



Gestionnaire
du Réseau de Transport d'Electricité

“European Power Market Design”

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RTE

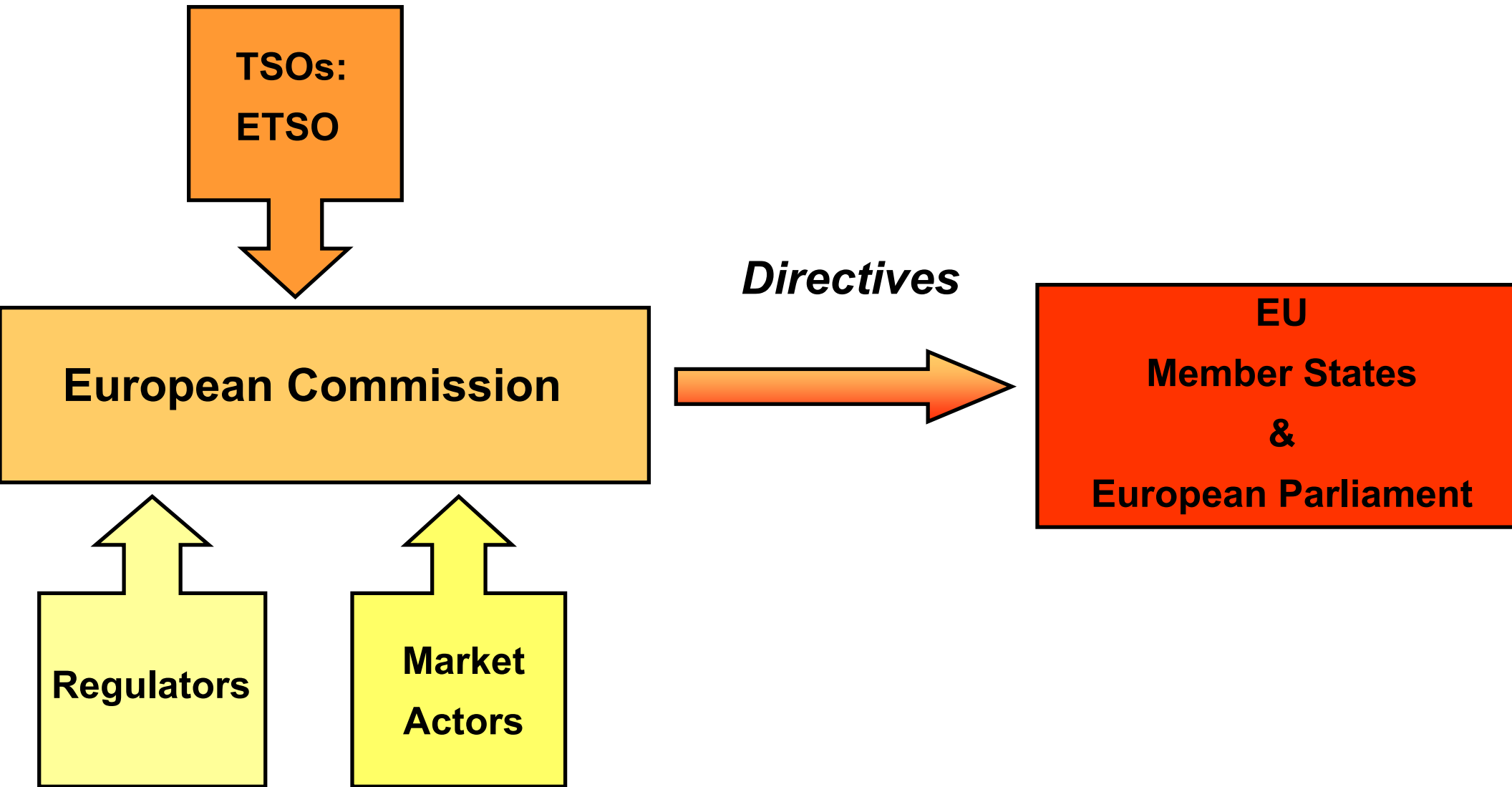
Chairman of the Executive Board

The Internal Electricity Market

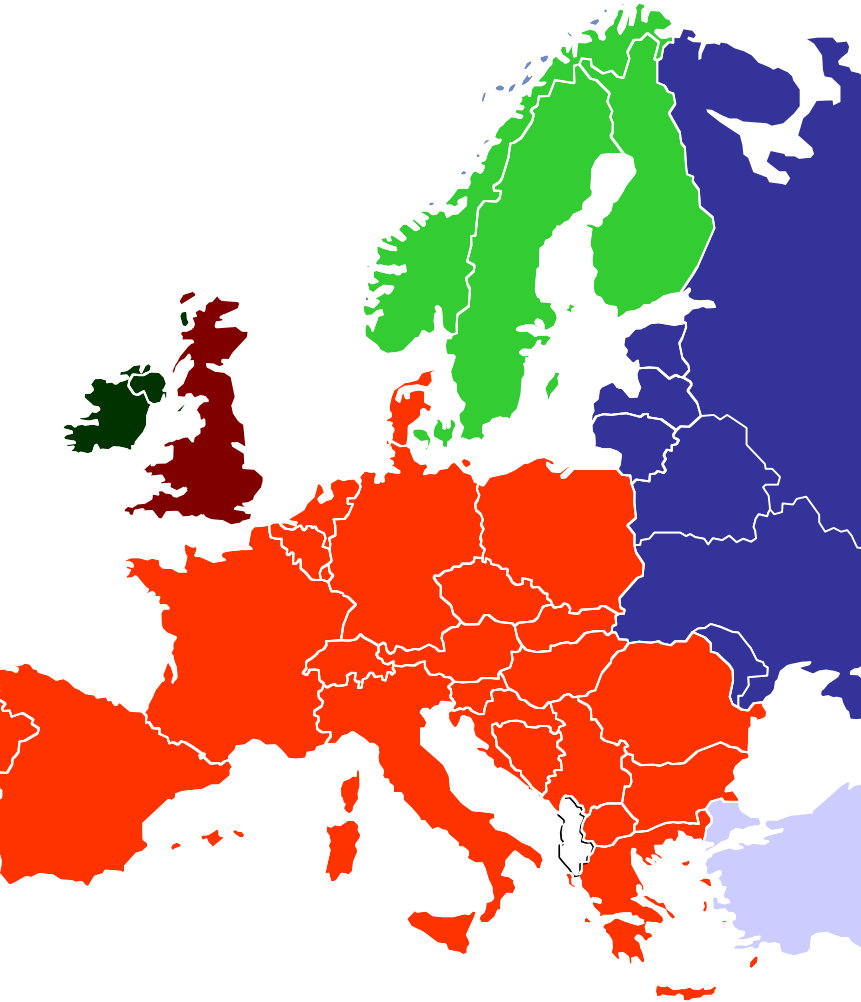


- **The objectives,**
 - Opening of the market for all customers in all EU Member-States (2007),
 - Security of supply.
 - **The means,**
 - Competition between suppliers,
 - Separation of integrated utilities between monopoly and competitive activities,
 - Access to the network.
- ➔ **The European Commission is in charge of developing the Internal Electricity Market (IEM).**

Design of Market Rules



The Europe of Electricity



30 interconnected countries (20 EU Member States),

Four synchronous zones:

Nordic countries, UK, Ireland and Continental Europe.

Installed Power : more than 650 GW,

Yearly consumption : around 3000 TWh

Yearly Physical Exchanges ; around 300 TWh

Main Features of the European Power Market Design (I)



- 1. Independent regulator in each Member-State cooperating at the European level through ERGEG,**
- 2. Independent transmission system operator (ISO + TransCo) cooperating at the European level through ETSO,**
- 3. Regulated TPA with a non-distance based grid-access tariffs. Most of them are postage stamp type,**

Main Features of the European Power Market Design (II)



- 4. Non compulsory Power Exchanges complementary to bilateral transactions (OTC),**
- 5. Management of congestion between Member States based on market-based mechanism,**
- 6. Removal of pancaking through Inter-TSO Compensation Fund.**

Organisation of regulation

- ✓ **An independent regulator exists in each Member-State,**
Competencies can differ : electricity + gas, electricity + telecom + gas, only electricity,...
- ✓ **Regulation of tariffs can be ex-ante (for instance, France) or ex-post (for instance, Sweden),**
- ✓ **No European Regulator but an official group of regulator advising the European Commission :**
ERGEG (European Energy Regulators Group for Electricity and Gas)

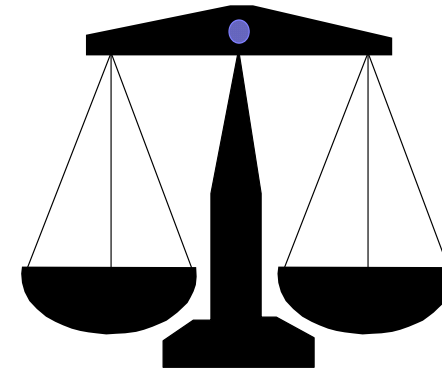
The TSO model



Transmission Operator



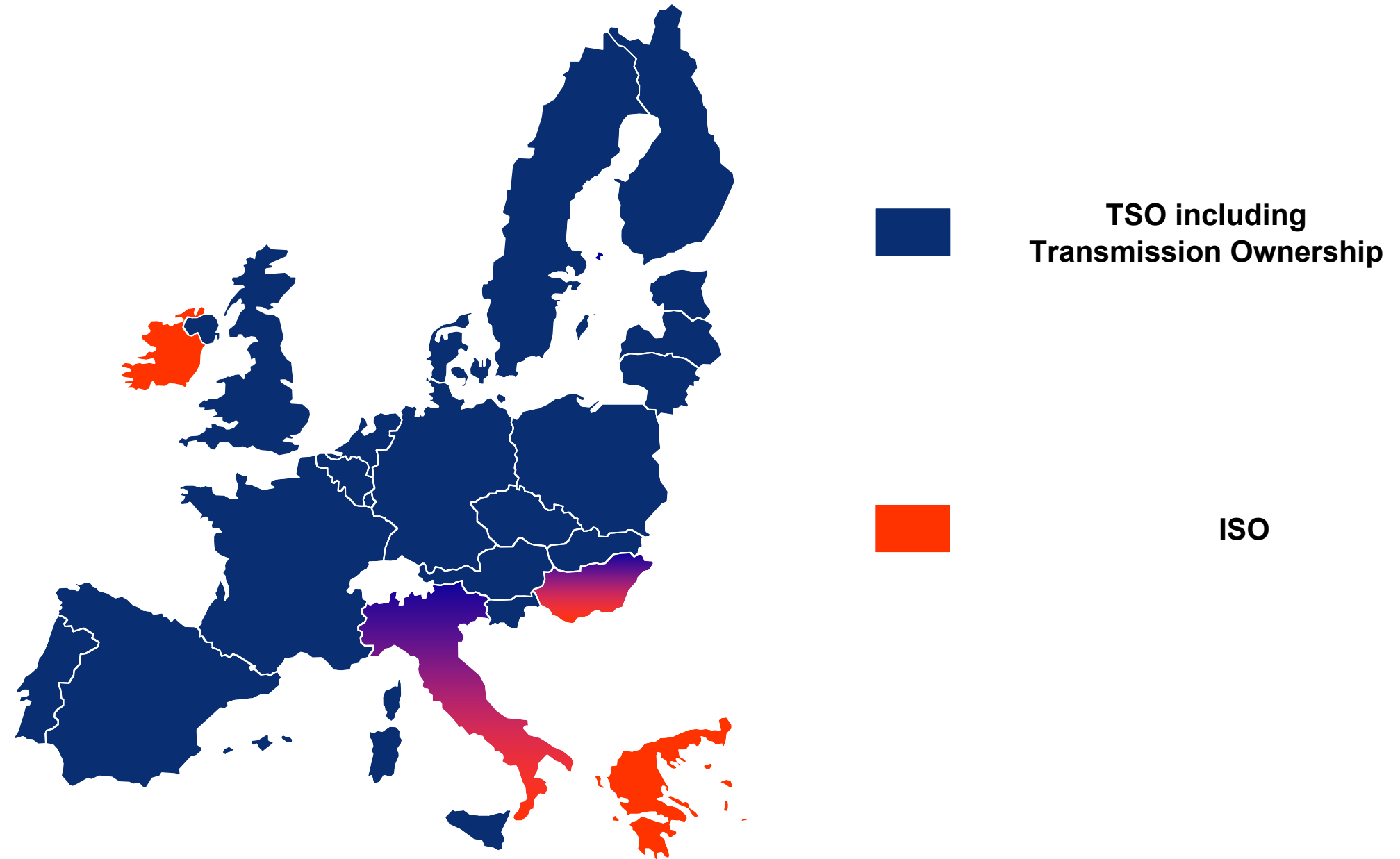
System Operator



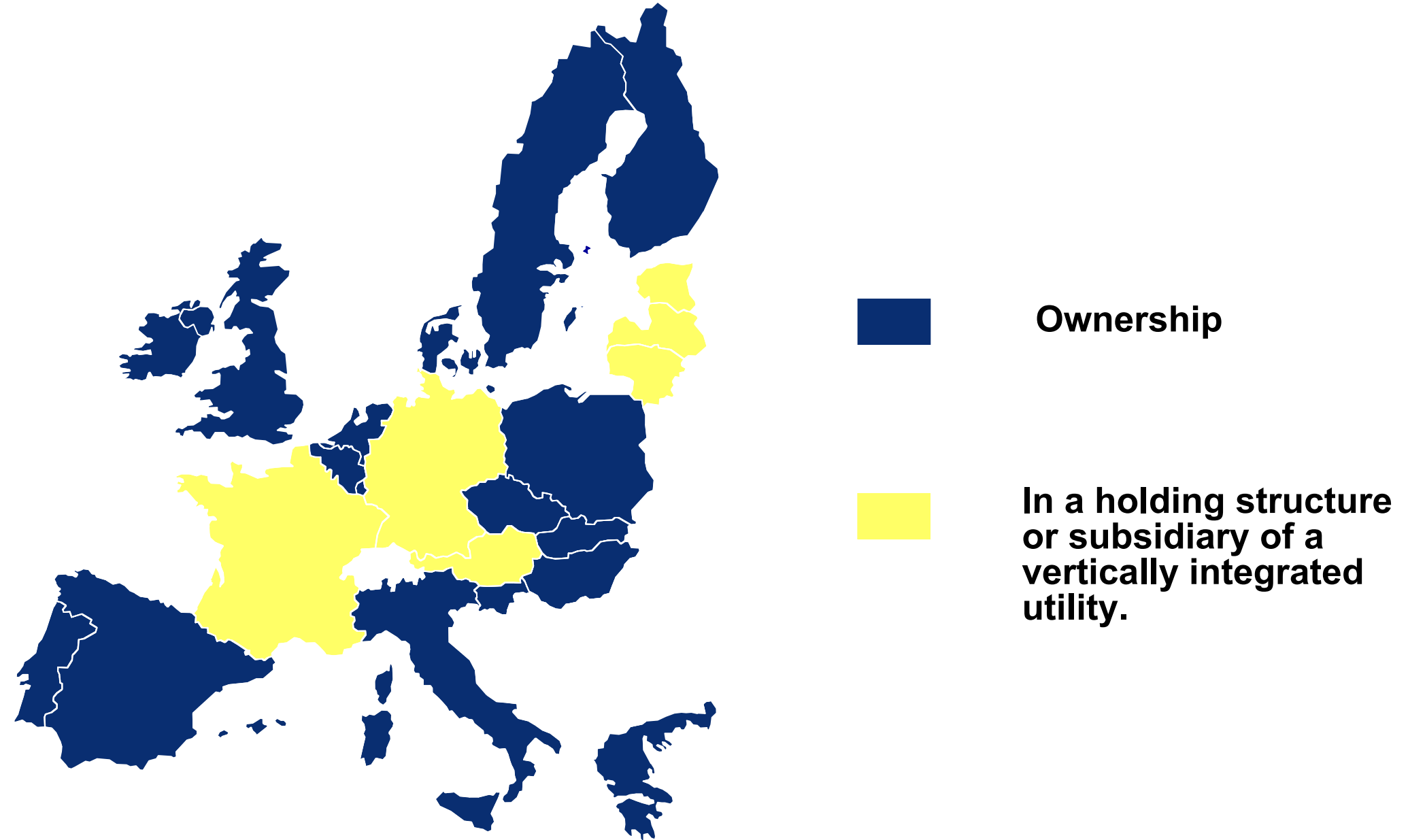
Balancing Market Operator

**Settlement of Balance
Responsible Entities**

The TSO model



The unbundling of TSOs : state of play

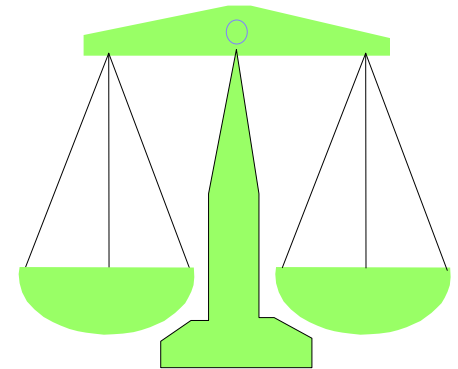


Balancing the System



Unbalanced situation

TSO must balance the system in real time by buying or selling power !

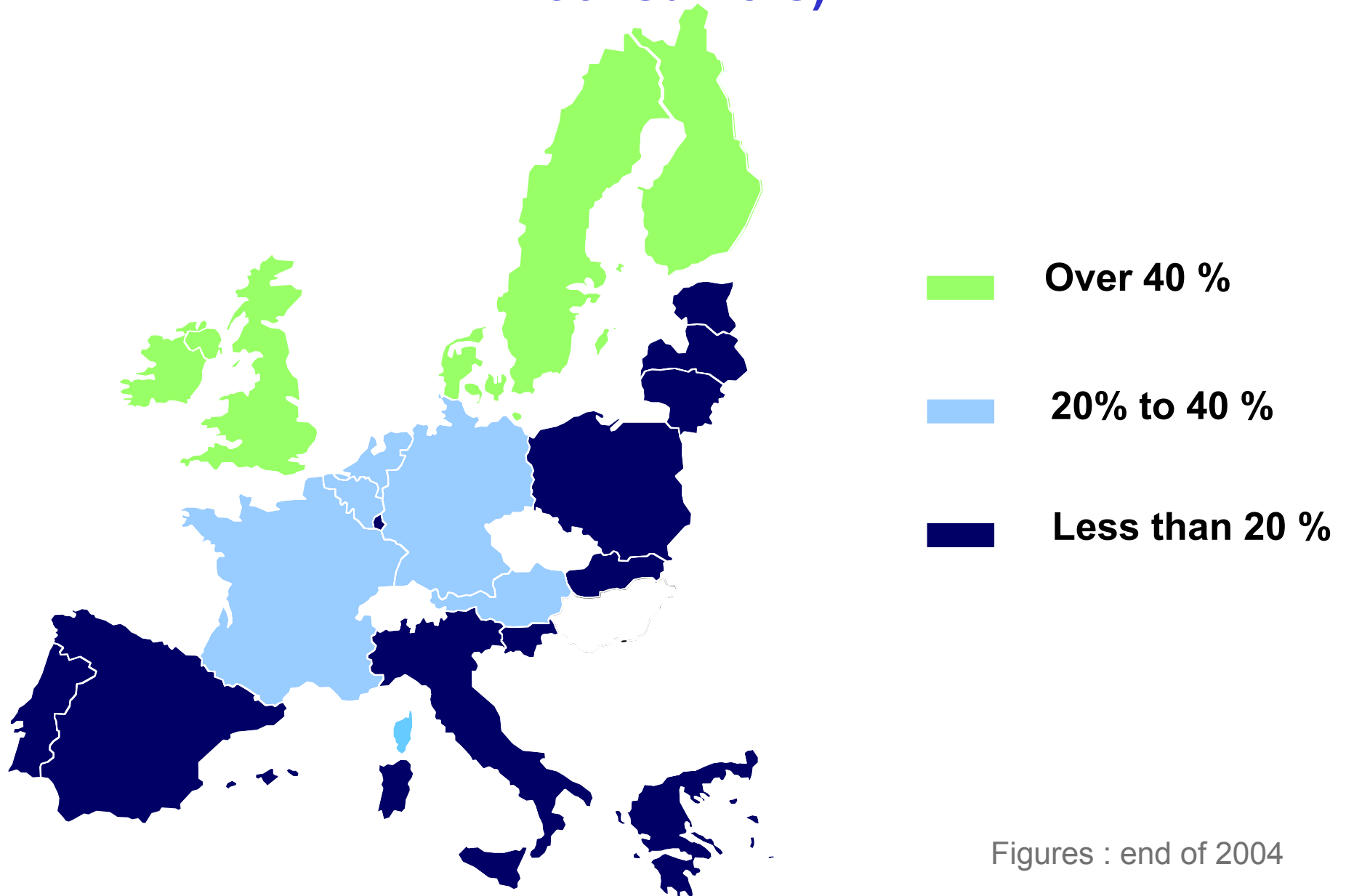


Balanced situation



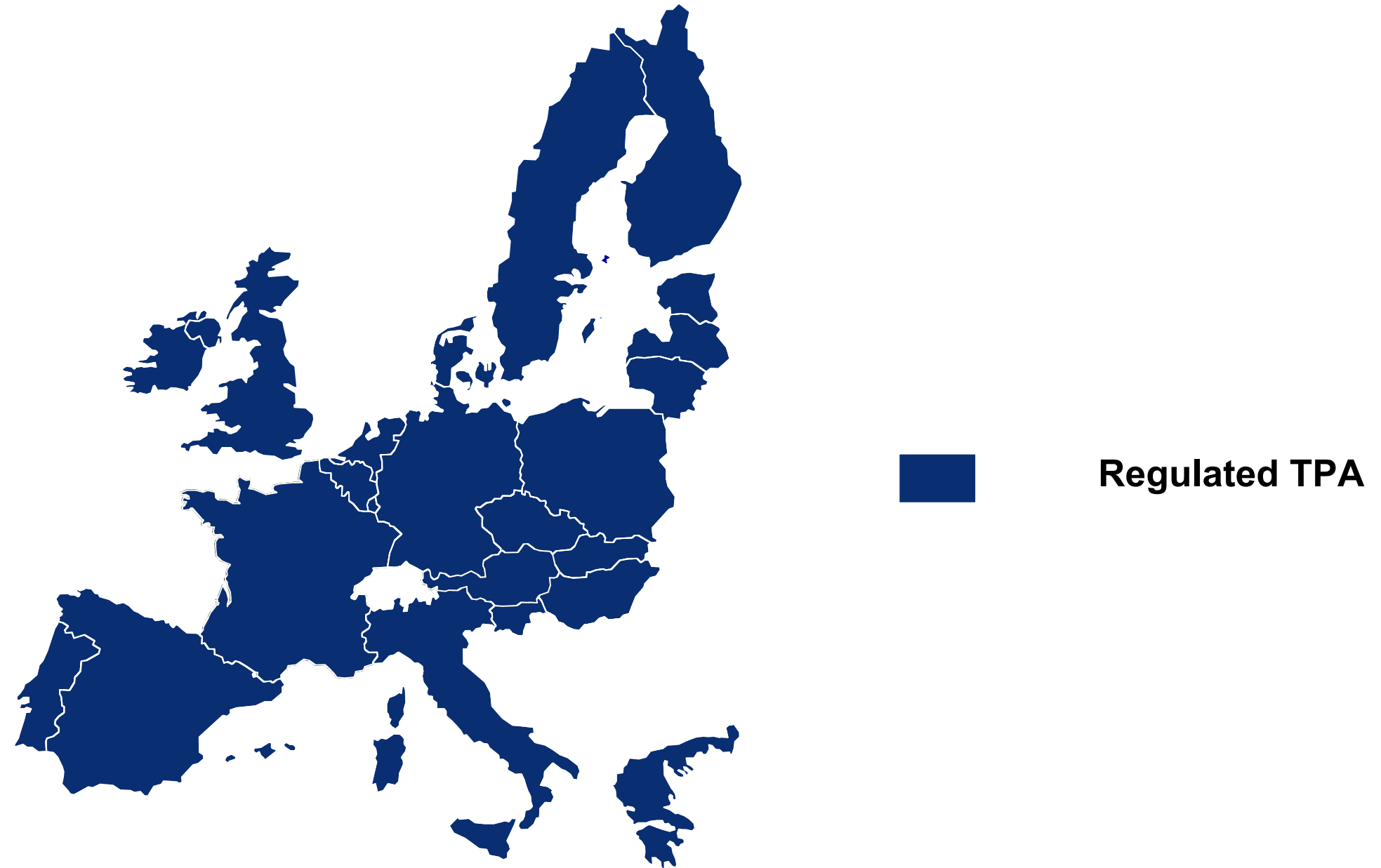
Balance responsible entities

Competitive Issues : Switching of Suppliers (large industrial consumers)

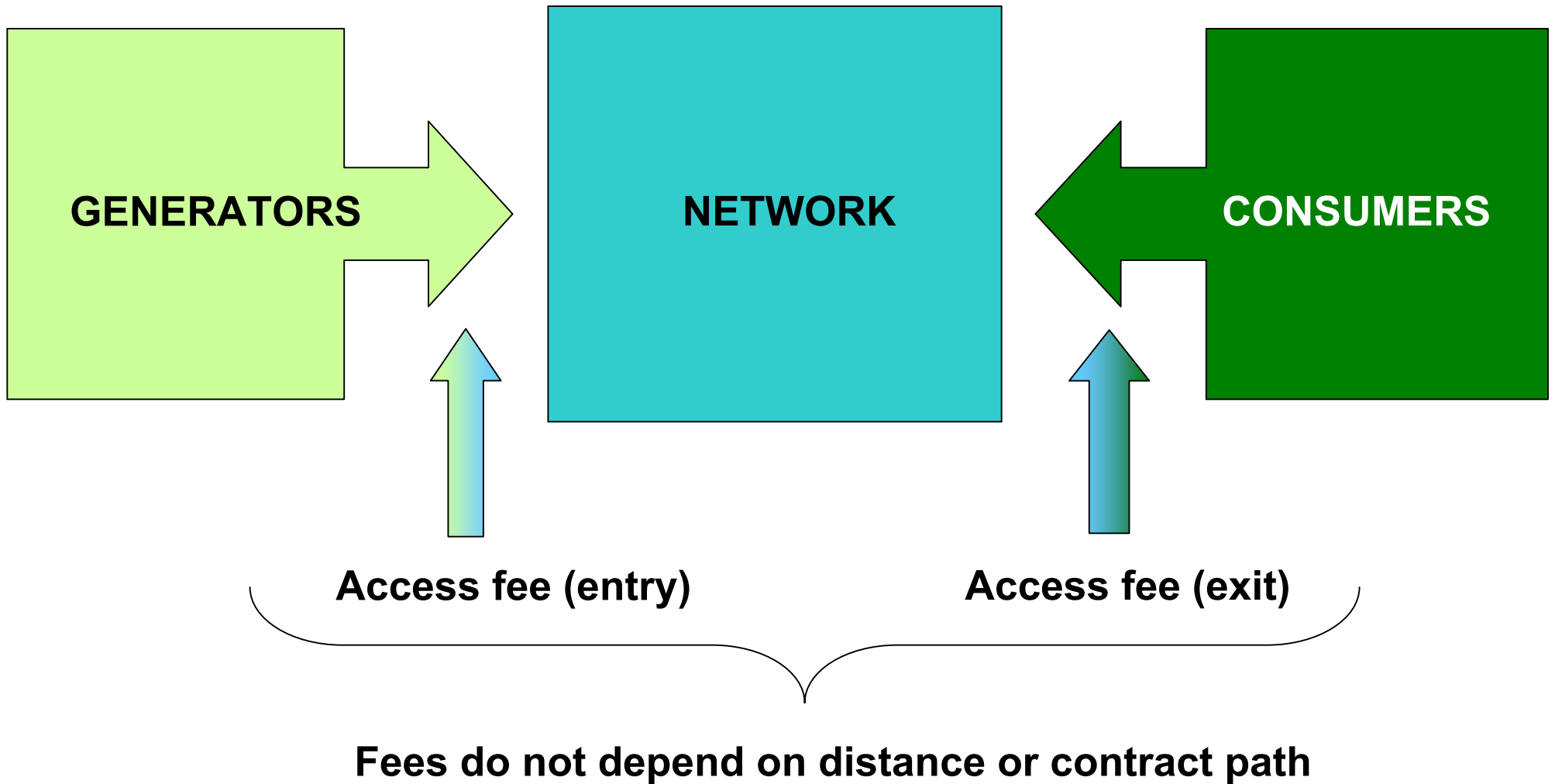


Figures : end of 2004

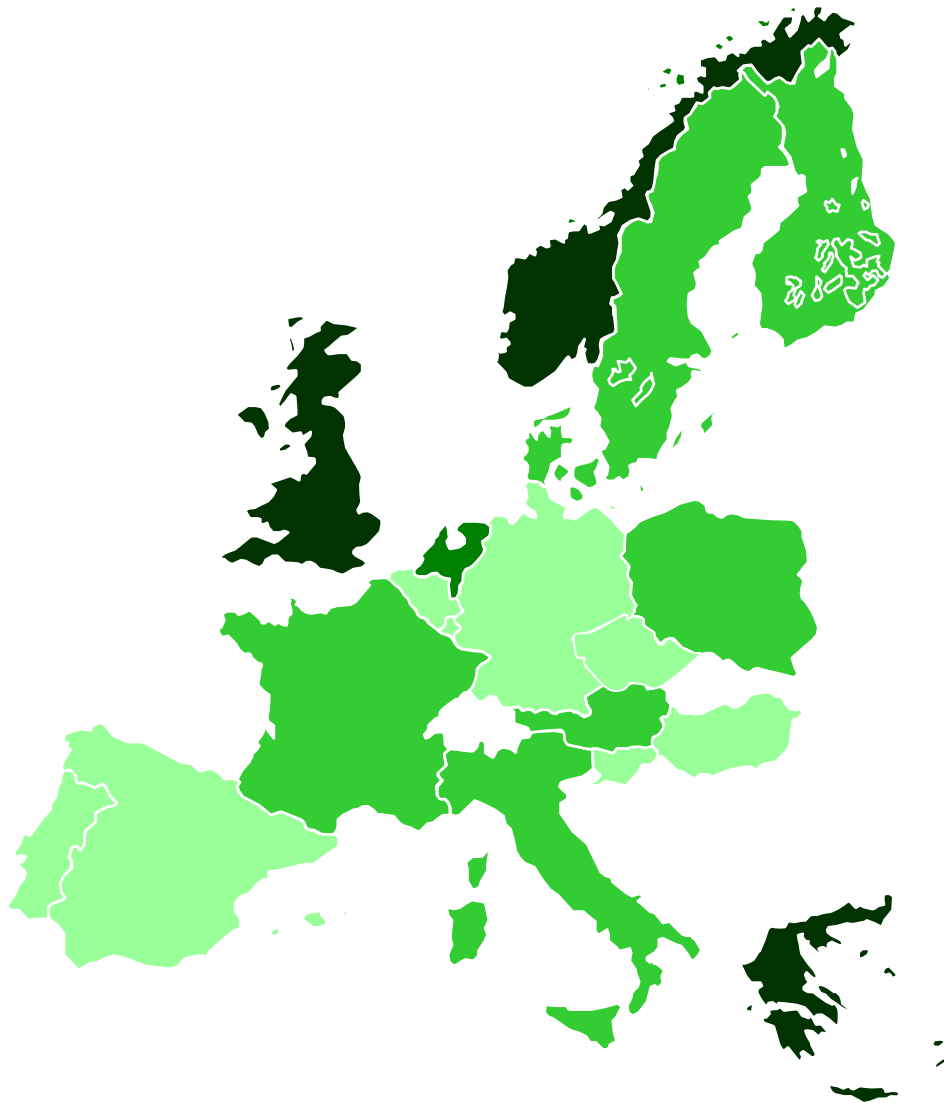
The TPA Issue



Transmission Tariff Design



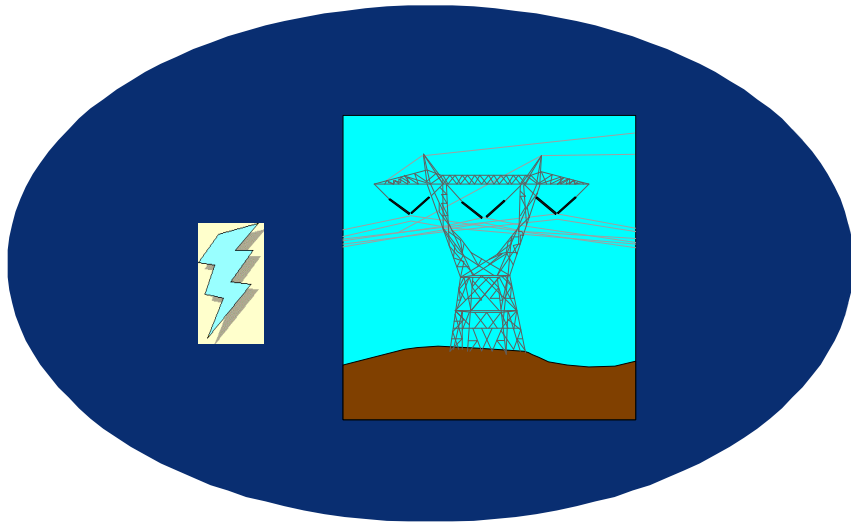
Transmission tariff : the injection fee



- 0 €/MWh
- 0 to 0.7€/MWh
- 0.7 to 1.5 €/MWh

The fee for generator access is small compared to the fee for customers (3 to 7 €/MWh)

TSO \neq PX

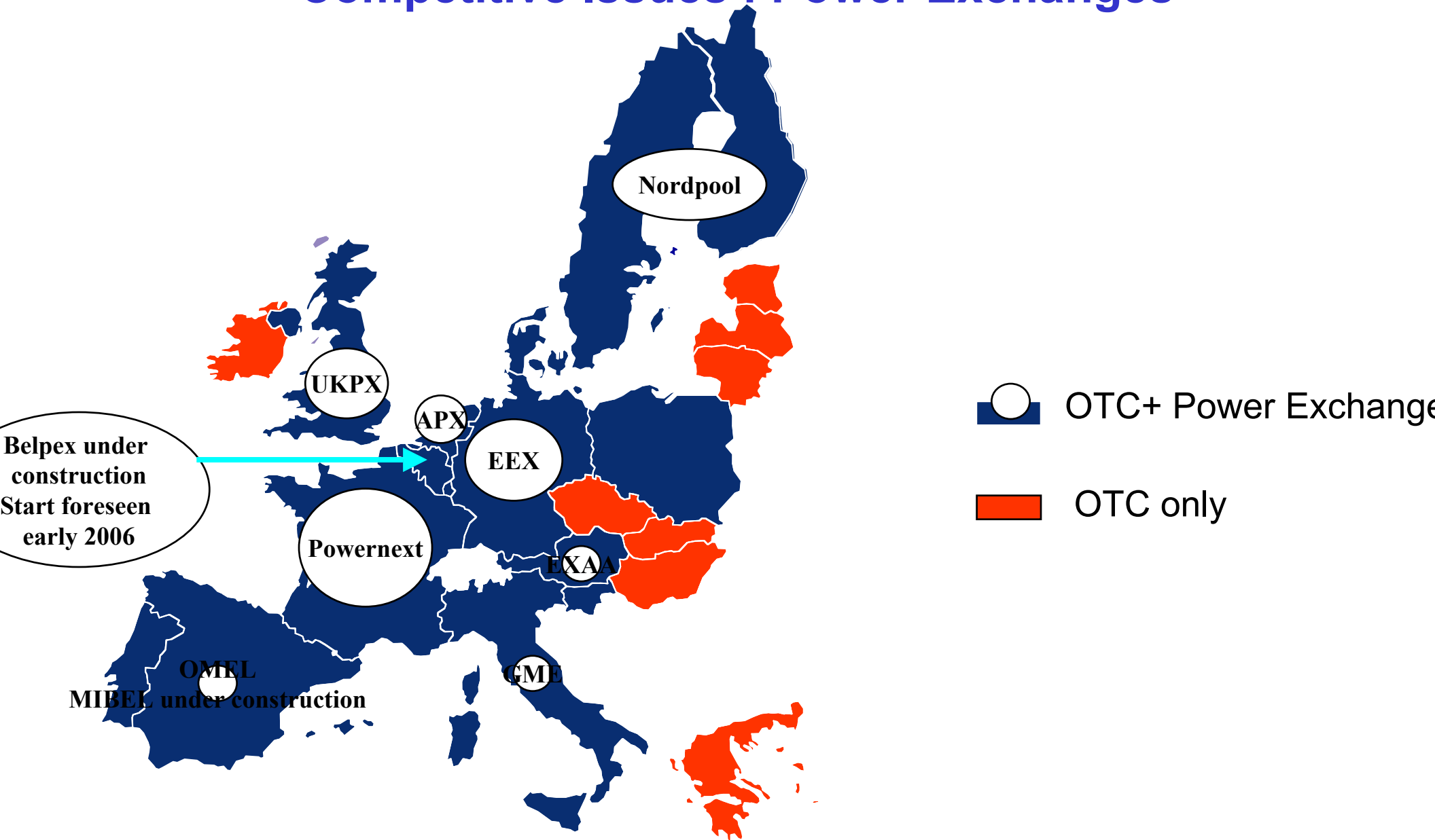


**TSO : Physical flows
Transmission Operator
System Operator,
Balancing Market Operator**



**Power Exchanges:
Day Ahead Market
Forward Markets**

Competitive Issues : Power Exchanges



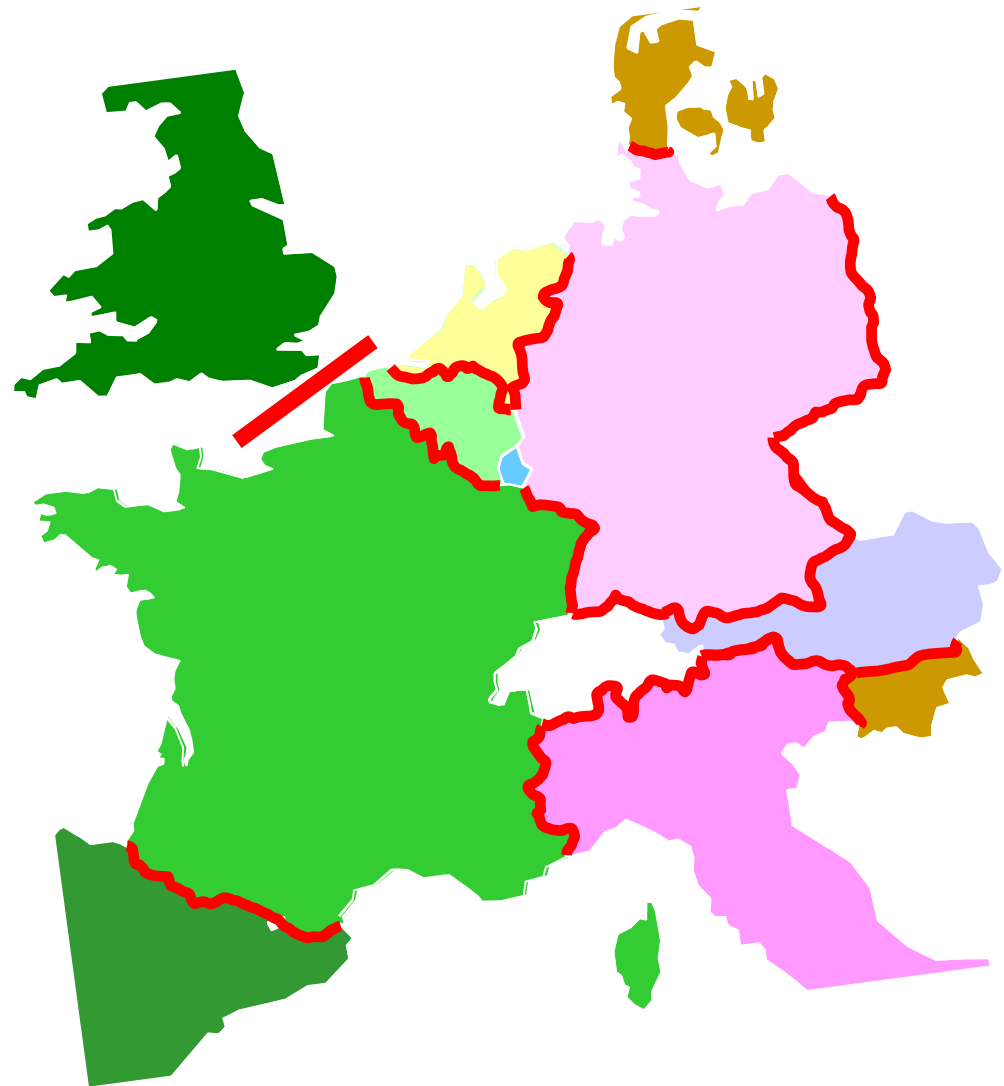
Congestion Management



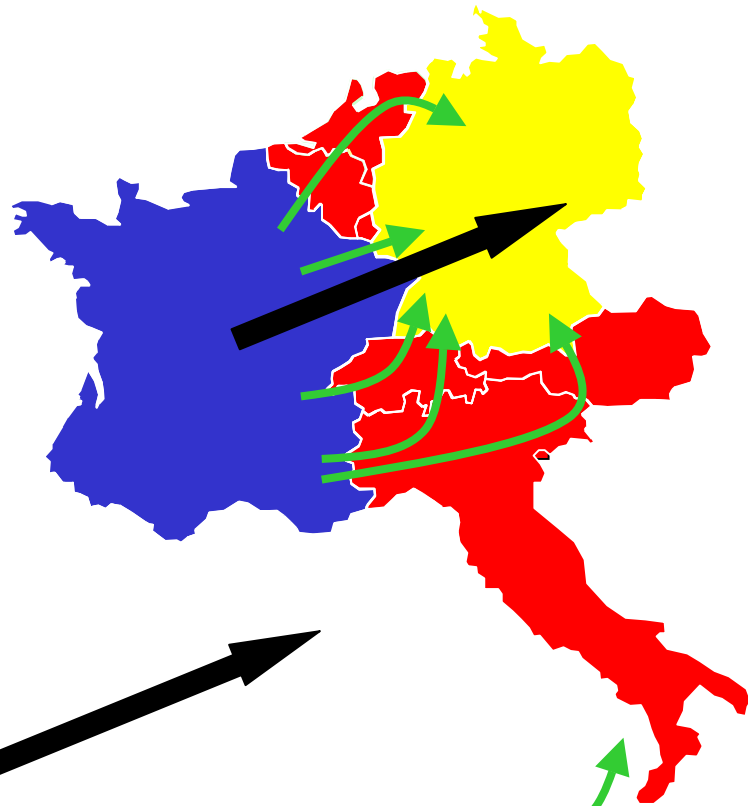
 Congested border

Market-based allocation methods:

- **Explicit auctions of capacities (UK-France, the Netherlands,...)**
- **Implicit auctions**



The pancaking question

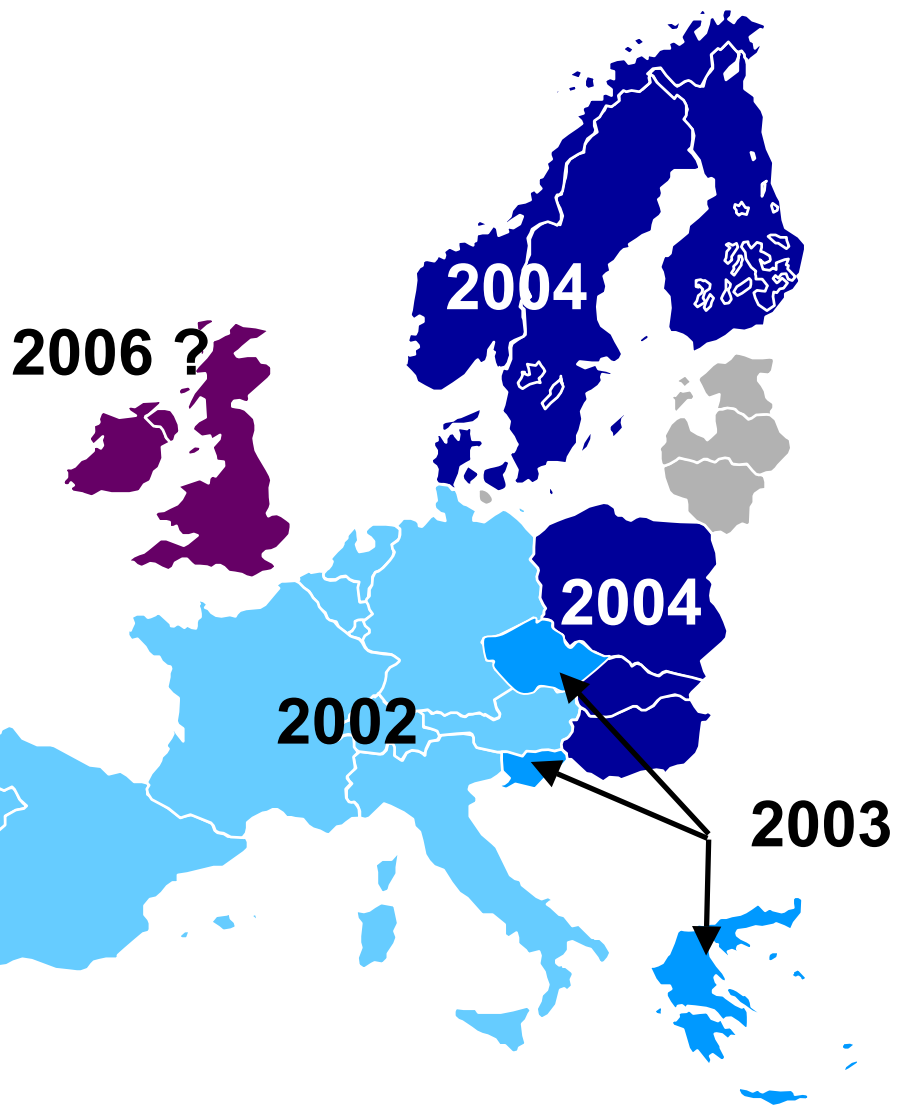


- Transits are flows crossing a country but not originating from this country,
- The first European directive did not indicate how to price the transmission of transit,
- First national solutions often consisted in two fees, one importing and one exporting fee,
- This pancaking situation limited possibilities of electricity trade !

Physical flows

Commercial exchange

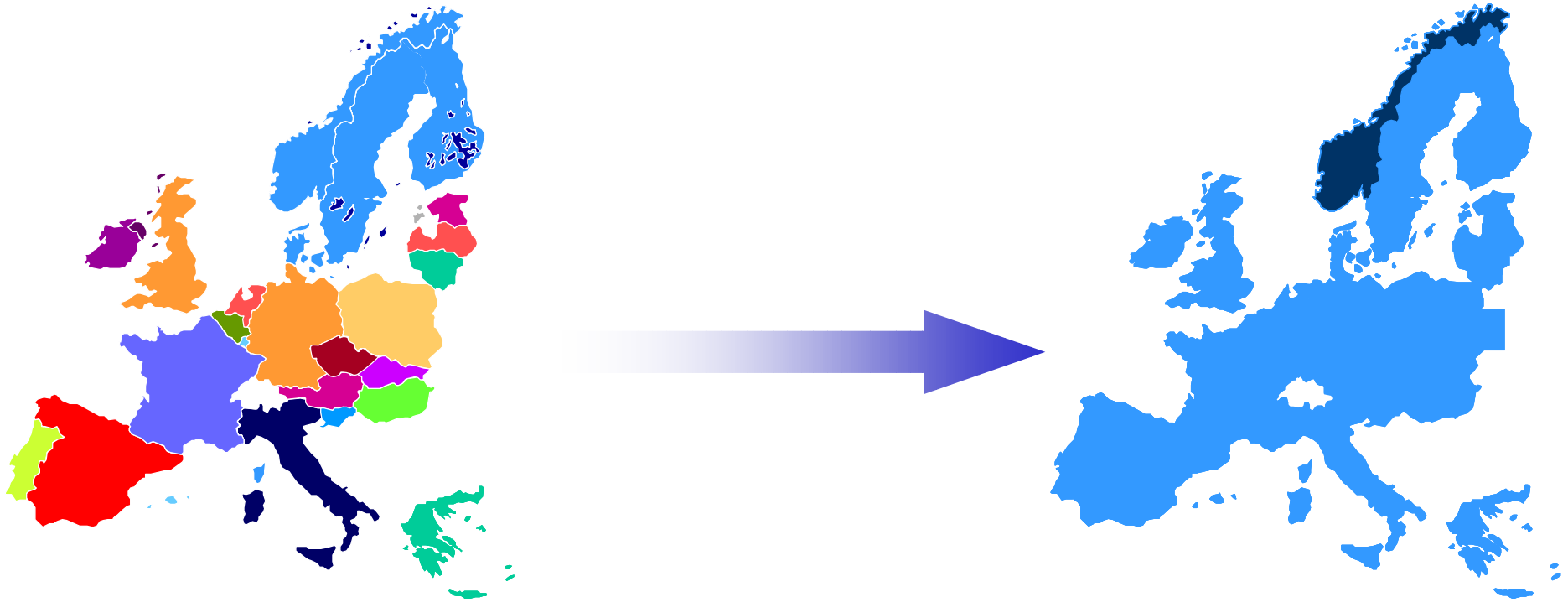
No more fee at each national border



ETSO, the European Association of Transmission System Operators, has solved the question of pancaking by building an Agreement between TSOs in 2002:

- Transited countries receive money in proportion of the transited energy and of their network cost,
- Exporting and importing contribute in proportion of their exports and imports.

Integration of the IEM



Implementation of market mechanisms to manage congestion on tie-lines,

Development of new tie-lines, facilitated by the TO+SO integration.

European Market Design in brief

Towards a common model:

- ✓ **A Transmission and System Operator, owner of the assets,**
- ✓ **A Balancing Market managed by the TSO,**
- ✓ **Day-Ahead and Forward Power Exchange,**
- ✓ **National regulators,**
- ✓ **Regulated TPA with entry and exit fee.**

The success of the IEM relies on:

- ✓ **A deep involvement of TSOs in the design of Market rules,**
- ✓ **A real independence of TSOs and an increase of their coordination.**