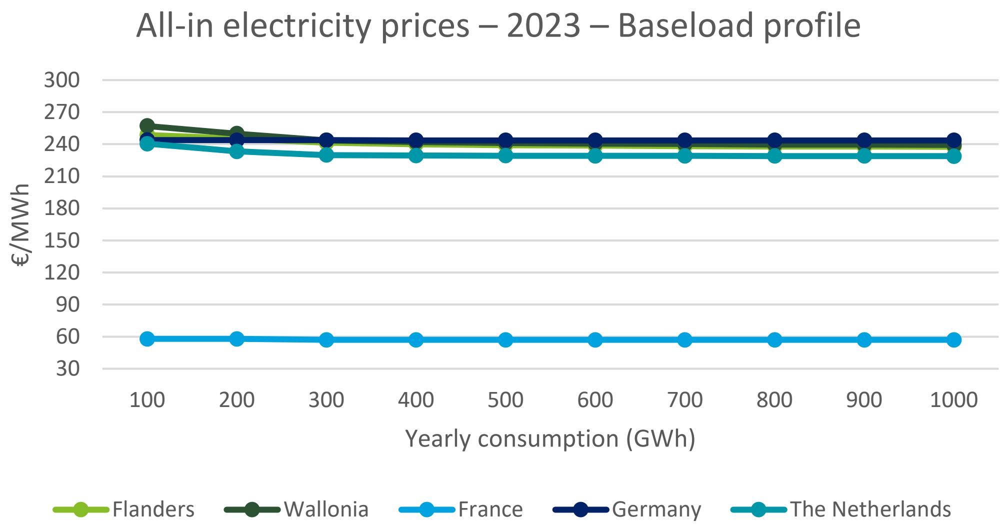
Results of the benchmarking study

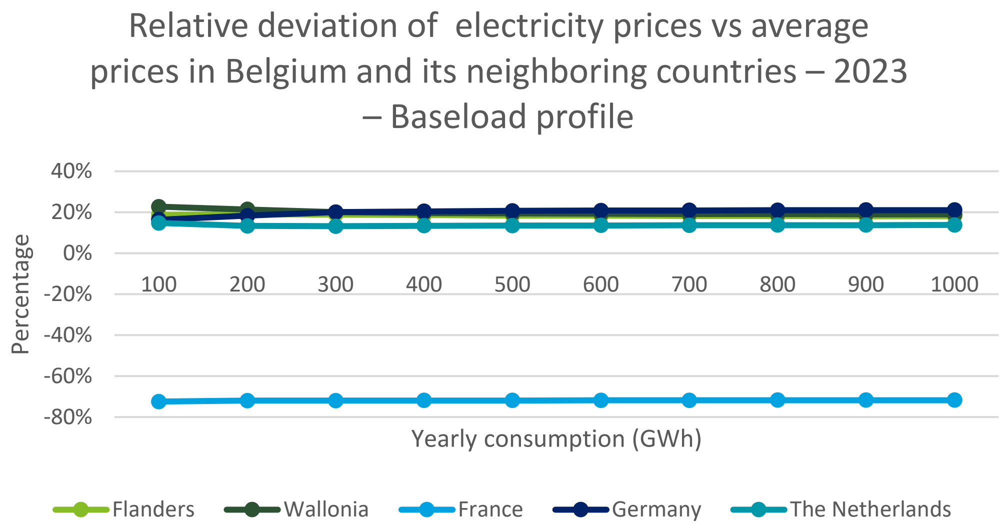
Baseload profile

- Benchmark all-in electricity prices of a **baseload profile**
- Comparative overview of:
  - Market prices
  - Network costs
  - Electricity taxes

Benchmark all-in electricity prices

Baseload profile





Large industrial baseload consumers are facing higher all-in prices for electricity purchased in Belgium versus those in neighboring countries.

- In 2023, we observe all-in electricity prices ranging from **58€/MWh** in France, to **244€/MWh** in Germany, to **249€/MWh** in Flanders and up to **257€/MWh** in Wallonia for a 100 GWh baseload consumer. For the 1000 GWh baseload profile, prices vary between **57€/MWh** in France and **244€/MWh** in Germany.

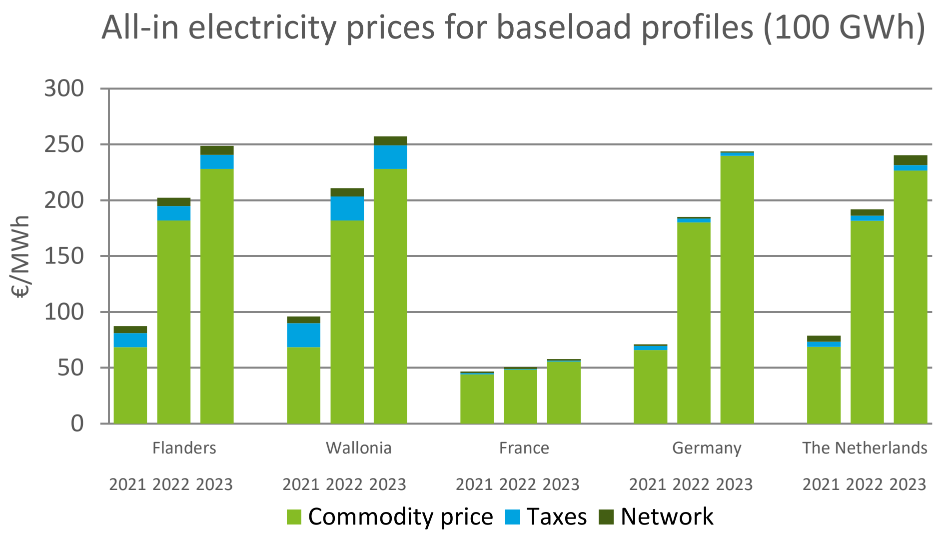
- In Flanders, results show a difference in electricity price of approximately **36€/MWh (+18%)** for a 1000 GWh industrial consumer and up to **39€/MWh (+19%)** for a 100 GWh industrial consumer compared to the average of the electricity prices of all countries in scope of the study. In Wallonia, we see differences of approximately **38€/MWh (+19%)** for a 1000 GWh industrial consumer and up to **48€/MWh (+23%)** for a 100 GWh industrial consumer compared to the average of the electricity prices of all countries in scope of the study.

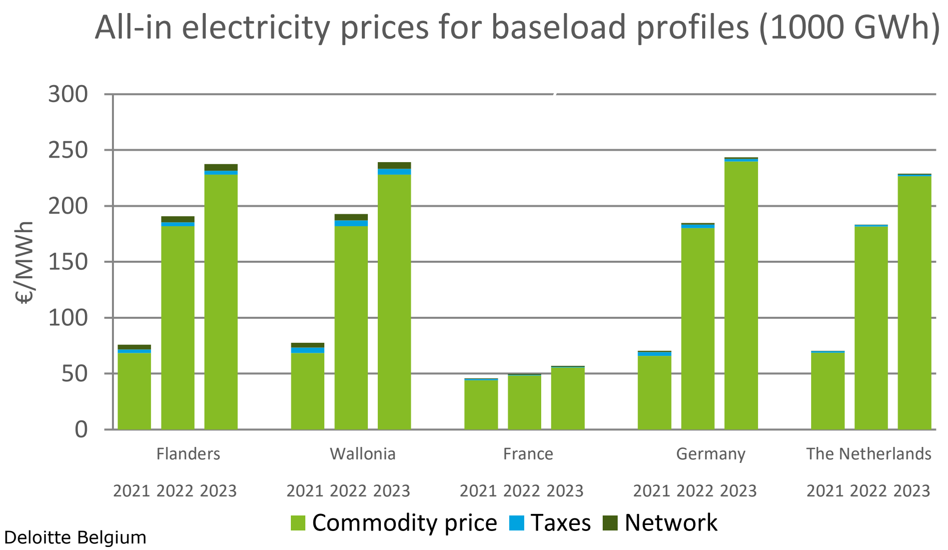
- For a 100 GWh baseload consumer, this represents an annual all-in electricity cost difference of **3,91 million EUR** in Flanders and **4,75 million EUR** in Wallonia (compared to the average of the countries in scope).

- For a 1000 GWh baseload consumer, this represents an annual all-in electricity cost difference of **36,31 million EUR** in Flanders and **38,07 million EUR** per year in Wallonia (compared to the average of the countries in scope).

Benchmark all-in electricity prices

Baseload profile





The all-in **electricity prices have increased** in Belgium **in 2023 compared to 2022,** which is the case for all countries in scope. For Flanders and Wallonia, we see an increase in all-in electricity prices of **24%** for both regions, for a 1000 GWh profile and **23%** and **22%**, respectively, for a 100 GWh profile.

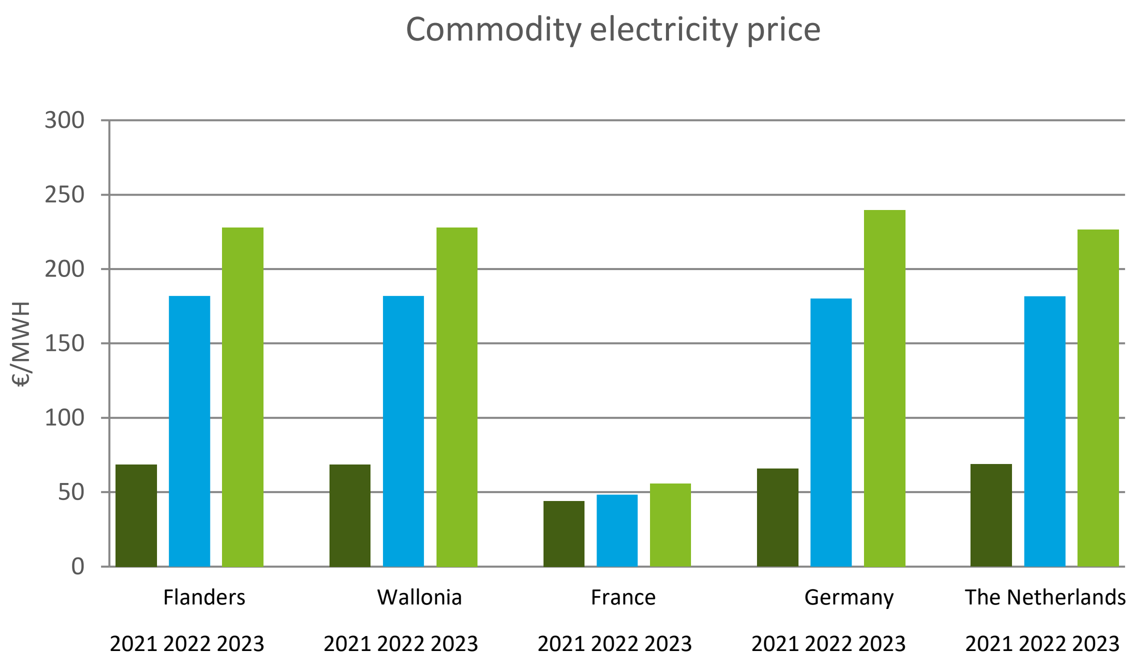
This increase is partially explained by an increasing commodity cost (+25%). Network costs have also increased (**8%** for a 100 GWh profile and **10%** for a 1000 GWh profile), both in Flanders and in Wallonia. For 100 GWh profiles, we see a slight decrease in taxes compared to last year of less than **1%** for Flanders and more than **1%** for Wallonia. For 1000 GWh profiles, there's an increase in taxes of around **1%** for Wallonia and an increase of **3%** for Flanders.

The all-in electricity prices for baseload profiles in Belgium have increased in 2023 and are higher than in the neighboring countries, except for a 1000 GWh consumer in Germany. The observed price difference with the other countries is essentially driven by a combination of the following elements:

- **Higher electricity taxes** in Flanders and Wallonia compared to the neighboring countries.
- **Important discounts on network costs in France, Germany and the Netherlands** of up to 90% of the standard tariffs for certain consumption profiles. More details can be found in the appendix to this report.
- Large **commodity price** differences are observed between France and the other countries in scope (cfr. next slide).

Comparative overview of market prices

Baseload profile



The wholesale electricity prices in **France** are four times below the market prices in the other countries in the benchmarking scope. This is largely caused by the applicable regulated rates (based on “La Nouvelle Organisation du Marché de l’Eléctricité” (La Loi NOME) and “L'Accès Régulé à l'Électricité Nucléaire Historique” (La Loi ARENH) in France. In 2023, France abolished the increase in the ARENH rate that was introduced in 2022 to offset the rise in the electricity prices.

For 2023, Belgian market prices remain approximately the same compared to the market prices in **the Netherlands** but are **310%** higher than in **France** and **5%** lower than in **Germany**.

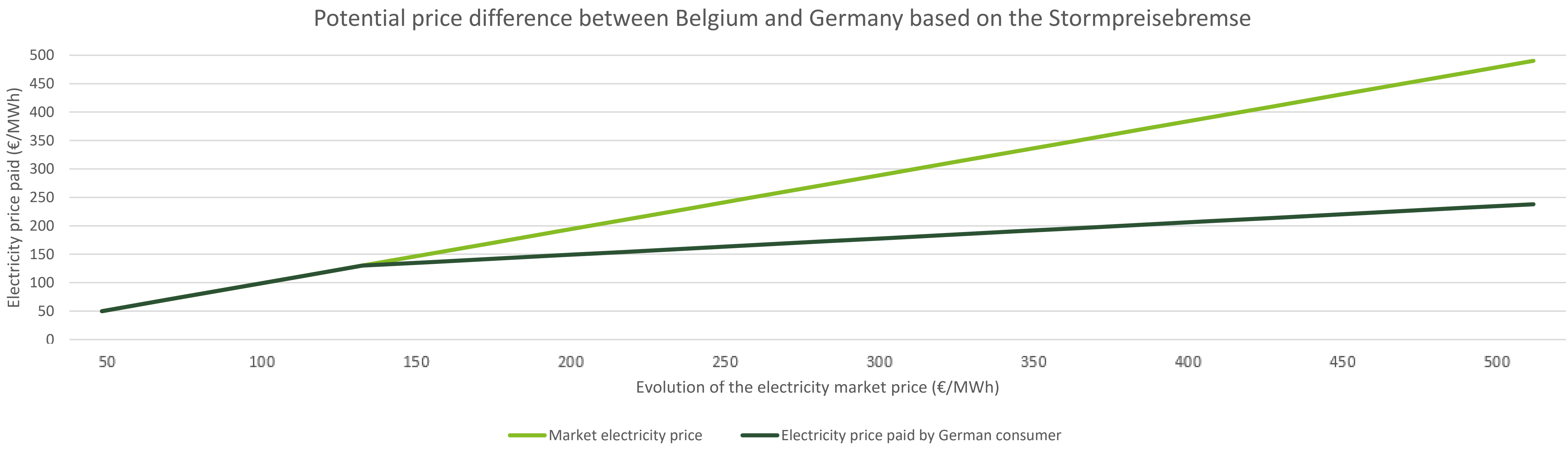
Note that **Germany** has announced the introduction of a (retroactive) **price cap** for 2023, potentially impacting the commodity prices in Germany. As there are still uncertainties with regards to the effective introduction at the time of writing this report, the price cap is not included in the prices of this year’s report. However, the next page details the potential implications of the introduction of the price cap.

Comparative overview of market prices

Strompreisbremse Germany - Potential price impact of the German support mechanism

The German Federal Government has introduced a new energy policy, referred to as **Strompreisbremse.** The policy includes **price caps for electricity, gas, and heat**. The policy is aimed at providing relief for companies amidst a sharp increase in energy costs. The primary objective of this electricity price mechanism is to reduce the impact of rising energy costs on companies. Based on available information on the price cap, the electricity price is capped at 13 cents per kilowatt hour, plus grid fees, taxes, charges, and levies for medium and large-sized companies with an annual consumption of over 30,000 kilowatt hours. The price cap applies to 70% of the amount based on past usage as reference, with the remaining 30% to be sourced at the actual market prices. The price cap is calculated on a monthly basis.

The figure below demonstrates the potential impact of the Strompreisbremse. If the monthly average electricity price exceeds the identified price cap of 130 €/MWh, electricity consumers in Germany will pay lower prices compared to consumers in other countries.

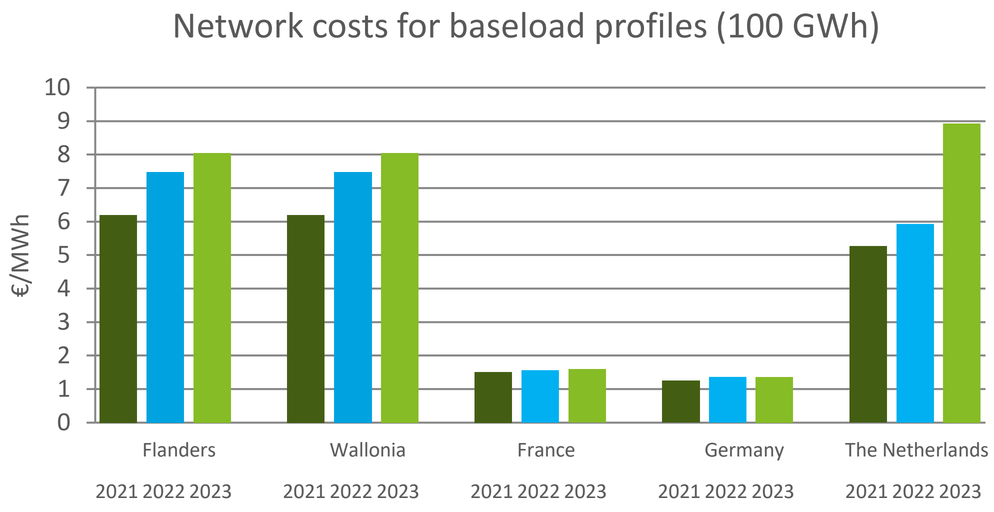


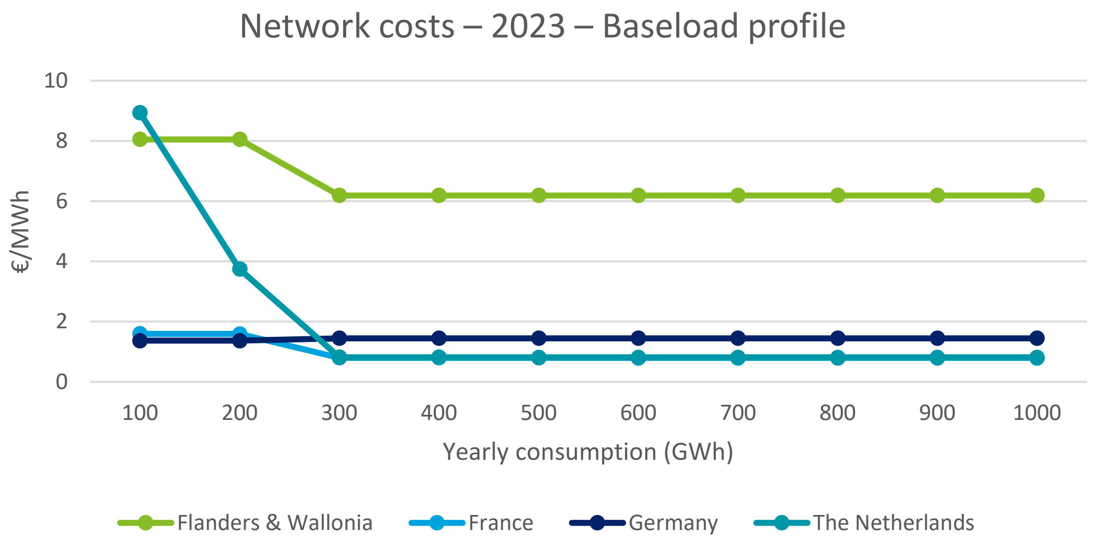
Comparative overview of network costs

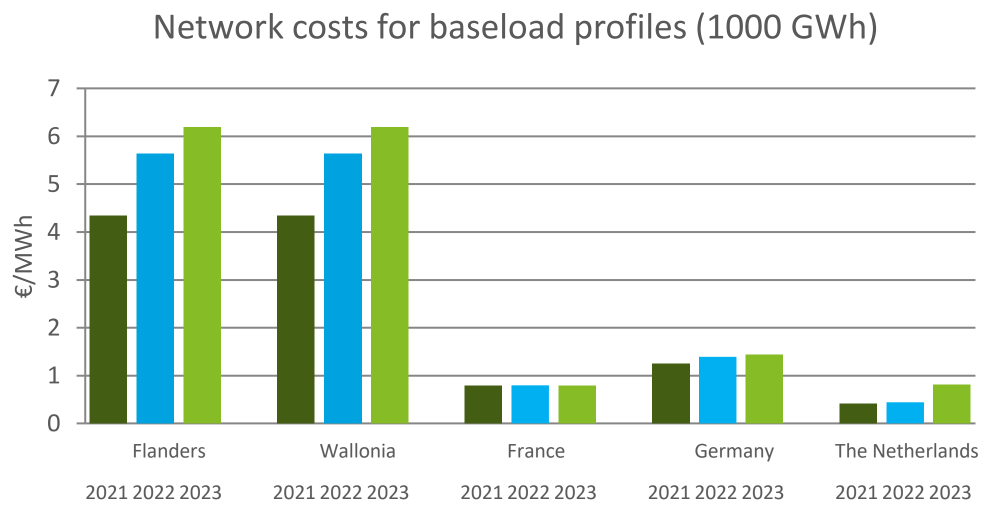
Baseload profile

Network costs in Belgium **increased** respectively **8% and 10%** in 2023 for 100 GWh and 1000 GWh profiles compared to 2022. In comparison, network costs remain higher than those of neighboring countries, except for a 100 GWh profile in the Netherlands where network costs have significantly increased.

In France, Germany and the Netherlands, a maximum **90% discount** on network costs is applicable for certain consumption profiles. This discount does not exist in Belgium, which explains the large differences between Belgium and its neighboring countries. More details can be found in the appendix of this report.







- For Belgium (where network losses are billed by the suppliers), a variable fee (based on a percentage of the market price) is added to the network tariff in order to ensure comparable rates with other countries in scope where network losses are part of the network tariff (cfr. assumptions on page 31). Given the increasing commodity price, this component drives the increased network costs for Belgium. In the other countries within scope, this cost increase for grid losses will be incorporated in the grid tariffs with a time lag effect.

Comparative overview of electricity taxes

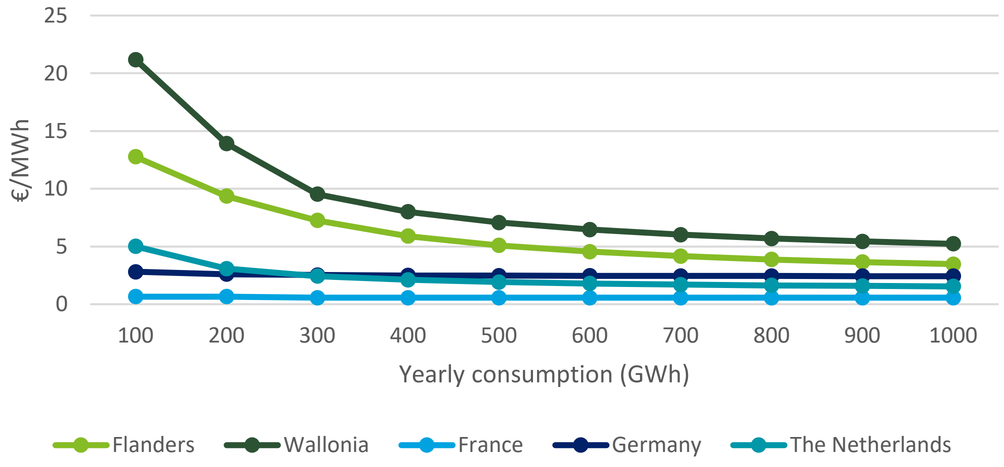
Baseload profile

Taxes increased in 2023 in Wallonia and Flanders compared to 2022 for the 1000 GWh profile. Taxes for 1000 GWh consumers in Flanders and Wallonia have increased by 3% and 1%, respectively. There was a decrease in taxes in Belgium for the 100 GWh. The decrease was less than 1% for consumers connected to 70 kV in Flanders and up to 1% for similar customers in Wallonia.

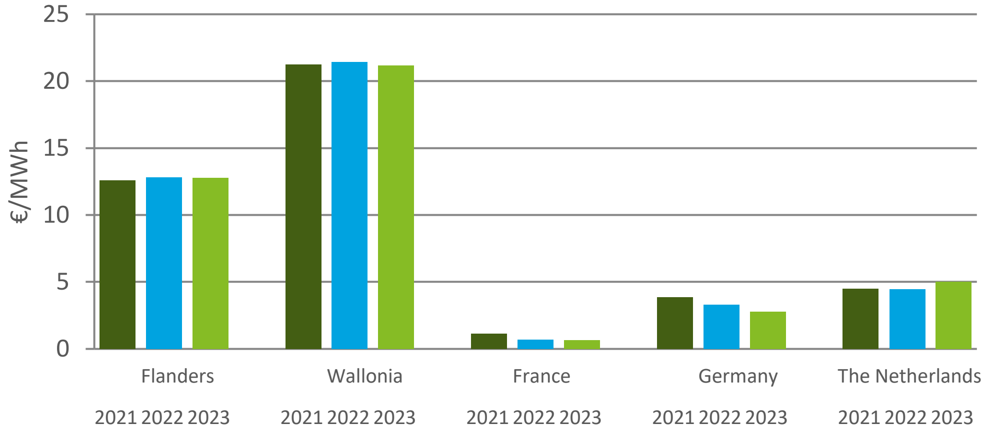
Taxes in Belgium **remain higher** compared to the neighboring countries. Taxes are **three times lower** in the Netherlands, **eight to twenty-six times lower** in France and **two to six times lower** in Germany compared to the average taxes in Belgium, for a 1000 and 100 GWh profile, respectively.

In **France**, industrial consumers benefit from low electricity taxes. Electricity taxes in France are up to **ten times lower** than the average of the countries in scope of the study (for a 100 GWh profile).

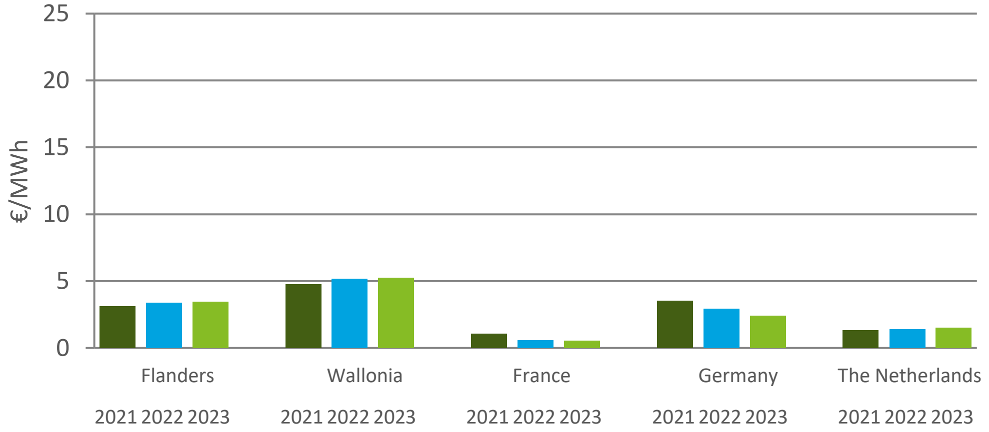
Electricity Taxes - 2023 – Baseload profile



Electricity taxes for baseload profiles (100 GWh)

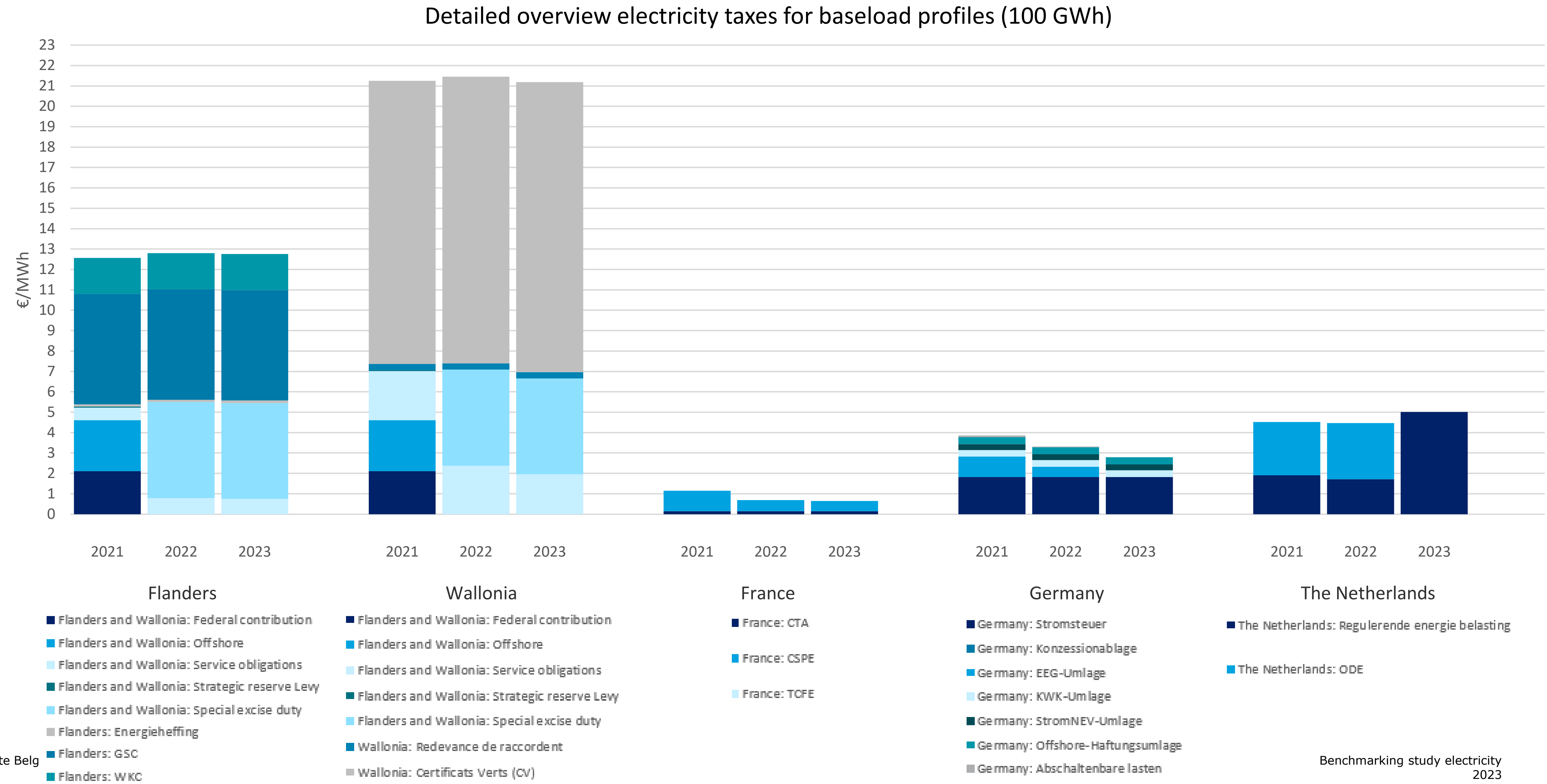


Electricity taxes for baseload profiles (1000 GWh)



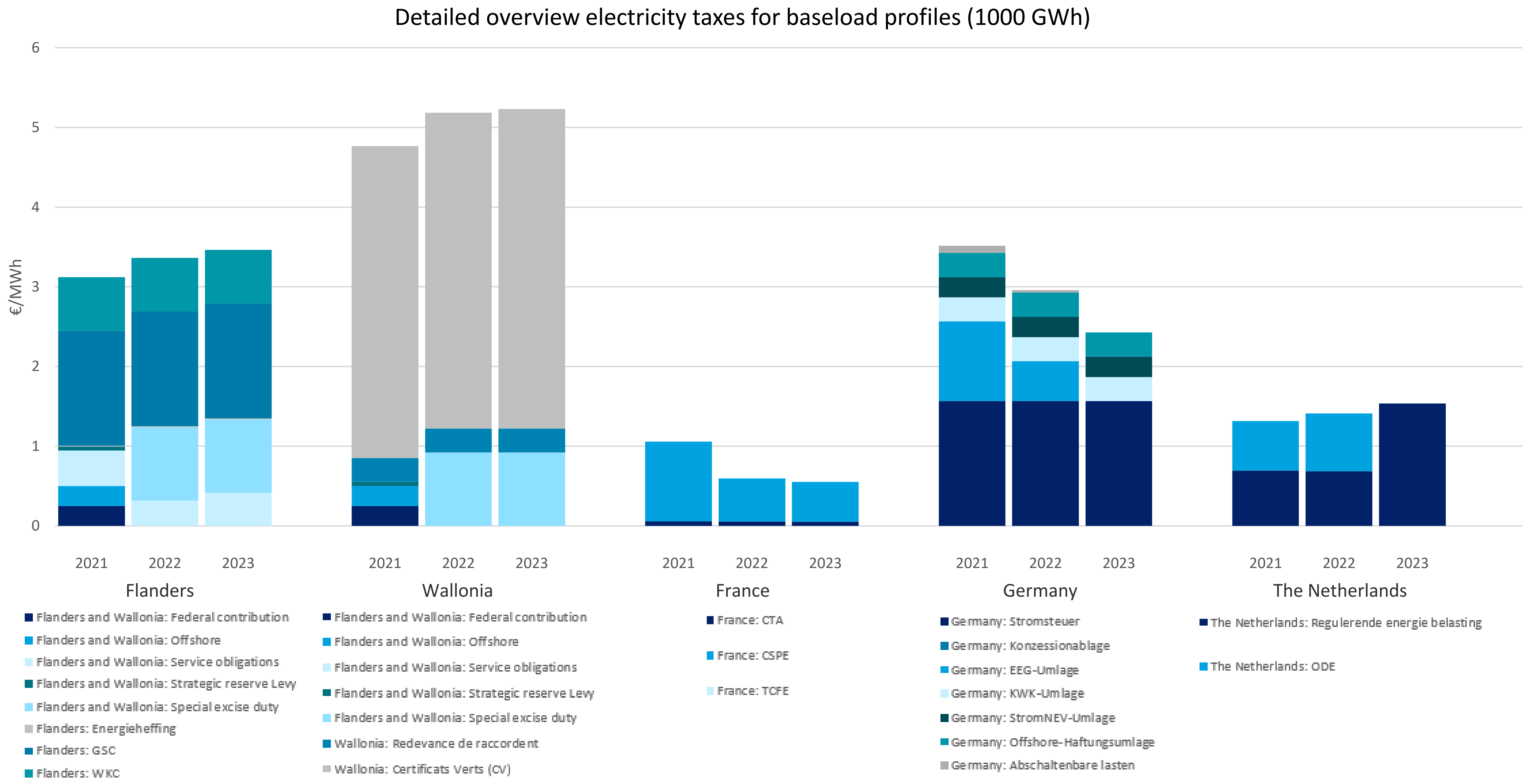
Comparative overview of electricity taxes

Baseload profile (100 GWh)



Comparative overview of electricity taxes

Baseload profile (1000 GWh)



Results of the benchmarking study

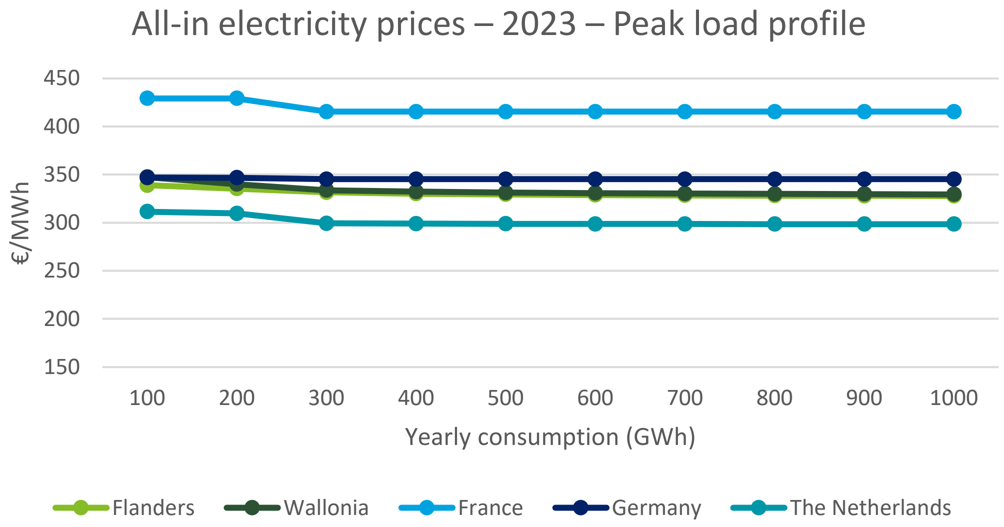
Peak load profile

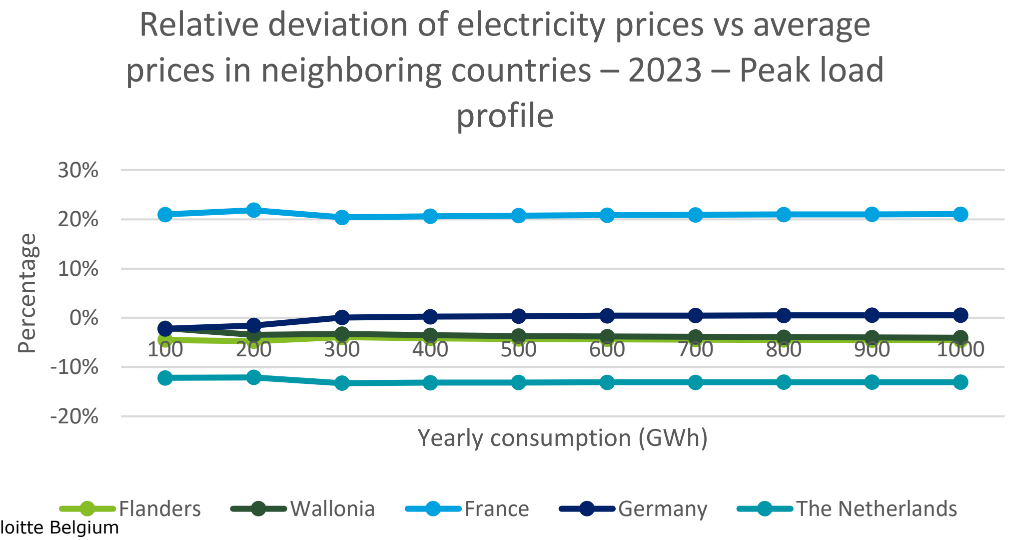
Results of the benchmarking study
Peak load profile

- Benchmark all-in electricity prices of a **peak load profile**
- Comparative overview of:
  - Market prices
  - Network costs
  - Electricity taxes

Benchmark all-in electricity prices

Peak load profile





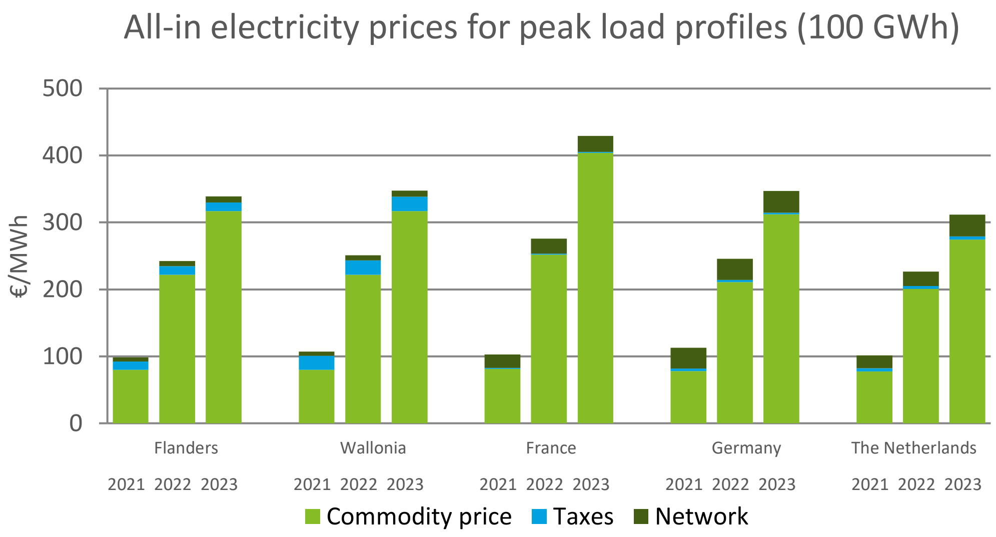
For 2023, we observe all-in peak load prices ranging from **328€/MWh** in Flanders for a 1000 GWh consumer to **347€/MWh** in Wallonia for a 100 GWh consumer.

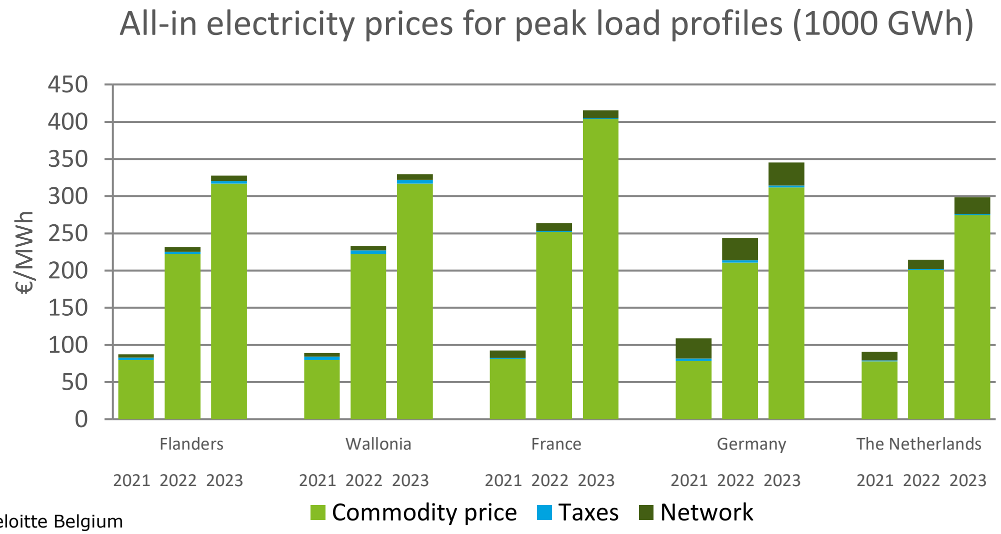
The all-in electricity price for peak load consumers in **Wallonia** is approx. **7,5€/MWh (2%)** lower for a 100 GWh consumer compared to the average of the countries in scope of the study. For **Flanders**, the all-in electricity price for peak load consumers is up to **5**% lower for a 1000 GWh consumer compared to the average of the countries in scope.

For most consumption profiles, the all-in peak load prices in Flanders and Wallonia are lower than those of the other countries in the benchmark study, with the exception of the Netherlands.

Benchmark all-in electricity prices

Peak load profile





The all-in **electricity prices have increased** in Belgium **in 2023 compared to 2022** for all consumer profiles. For both Flanders and Wallonia, we see an increase of up to 42% and 41%, respectively.

The increase is explained by an increase in commodity cost **(43%)**, network cost **(18%)** and taxes **(up to 3% for Flanders).**

For a 100 GWh consumer in Wallonia, we observe a price difference of **8€/MWh** with Flanders, **-82€/MWh** with France, less than **1€/MWh** with Germany and **36€/MWh** with the Netherlands, respectively. The cost elements vis-à-vis the neighboring countries are as follows:

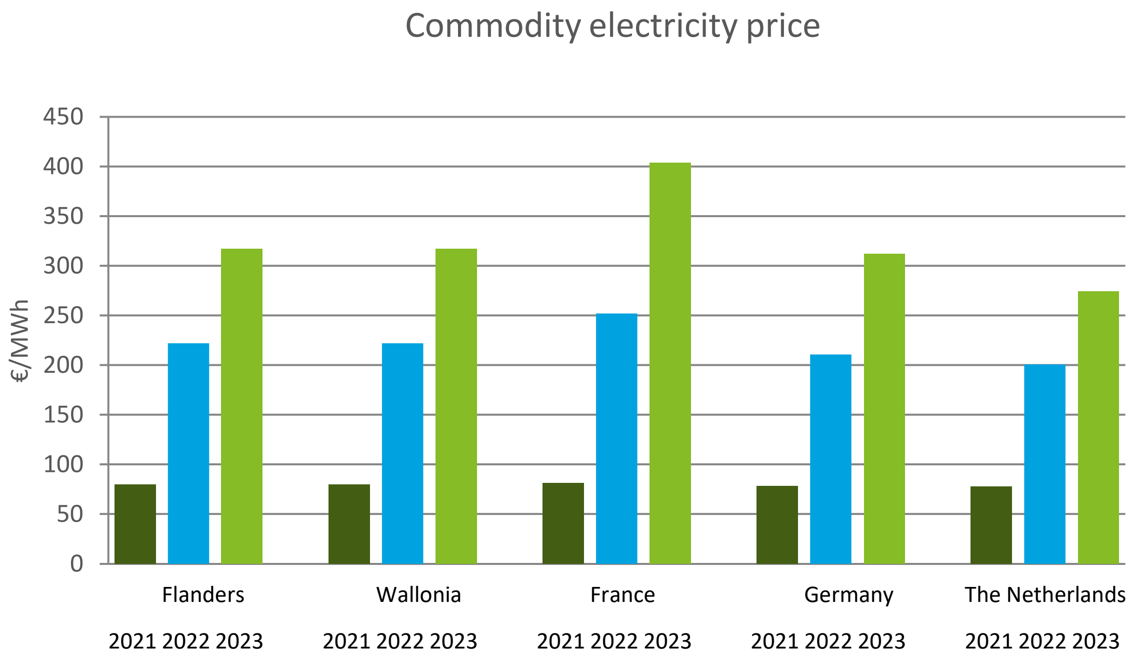
- **Commodity prices** in Flanders & Wallonia are 4% lower than the average commodity cost for all countries in scope.
- **Substantially higher electricity taxes** in Belgium compared to the neighboring countries. Up to 70 kV (for a 100 GWh consumer), both in Flanders and Wallonia taxes are up to **4 and 7** times higher respectively compared to the average of France, Germany and the Netherlands. Above 70 kV (for a 1000 GWh consumer), taxes are up to **2 and 3** times higher respectively compared to the average of the neighboring countries.
- In contrast, **network costs** in Belgium are substantially lower than the average of the neighboring countries.

For a 1000 GWh consumer in Wallonia, we observe a price difference of **2€/MWh** with Flanders, **-86€/MWh** with France, **-16€/MWh** with Germany and **31€/MWh** with the Netherlands, respectively.

France has the highest all-in electricity price which is mainly due to a strong increase in commodity costs.

Comparative evolution of commodity prices

Peak load profile



The wholesale electricity prices for peak load in the Netherlands remain below the market prices of the other countries in the benchmarking scope.

For 2023, Belgian market prices for peak load profiles are **21% lower than the prices in France** but are **16%** higher than in **the Netherlands** and **2%** higher than in **Germany**.

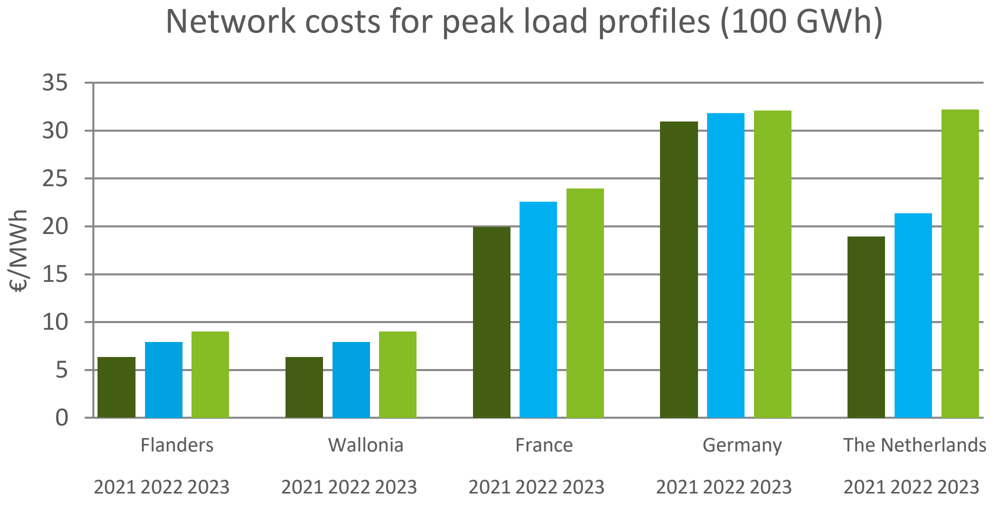
Note that **Germany** has announced the introduction of a (retroactive) **price cap** for 2023, potentially impacting the commodity prices in Germany. As there are still uncertainties with regards to the effective introduction at the time of writing this report, the price cap is not included in the prices of this year's report. However, page 12 details the potential implications of the introduction of the price cap.

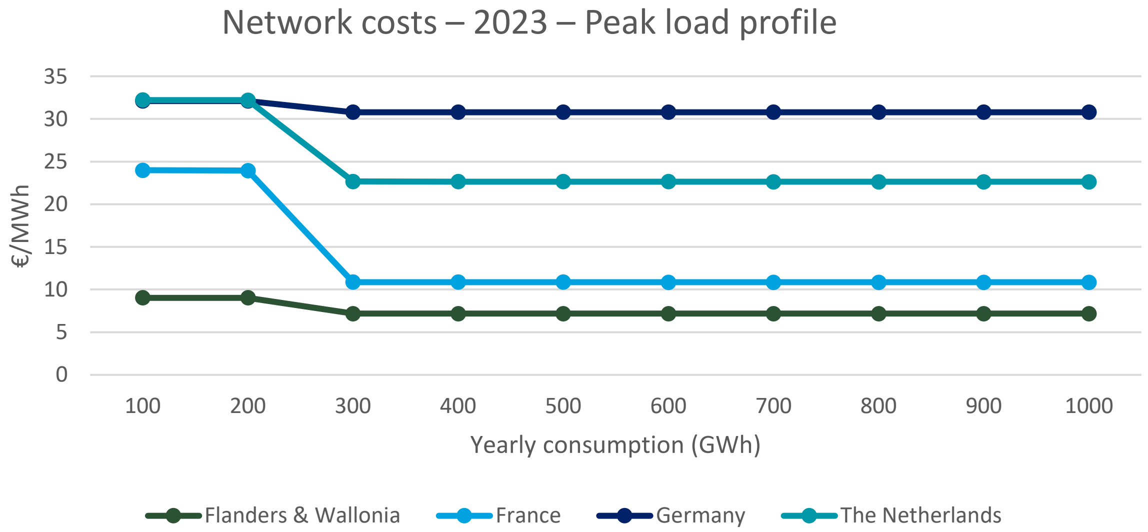
Comparative overview of network costs

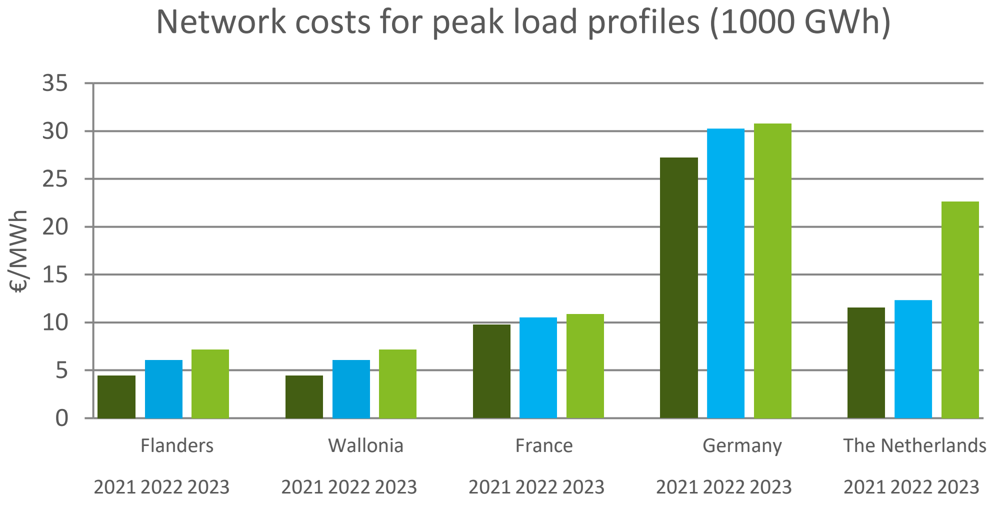
Peak load profile

In **France, Germany and the Netherlands** industrial consumers with a peak load profile do not benefit from discounted network costs.

Compared to last year, the **network costs** in Belgium **increased** respectively **14% and 18%** for 100 GWh and 1000 GWh profiles. However, network costs in **Flanders and Wallonia** are about **three times lower** than the average of all countries in scope of the study for all consumption profiles and up to **four** times lower than prices in Germany (for a 1000 GWh consumer). It must be noted, however, that the energy consumption is assumed to be constant throughout peak hours and that no power peaks occur, nor on a yearly, nor a monthly basis. Consumption profiles that do show these peaks are paying additional network costs for this in Belgium.





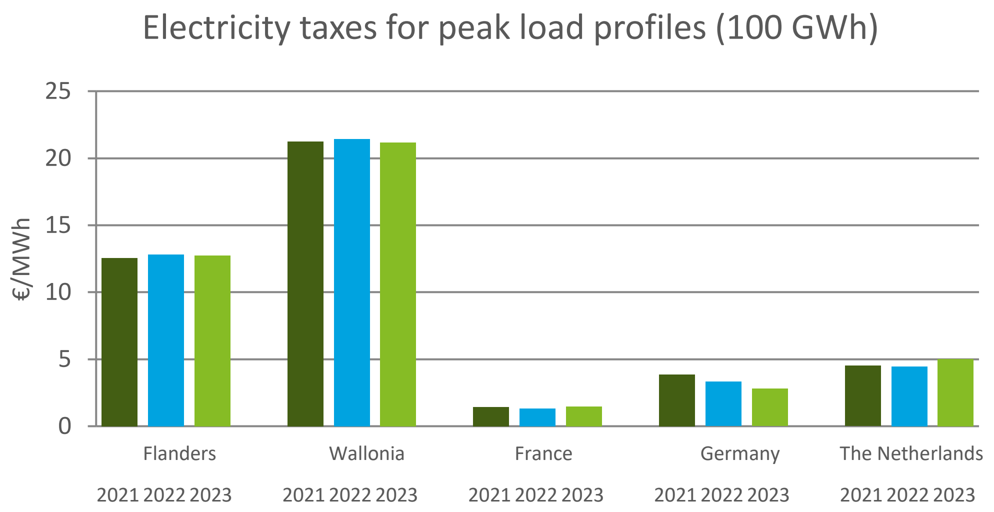


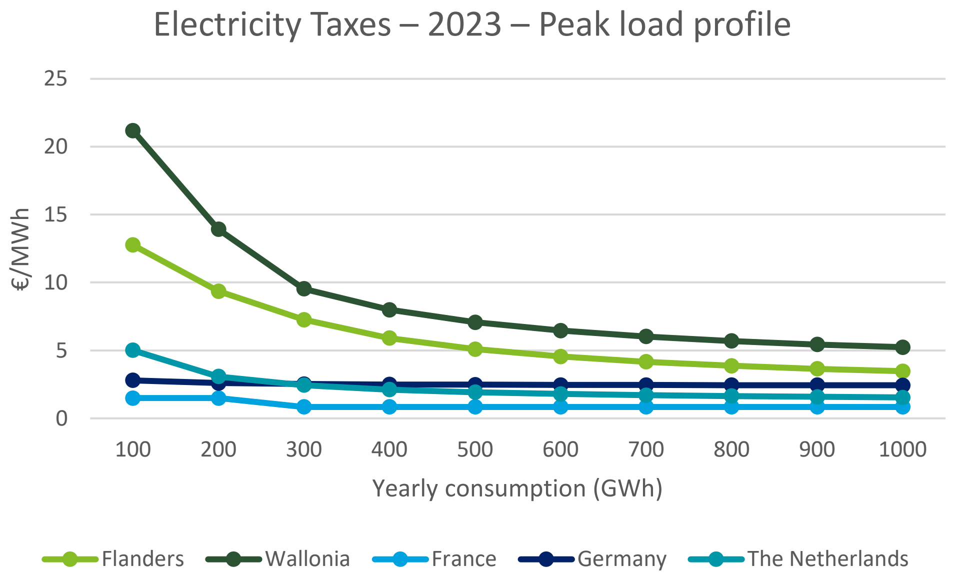
- For Belgium (where network losses are billed by the suppliers), a variable fee (based on a percentage of the market price) is added to the network tariff in order to ensure comparable rates with other countries in scope where network losses are part of the network tariff (cfr. assumptions on page 31). Given the increasing commodity price, this component drives the increased network costs for Belgium. In the other countries within scope, this cost increase for grid losses will be incorporated in the grid tariffs with a time lag effect.

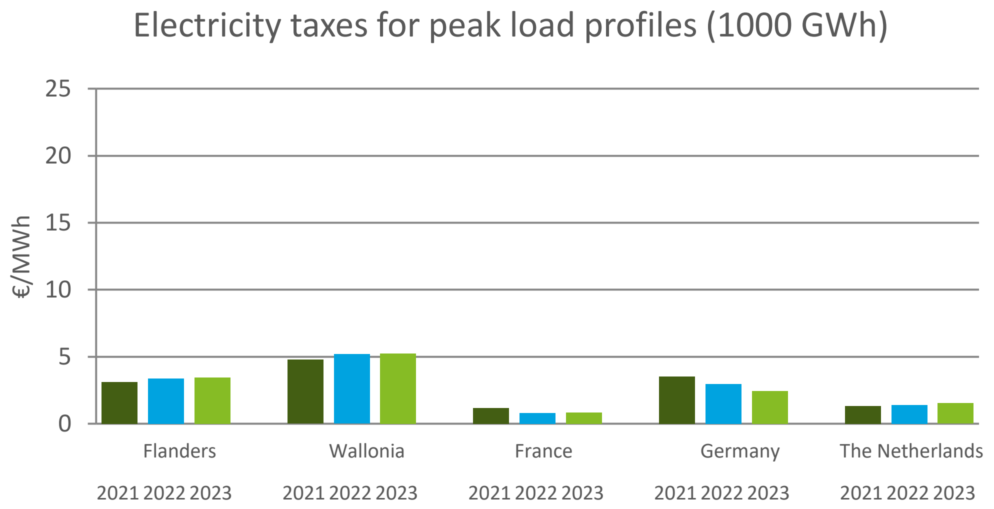
Comparative overview of electricity taxes

Peak load profile

Observations on taxes for peak load profiles are similar to those for baseload consumers, as most taxes depend on the total (yearly) energy consumption, rather than on the consumption profiles (baseload versus peak load). Only in France, a slight difference is observed between taxes for baseload versus peak load consumers. This difference is related to the French Contribution Tarifaire d'Acheminement (CTA) which is the function of the network costs that in turn depend on the subscribed capacity.

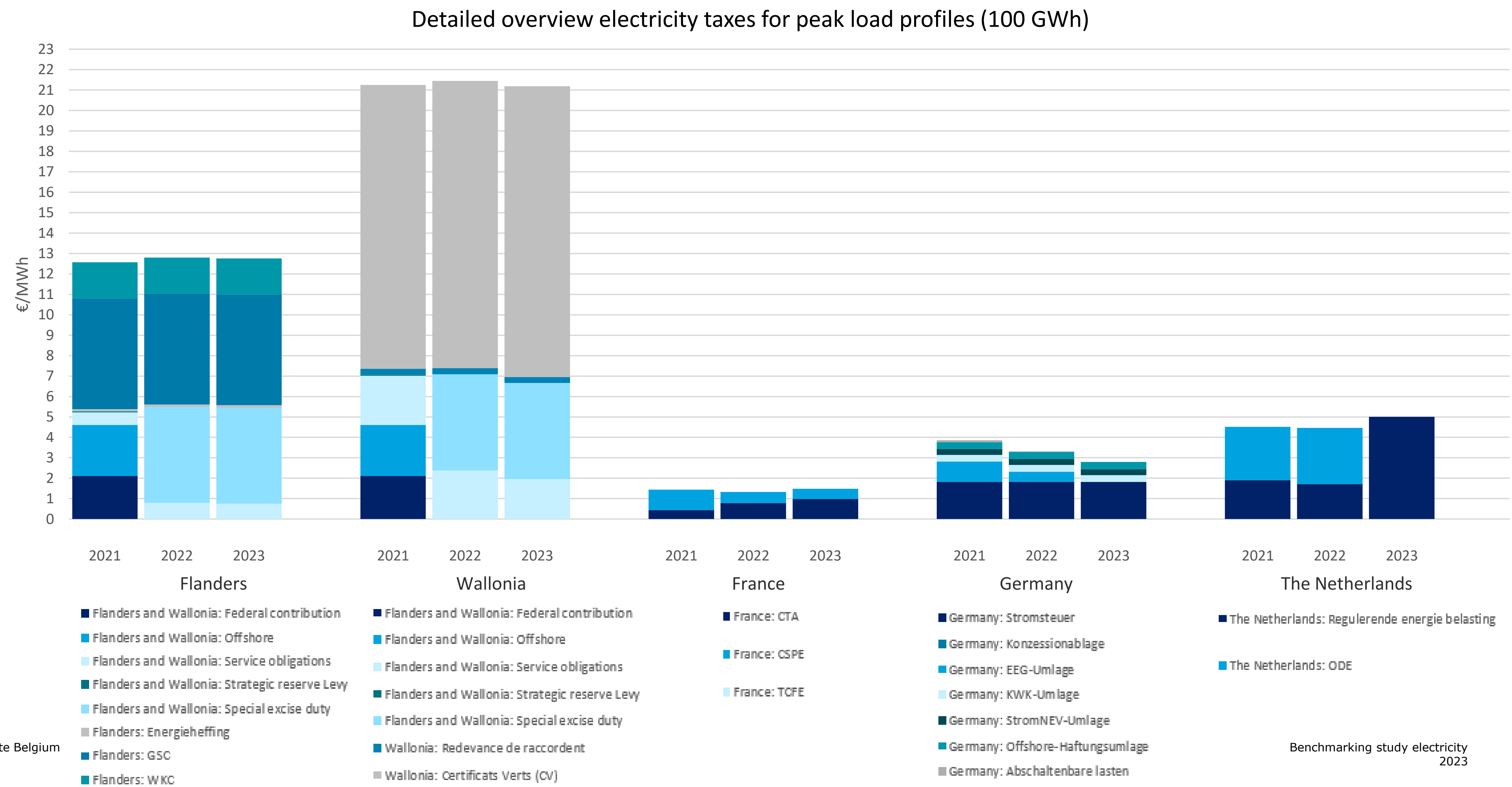






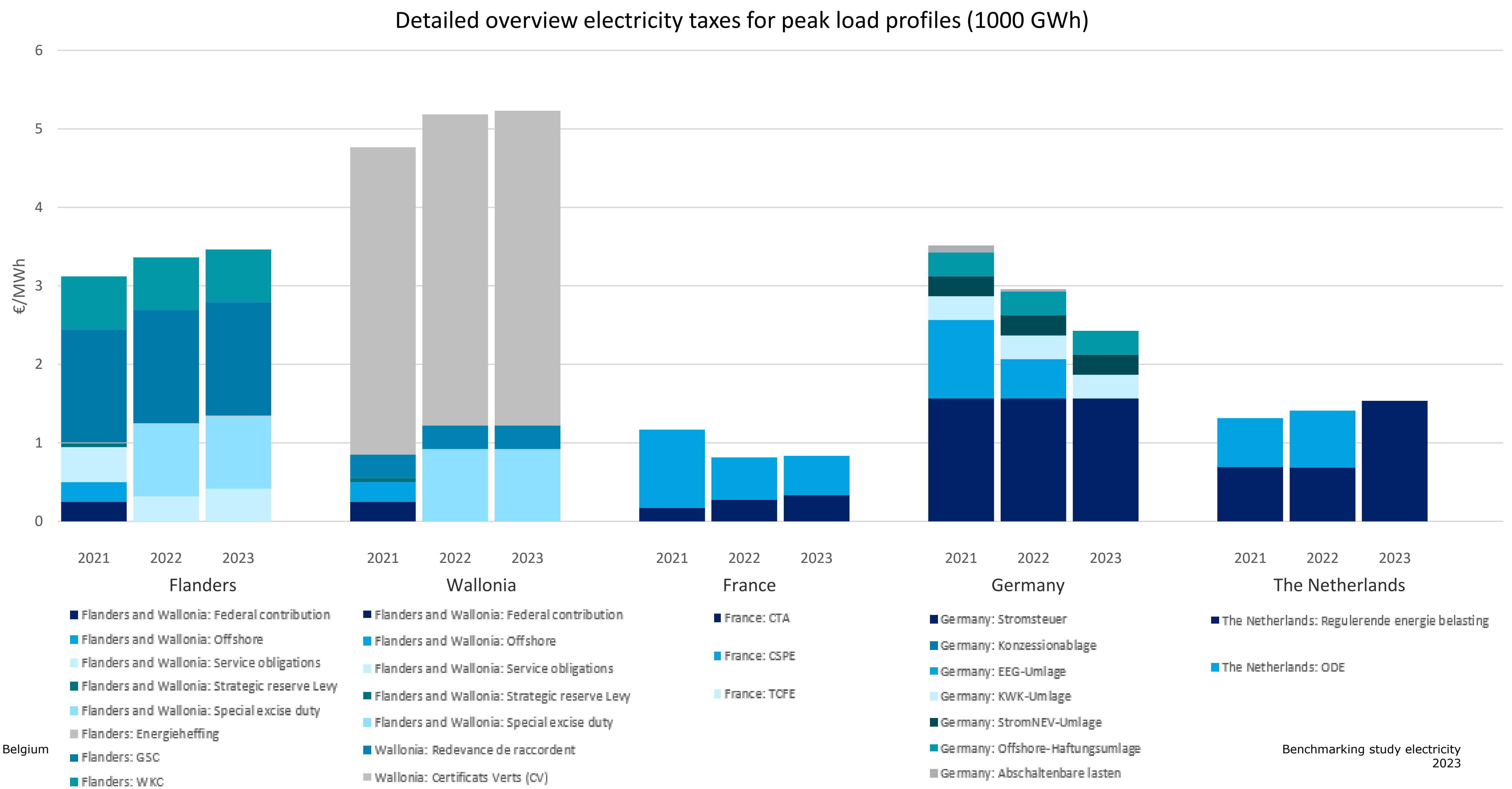
Comparative overview of electricity taxes

Peak load profile (100 GWh)



Comparative overview of electricity taxes

Peak load profile (1000 GWh)



Appendices

Benchmark methodology

Market prices

The market prices used are based solely on publicly available data and have been consistently calculated in accordance with the following assumptions, validated and approved by Febeliec.

Use of market quotations:

- Market prices are calculated on a combination of spot and forward market prices whereby prices for Year N are determined as follows:
  - 50% of the commodity price is determined as the average of the (end of day) market prices for year ahead forwards over the period 1/1/N-1 to 31/12/N-1.
  - 35% of the commodity price is determined as the average of the (end of day) market prices for month ahead forwards over the period 1/12/N-1 to 30/11/N.
  - 15% of the commodity price is determined as the average of the (end of) day ahead spot price for the period 31/12/N-1 to 30/12/N.
- For 2023, the day-ahead and month-ahead components are based on available market data until 14/02/2023. It is assumed that the day-ahead and month-ahead components throughout the rest of the year equal the average value of the period 01/01/2023 – 14/02/2023. For the previous years, all available market data has been included in the model.
- We would like to highlight the **volatility in market prices for the period 2021 - 2023** that is driven by several market circumstances. However, the relative price differential for comparison between European countries remains valid as all European countries see a similar price evolution. Because of the volatility in market prices:
  - There are major differences in the commodity component of the energy price for the year 2022 as used in last year's report compared to the one in this report. As the strong increase in the commodity prices started after the publication of the 2021 report, the price increases were not reflected in the 2021 report. However, as this report includes all available information for 2022, it reflects the actual price points for commodities in 2022.
  - As for any future estimation, it is uncertain whether market prices included for 2023 are a good proxy for the whole year 2023.

Benchmark methodology
Market prices

The following sources for market prices were used for the different jurisdictions:

- All baseload and peak load market prices (day-ahead, month-ahead and year-ahead) are sourced from EnergyMarketPrice (www.energymarketprice.com).
- For Flanders and Wallonia, as no peak load future prices are available for delivery on the Belgian market, a proxy is used consisting of the adjusted average of future prices for delivery on the Dutch and French market. The adjustment consists of a factor representing the relation between forward baseload prices in Belgium compared to the respective forward baseload prices in France and the Netherlands.

Benchmark methodology

Market prices

Use of regulated prices in France

- Industrial consumers in France have access to regulated wholesale electricity prices for their baseload consumption volumes (with a max threshold). In practice this means that the percentage of the power that can be sourced at such regulated tariffs heavily depends on the consumption profile of the consumer. Full baseload profiles will benefit the most. For peak load profiles, the benefit is rather limited.
- In 2021, 2022 and 2023, these applicable regulated rates (based on “la Nouvelle Organisation du marché de l’éléctricité (La Loi NOME) and “L'Accès Régulé à l'Électricité Nucléaire Historique” (La Loi ARENH) have been used in the model, as market prices increased above regulated ARENH rates.
- As a result, for 2021, 2022 and 2023, market prices in France have been determined using the following combination of regulated and market prices:
    - For a baseload profile: 95% ARENH rates and 5% market quotations
    - For a peak load profile: 15% ARENH rates and 85% market quotations
- ARENH rates amount to 42 EUR/MWh for 2021, 2022 and 2023. In this study an increase of 0,5 EUR/MWh is added as a margin for the supplier.
- In 2022, France made available a special ARENH rate of 46,2 EUR/MWh for an additional 20TWh from 1/04 up until 31/12. An increase of 0,5 EUR/MWh is added as a margin for the supplier. During the period of application of the special ARENH rate, market prices have been determined using the following combination of regulated and market prices:
    - For a baseload profile: 95% regular ARENH rates, 2,5% additional ARENH rates and 2,5% market rate
    - For a peak load profile: 15% regular ARENH rates, 5% additional ARENH rates and 80% market rate
- Market prices are determined as described in the previous page.

Benchmark methodology

Network costs

General

- Network costs relate to the regulated tariffs applied by the transmission grid operators (TSOs) for the transport of electricity over the transmission network. In order to determine benchmark rates, the following assumptions have been included as validated and approved by Febeliec:
  - Industrial consumers have a connection with ≥70 KV (no connection to the distribution network);
    - Consumers which consume less than 200 GWh/year are assumed to be connected to the 70 kV grid in Belgium or equivalent in the neighboring countries.
    - Consumers which consume more than 200 GWh/year are assumed to be connected to the 150 kV grid in Belgium or equivalent in the neighboring countries.
    - This is in line with the real connection level of most Febeliec members.
  - The subscribed capacity of the connection point was determined by adding a 10% contingency to the theoretical peak power levels;
  - The total energy taken off the grid on a yearly basis.
- It is assumed that no power peaks occur in the consumption profile, nor on a yearly, nor on a monthly basis. Consumption profiles which do show peaks, have to pay additional network costs for this in Belgium.
- Only fixed connection costs are included for one meter per access point. No additional fee or one-off costs are included for connection equipment (e.g. transformers, switches, …).
- No additional costs are taken into account for excessive consumption of reactive energy, nor for exceeding the subscribed power.
- Peak hours are assumed to exist 5 days/week, 12 hours/day.
- No seasonal rates are applied.

Benchmark methodology

Network costs

Belgium

- As an assumption for Belgium (where network losses are billed by the suppliers), a fee equal to 1,1% of the market price is added to the network tariff in order to ensure comparable rates with other countries in scope where network losses are part of the network tariff.

Germany

- For Germany the average of the rates of all 4 TSO’s active on the German territory are used.
- For Germany it is assumed that the full discount of 90% applies on the network costs.
  - Exemption criterion is that the annual consumption ≥10 GWh and that the threshold of 8000 consumption hours is exceeded.

France

- The reduction in grid tariffs in France for certain energy intensive baseload consumers is included in the benchmark study for 2021, 2022 and 2023. For all years, the maximum reduction of 90% was assumed.
  - Exemption criterion is that the consumer is a baseload consumer ((> 7000 consumption hours AND annual consumption > 10 GWh) OR (use rate during off-peak hours > 44% AND annual consumption > 20 GWh) OR (use rate during off-peak hours > 40% AND annual consumption > 500 GWh)) and specific energy consumption > 6 kWh/€ added value and exposure to international competition > 25%.

Netherlands

- For the Netherlands it is assumed that the full discount of 90% applies on the network costs.
  - Exemption criterion is that the annual consumption ≥50 GWh and that the threshold of 7446 consumption hours is exceeded.

Benchmark methodology

Electricity taxes (1/3)

Electricity taxes relate to all taxes and other levies that are to be paid by the industrial electricity consumer in addition to market price and network costs. In order to determine benchmark rates, the following assumptions, which were validated and approved by Febeliec, have been included:

- VAT is not applied as it is not considered to be a cost element for these industrial consumers.
- For Flanders we assumed that 93% of the theoretical cost of green certificates (e.g. electricity produced by renewable solar power and cogeneration plants) is charged through by the supplier to the industrial consumer.
- For Wallonia, a partial (85%) exemption from the first component of the Walloon green certificates levy is granted to the final customers with a sector agreement, regardless of the level of consumption. These final customers pay on these exonerated volumes the second component of the Walloon green certificates levy. As of 01/01/2020, the second component of the Walloon green certificates levy is no longer applicable.
- For Flanders and Wallonia regional service obligations are due on the 30-70 kV network (and not on 150 kV).
- The Energy Fund Contribution, which was introduced in Flanders as from 2016 is only applicable up to 70 kV and not on 150 kV grids.
- As of January 1st 2022, Belgium replaced the federal taxes with a new special excise duty. The special excise duty replaces the federal share in taxes which consisted of the federal contribution, the levy to finance offshore wind farms ("offshore surcharge") and some smaller public service obligations such as the strategic reserve and the connection of wind power. For Flanders and Wallonia, we assume that no exemption to the special excise duty is granted. In order to benefit from the exemption, an application must be submitted and approved.
    - A reform of the special excise duty will be introduced on April 1st. In our exercise, we assumed the special excise rates will return to their original rates of October 2022 as of April 1st 2023.

Benchmark methodology
Electricity taxes (2/3)

- For the CSPE (Contribution au Service Public de l’Electricité) in France, we assume that all companies are electro-intensive and exposed to international competition and carbon leakage and thus pay a tariff of 1€/MWh. Please note that this tariff can be lower for hyper-electro-intensive companies (down to 0,5€/MWh) or (much) higher for non-exposed or non-electro-intensive companies (up to 7,5€/MWh).
    - Criteria to be eligible for a 1€/MWh rate are:
        - CSPE (in its standard rate) is at least 0,5% of the added value created by the consumers
        - Consumer has an important risk for carbon leakage due to indirect emission costs
        - Electric consumption is at least 3 kWh per € of added value created by the consumers

Benchmark methodology

Electricity taxes (3/3)

- For Germany we assumed that:
  - A reduced EEG-Umlage applies with a floor of 1 EUR/MWh (i.e. consumer qualifies as electricity intensive)
    - Exemption criterion is that the ratio of electricity costs to gross value added at factor costs amounts to 17% or 20%, depending on the sector in which the consumer has its activities
    - Note that the EEG-Umlage has been abolished as from 1/7/2022.
  - A reduced KWK-Umlage of 0,3€/MWh applies for the consumption beyond 1000 MWh
    - Exemption criterion is that annual consumption >100 MWh and that the ratio electricity cost versus revenu > 4%
  - A reduced StromNEV-Umlage of 0,25€/MWh applies for the consumption beyond 1000 MWh
    - Exemption criterion is that that the ratio electricity cost versus revenu > 4%
  - A reduced Offshore-Umlage of 0,3€/MWh applies for the consumption beyond 1000MWh
    - Exemption criterion is that that the ratio electricity cost versus revenu > 4%
  - That the reduced tariff for the Konzessionabgabe is not considered as it is only applicable for Mittelspannung

- For the Netherlands it is assumed that an ‘Energie akkoord’ is signed.

Components of Electricity taxes (1/4)

Flanders

In Flanders the following federal and regional taxes and levies are currently applicable:

- Special excise duty (introduced in 2022). Between November 2022 and March 2023, a temporary reduced tariff has been introduced.
- Regional contribution to purchase Green (GSC) and Cogen (WKK) certificates at guaranteed minimum prices
- Regional public service contributions including:
    - Tax on pylons and trenches
    - Levy for the support of renewable energy
- Regional energy tax, which is mainly used for financing of the green certificates
- The federal contribution is replaced by the special excise duty in 2022. It was used to raise money to:
    - Cover the costs related to the CREG (Belgian regulator for energy market)
    - Fund the decommissioning of the Mol-Dessel nuclear site
    - Support policies to reduce greenhouse gases in line with Kyoto
    - Fund public service obligations related to energy deliveries to financially vulnerable consumers
    - Fund a heating premium for an allowance to eligible consumers
- Federal offshore wind contributions (cable and certificates) is replaced by the special excise duty in 2022
- Federal levy for holding and maintaining a strategic generation capacity is replaced by the special excise duty in 2022

Components of Electricity taxes (2/4)

Wallonia

In Wallonia the following federal and regional taxes and levies are currently applicable:

- Special excise duty (introduced in 2022). Between November 2022 and March 2023, a temporary reduced tariff as been introduced.
- Regional contribution to purchase Green certificates (CV)
- Regional contribution to connect to the transport system (Redevance de raccordement au réseau)
- Regional public service contributions:
  - Tax for the use of public property in Wallonia
  - Levy for the support of renewable energy, including the first term (85% reduction assumed to be applicable)
- The federal contribution is replaced by the special excise duty in 2022. It was used to raise money to:
  - Cover the costs related to the CREG (Belgian regulator for energy market)
  - Fund the decommissioning of the Mol-Dessel nuclear site
  - Support policies to reduce greenhouse gases in line with Kyoto
  - Fund public service obligations related to energy deliveries to financially vulnerable consumers
  - Fund a heating premium for an allowance to eligible consumers
- Federal offshore wind contributions (cable and certificates) is replaced by the special excise duty in 2022
- Federal levy for holding and maintaining a strategic generation capacity is replaced by the special excise duty in 2022

Components of Electricity taxes (3/4)

France

In France the following federal and regional taxes and levies are identified:

- CTA: the “Contribution Tarifaire d’Acheminement”. This contribution depends on the network costs. As the network costs depend on the type of profile, this contribution is different for baseload and peak load profiles. It is the only component of the taxes that depends on the type of profile.

- CSPE: the “Contribution au Service Public de l'Electricité” has to cover the costs of the public service assignments (development of renewable power generation, of the social electricity tariffs and of the nationwide harmonization of electricity tariffs).

Components of Electricity taxes (4/4)

Germany

In Germany the following federal and regional taxes and levies are identified:

- Stromsteuer: general tax on energy consumption.
- Konzessionablage consists of a concession fee to local authorities (communes) that is due for low and medium voltage connections.
- EEG-Umlage intends to increase the market penetration of electricity produced from renewable energy in accordance with the Renewable Energy Act (abolished as of July 2022)
- KWK-Umlage intends to promote electricity produced from combined heat and power (CHP) plants, according to the Combined Heat and Power Act.
- StromNEV-Umlage: electricity grid charge compensating the lost revenue from TSOs that need to apply the grid fee exemptions.
- Offshore-Haftungsumlage finances the costs relating to Germany's shift from nuclear to green energies.

The Netherlands

In the Netherlands the following federal and regional taxes and levies are identified:

- The Regulerende Energie Belasting (REB) is a tax which intends to improve the rational use of energy.
- The ODE tax (Wet Opslag Duurzame Energie) is a tax that is intended to finance the support for the production of renewable energy (abolished as of January 2023)

Compensation for indirect emissions

Impact on electricity costs

All countries/regions in scope of the study (Germany, the Netherlands, Flanders, Wallonia and France) have introduced a compensation scheme for indirect emissions in order to prevent carbon leakage of some activities. The approved schemes need clearance from the European Commission and have to satisfy a certain number of strict criteria. Although the compensation mechanisms in these countries converge largely, it is not possible to calculate the specific impact on the electricity cost for the defined consumer profiles without further and very detailed assumptions. The impact is therefore not included in the results of the benchmarking study.

For those activities that can benefit from the compensation, the support depends on the CO2 emission factor (until 2021 0,76 t CO2 /MWh in CWE; since 2022 the emission factor varies between CWE countries, and has been set at 0,51 for Belgium), the average EUA (European Emission Allowances) price in €/t for the previous year, the efficiency benchmark for each concerned product (or a fallback efficiency benchmark if no specific product benchmark is available), correction values for the support intensity and the production volume.

For the Walloon region, the effective compensation is lower as a cap is applied on the overall available budget.

Supercap Flanders

Impact on electricity costs

In compliance with §189 of the Guidelines on State aid for environmental protection and energy (EEAG, 2014/C 200/01), Flanders allows an alternative financing mechanism (“supercap”) for certain electricity intensive consumers complying with strict criteria. Their contribution to the promotion of renewable energy (since 2018) and cogeneration (since 2021) is limited to 4 or 0,5% of their gross added value. The last few years, some 20 companies or industrial sites of different sizes were allowed to apply this system. Some neighboring countries introduced other specific rulings for the most electricity intensive users.