



GESTIONNAIRE DU RÉSEAU DE TRANSPORT D'ÉLECTRICITÉ

RTE

The French Transmission System Operator

RTE TRANSMISSION LINES



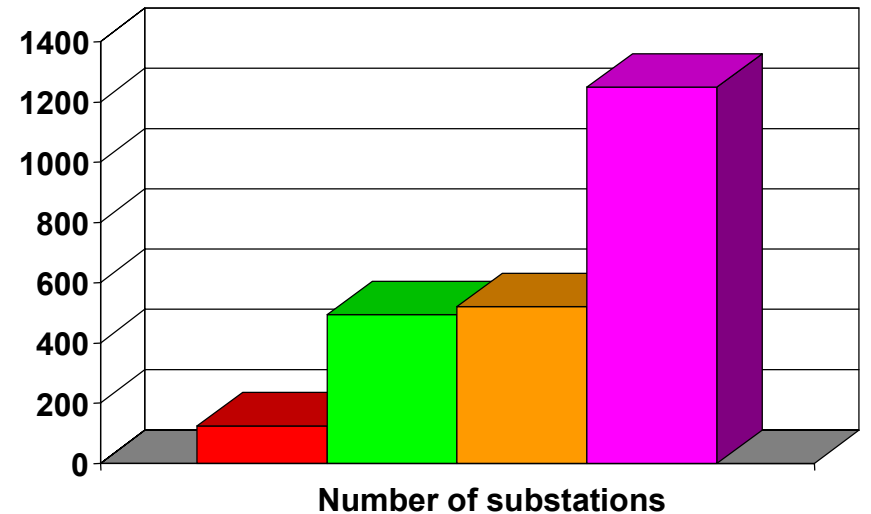
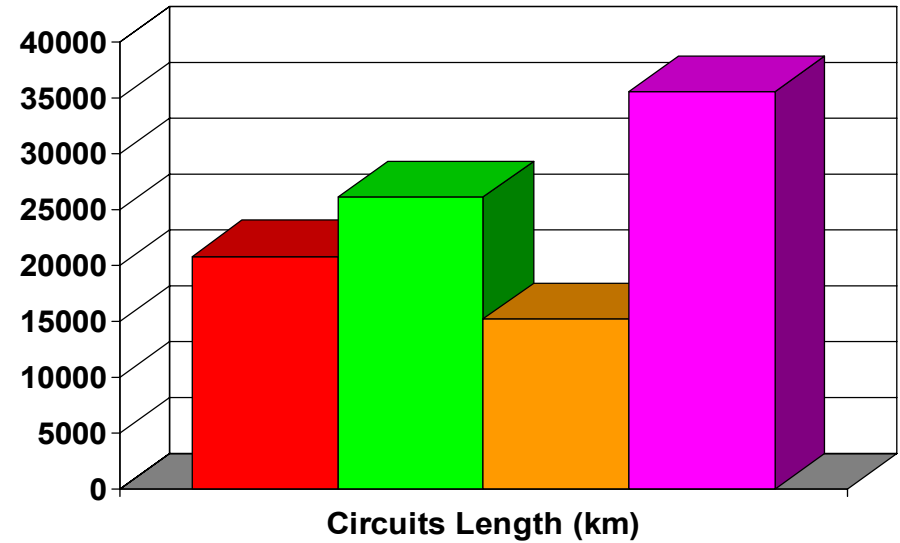
FRENCH TRANSMISSION NETWORK

- Main and interconnexion network

↪ **400 kV**

- Regional distribution networks

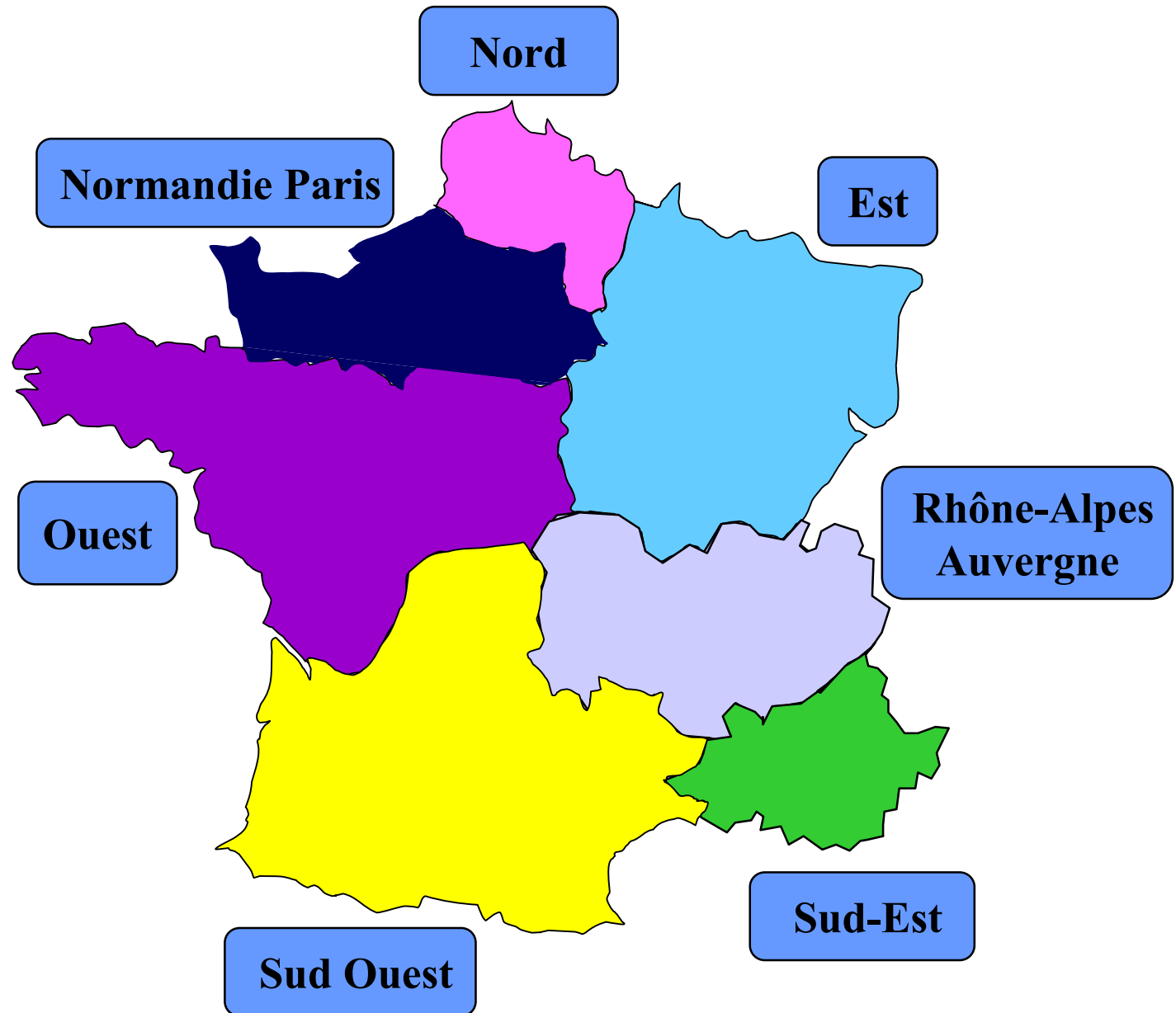
↪ **225 kV, 90 kV**
et **63 kV**



■ 400 kV ■ 225 kV ■ 90 kV ■ 63 kV



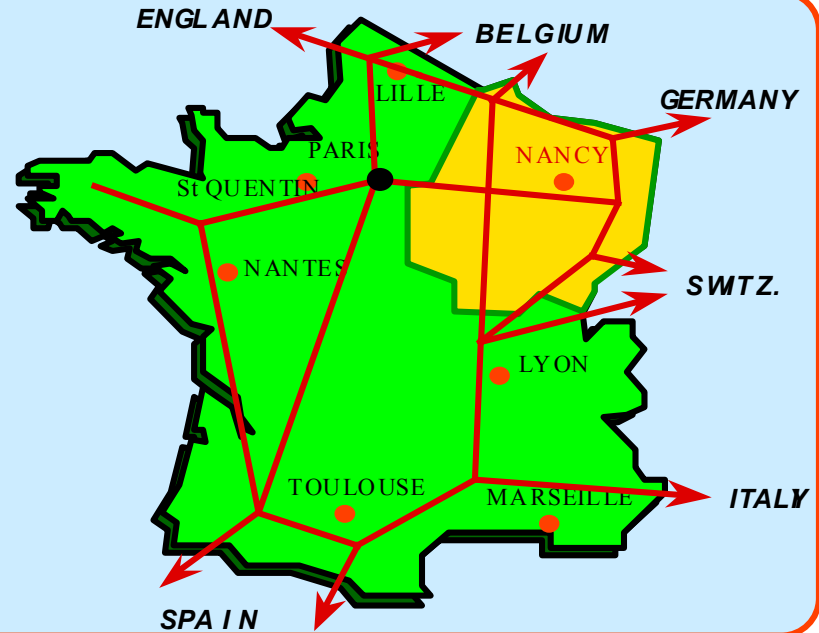
7 RTE REGIONAL AREAS



POWER DISPATCHING

National Control Centre

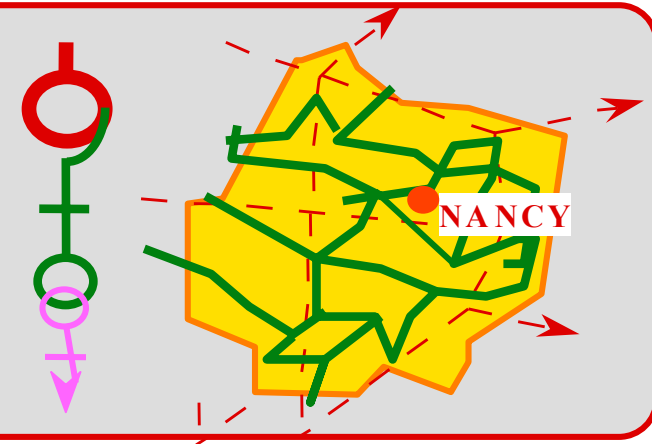
400 kV



TSO
(RTE)

7 Regional Control Centres

225 kV 63 kV



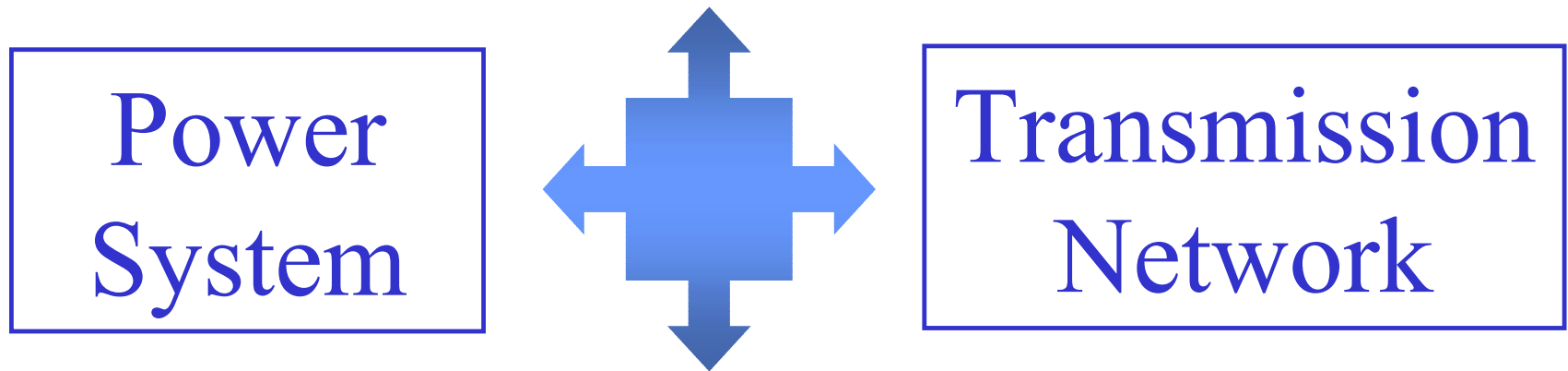
DSOs

EDF & other distributors

low & medium voltage



TWO MAIN AND INSEPARABLE ACTIVITIES



Responsible for:

- transmission system access
- power system safety
- network development project management

Flow management

≈ 1 000 people

Responsible for:

- network maintenance
- network development engineering

Industrial management

≈ 6 000 people

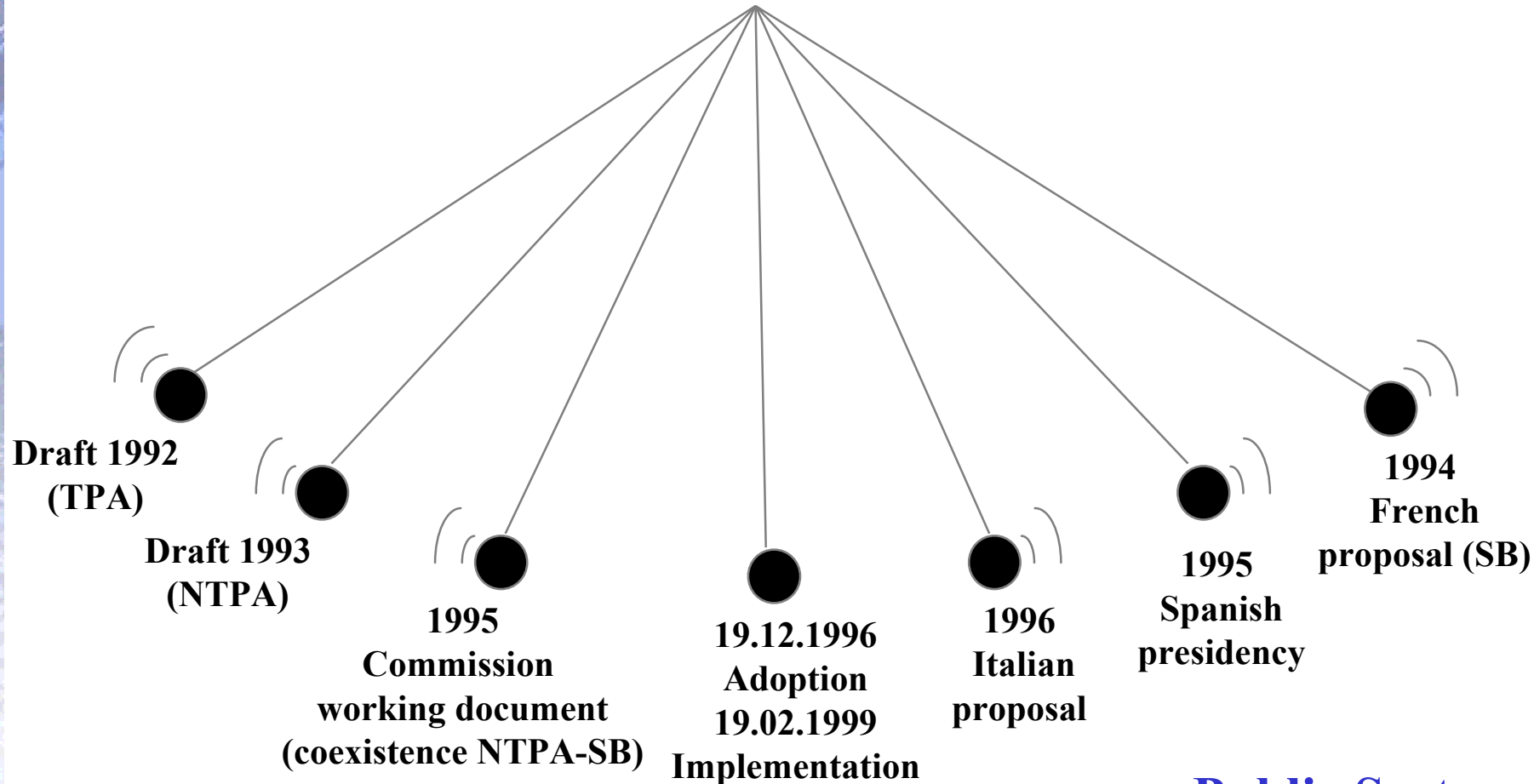
Competencies and activities are
at the same time different and complementary

EUROPEAN MARKET LIBERALISATION



NEGOTIATING THE DIRECTIVE

Between two extremes



Market-oriented

Public Sector-oriented



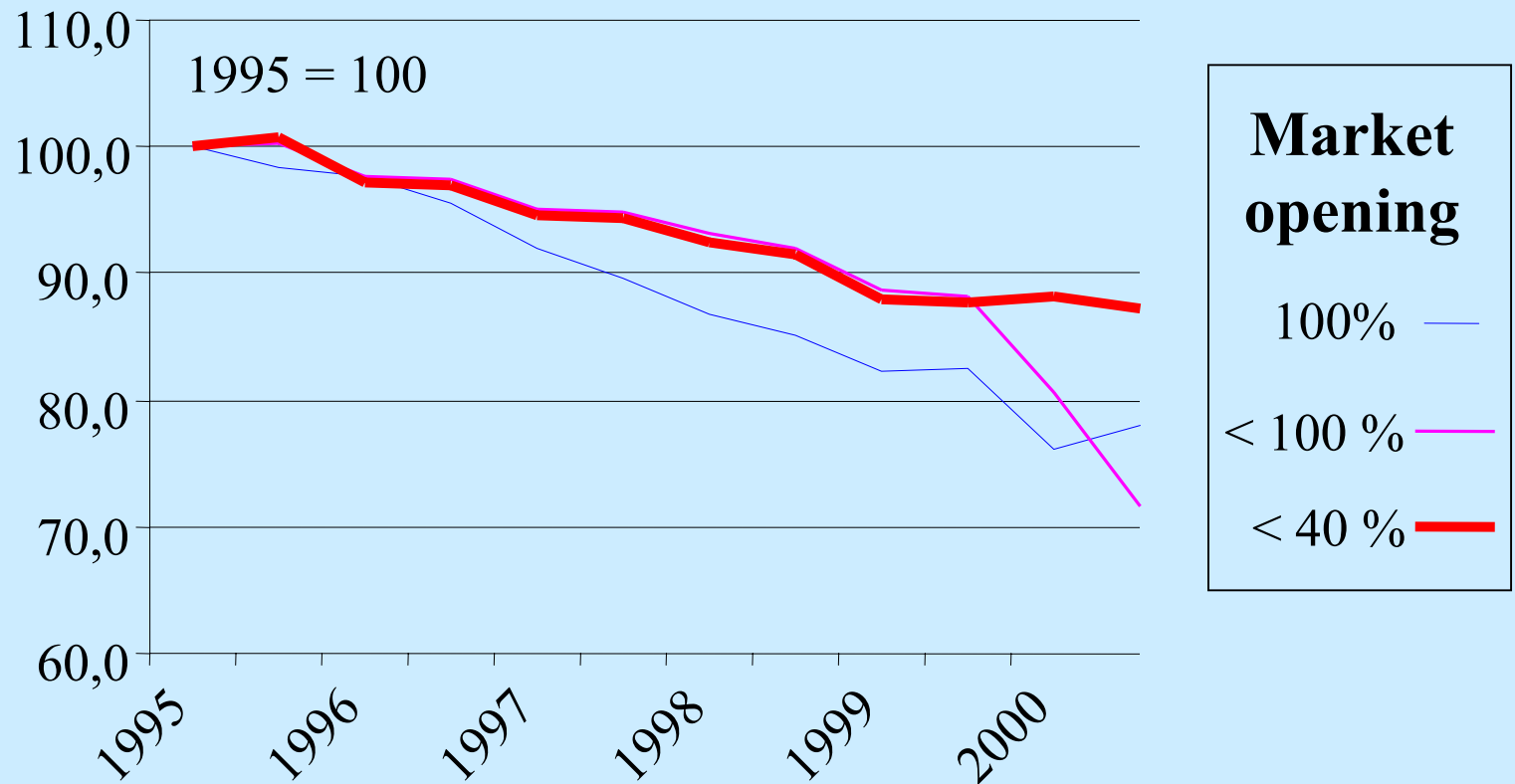
A COMPROMISE TEXT

- Progressive but limited market opening:
 - 1999: $\geq 27\%$ }
 - 2000: $\geq 30\%$ } of European market
 - 2003: $\geq 35\%$ }
- But it's only a step: new market opening before 2006
- Measures to ensure a smooth running of the market:
 - ↪ independent transmission system operators
 - ↪ account unbundling for generation, transmission & distribution activities
 - ↪ independent national regulators

MARKET OPENING IN THE E.U.

| | 2000 opening | production procedure | TSO unbundling | TPA |
|--------------------|---------------------|-----------------------------|-----------------------|-------------|
| Portugal | 30 % | auth. / tender. | legal | S.B. / reg. |
| France | | auth. + tender. | management | regulated |
| Greece | | authorisation | legal | |
| Ireland | | | mostly legal | |
| Austria | | | legal | |
| Netherlands | | | management | regulated |
| Italy | | | ownership | |
| Belgium | | | legal | |
| Luxembourg | | | management | |
| Spain | | | 54 % | ownership |
| Denmark | 90 % | | legal | |
| Finland | 100 % | | ownership | |
| U.K. | | own. / legal | | |
| Sweden | | ownership | | |
| Germany | | manag. / legal | negotiated | |

EVOLUTION OF E.U. ELECTRICITY PRICES



The bigger market opening, the stronger price reduction

TOWARDS A NEW DIRECTIVE - MARKET

13.03.2001 - Commission's proposal

- Eligibility:

- ↪ 01.01.2003: all non-domestic electricity customers

- ↪ 01.01.2005: all electricity customers

- Unbundling:

- ↪ legally and functional separation
of transmission & distribution system operators

- Third party access: ↪ regulated TPA only

- Regulation:

- ↪ independent regulatory authorities with competence
to set/approve tariff & conditions for network access

TRANSMISSION IN THE NEW CONTEXT

In the framework of progressive liberalisation of electricity markets in Europe, the transmission function plays an essential role for smooth running of the market

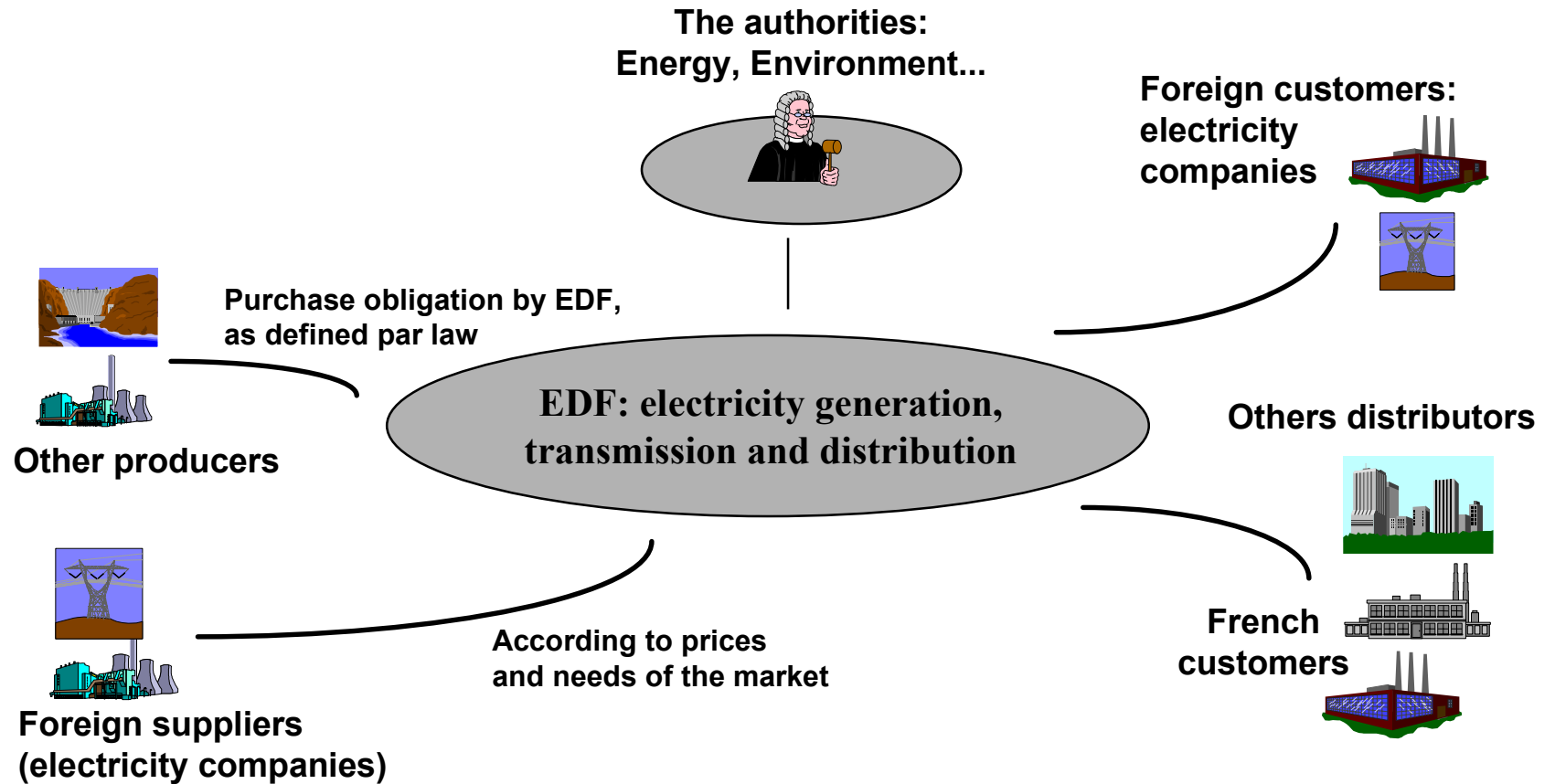
Access must seem easy
to producers, traders,
consumers...

TSOs manage
the complexity of the system
(technical constraints,
balancing, bottlenecks...)

APPLICATION TO FRANCE

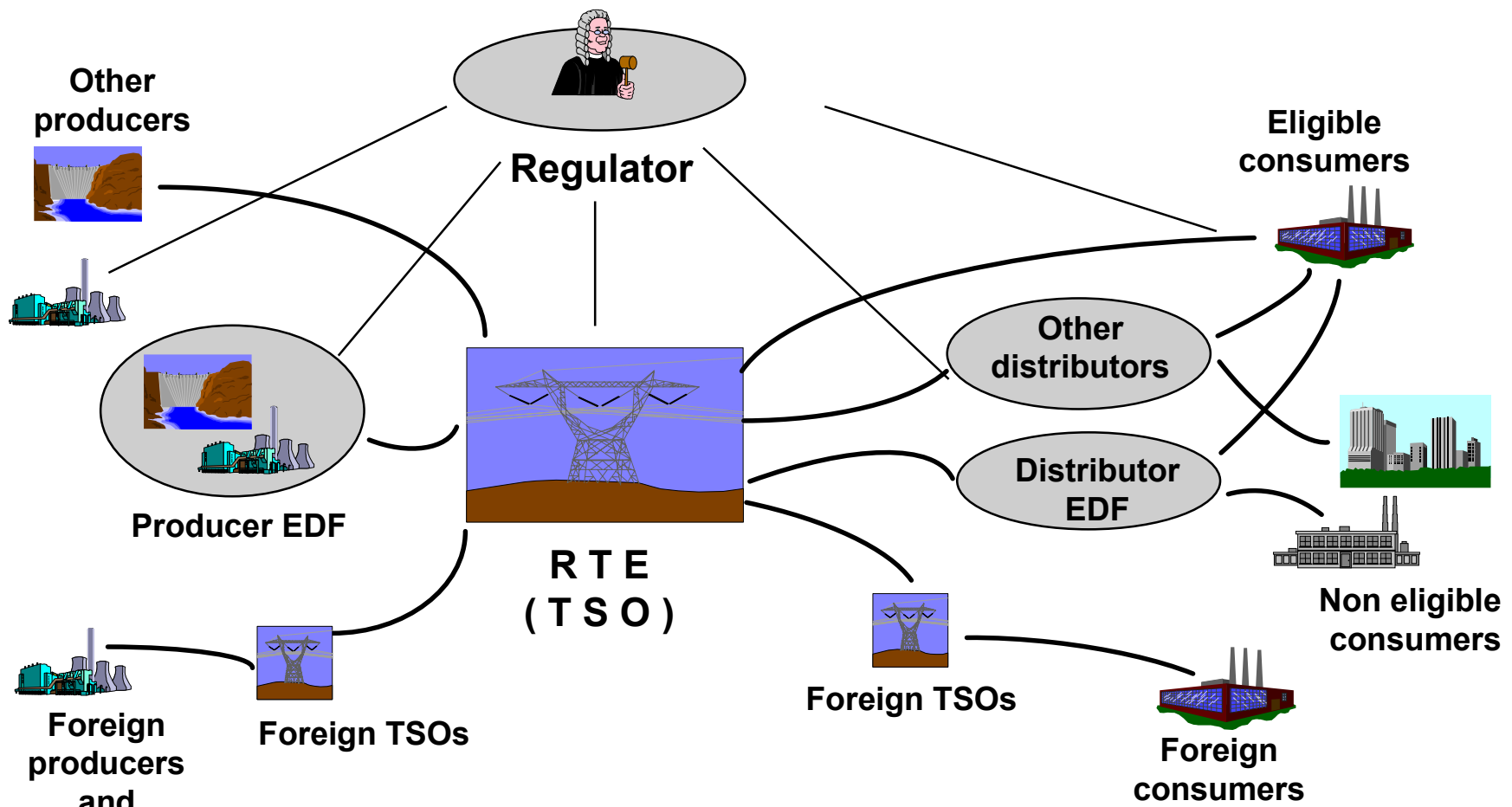


FROM MONOPOLIES ...



EDF was ensuring the optimisation of all generation means in France, and was the unique supplier of final customers [exception: other distributors].

... TO LIBERALISATION



- **Competing suppliers**

- **Eligible consumers, who are free to choose their suppliers**
- **Non eligible consumers**
- **Foreign consumers**



ELECTRICITY GENERATION

- Long-term planning of generation investments
- Authorisation procedure:
 - ↳ > 4.5 MW: operating license
 - ↳ ≤ 4.5 MW: simple declaration
- Tender procedure when capacities don't fit objectives of long-term planning
- Electricity purchase obligation by EDF and other distributors:
 - ↳ “clean” energy

REGULATION

- Electricity Regulation Commission (CRE):
 - ↳ 6 qualified members:
 - ✓ six-year period non renewable mandate
 - ✓ various incompatibilities + impartiality, independence and professional confidentiality
 - ↳ services placed under president's authority

ROLE OF RTE IN THE NEW CONTEXT



RTE MISSIONS

- **Transmission infrastructure management:**
 - ↳ operates and maintains public transmission grid
 - ↳ is responsible for its development
- **Power system operation:**
 - ↳ manages power flows and ensures balancing
 - ↳ implements ancillary systems and compensates losses
 - ↳ implements metering and compensates imbalances
- **Ensuring access to public transmission system:**
 - ↳ concludes contracts with transmission system's users

While ensuring:

- ✓ least cost
- ✓ system security
- ✓ absence of discrimination

RTE POSITION

- Department within an integrated company, EDF
- Management independence from other EDF activities
- Account unbundling within EDF



ENSURING INDEPENDENCE

- **Financial independence:**
 - ↪ within EDF, RTE has its own budget
 - ↪ its CEO is entirely responsible for its management
- **Management independence:**
 - ↪ RTE employees can only receive instructions from CEO or one of his representative
- **Organic independence:**
 - ↪ RTE CEO cannot be member of EDF Board
 - ↪ protocols set the relations between RTE and EDF other activities (in particular conditions of access to system and application of access tariffs)
 - ↪ RTE set up its own information system

ROLE OF THE REGULATOR

- **The CEO of RTE:**
 - ↪ is appointed by energy minister after CRE opinion
 - ↪ reports on RTE activities to CRE
- **Electricity Regulation Commission (CRE):**
 - ↪ gets RTE budget and accounts
 - ↪ approves RTE annual investment programme
 - ↪ approves unbundling rules
 - ↪ settles disputes between RTE and system users
 - ↪ proposes system use tariffs to energy minister

RTE WEB SITE

RTE

Web site in English

Qui sommes nous ? Actualités Accès au Réseau Environnement Capacités de Transit Courbes de Charge Acteurs du Marché

GESTIONNAIRE DU RÉSEAU DE TRANSPORT D'ÉLECTRICITÉ

Dernière minute

Le RTE vient de décider, après concertation avec la CRE, une hausse immédiate du seuil de tolérance de ces écarts de consommation de 5 à 10%.

[Pour en savoir plus](#)

Le mot du directeur
Avertissement
Photothèque
Plan du site
Recherche
Nous écrire
Glossaire
Aide



<http://www.rte-france.com>

RTE and the POWER MARKETS



TWO TYPES OF MARKET PLAYERS

Electricity market players:

- ↪ suppliers
- ↪ traders
- ↪ “eligible” consumers
- ↪ even RTE itself,
as energy purchaser
to compensate its losses

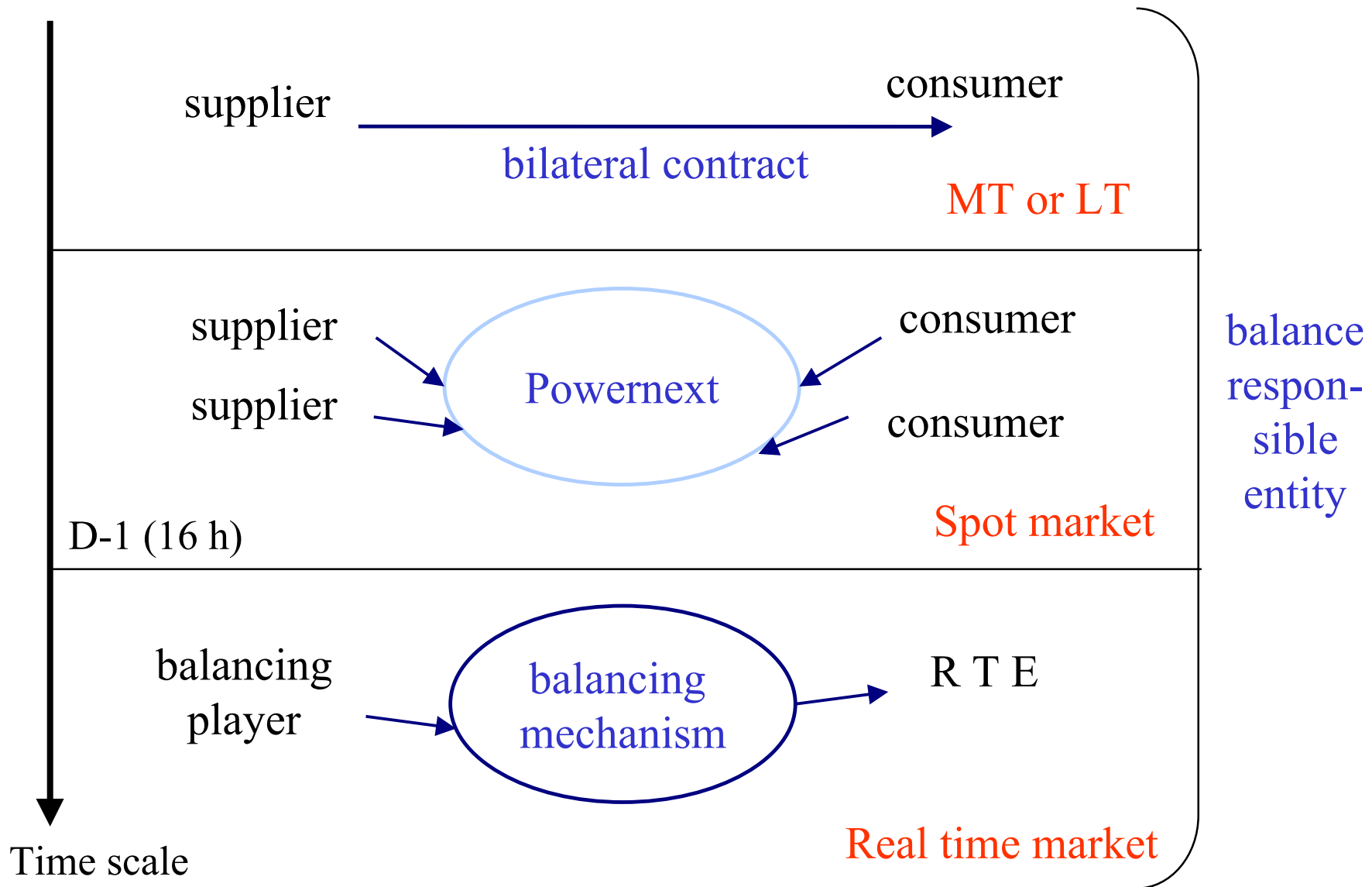
Financial settlement
of a posteriori imbalances

Physical players on electric grids:

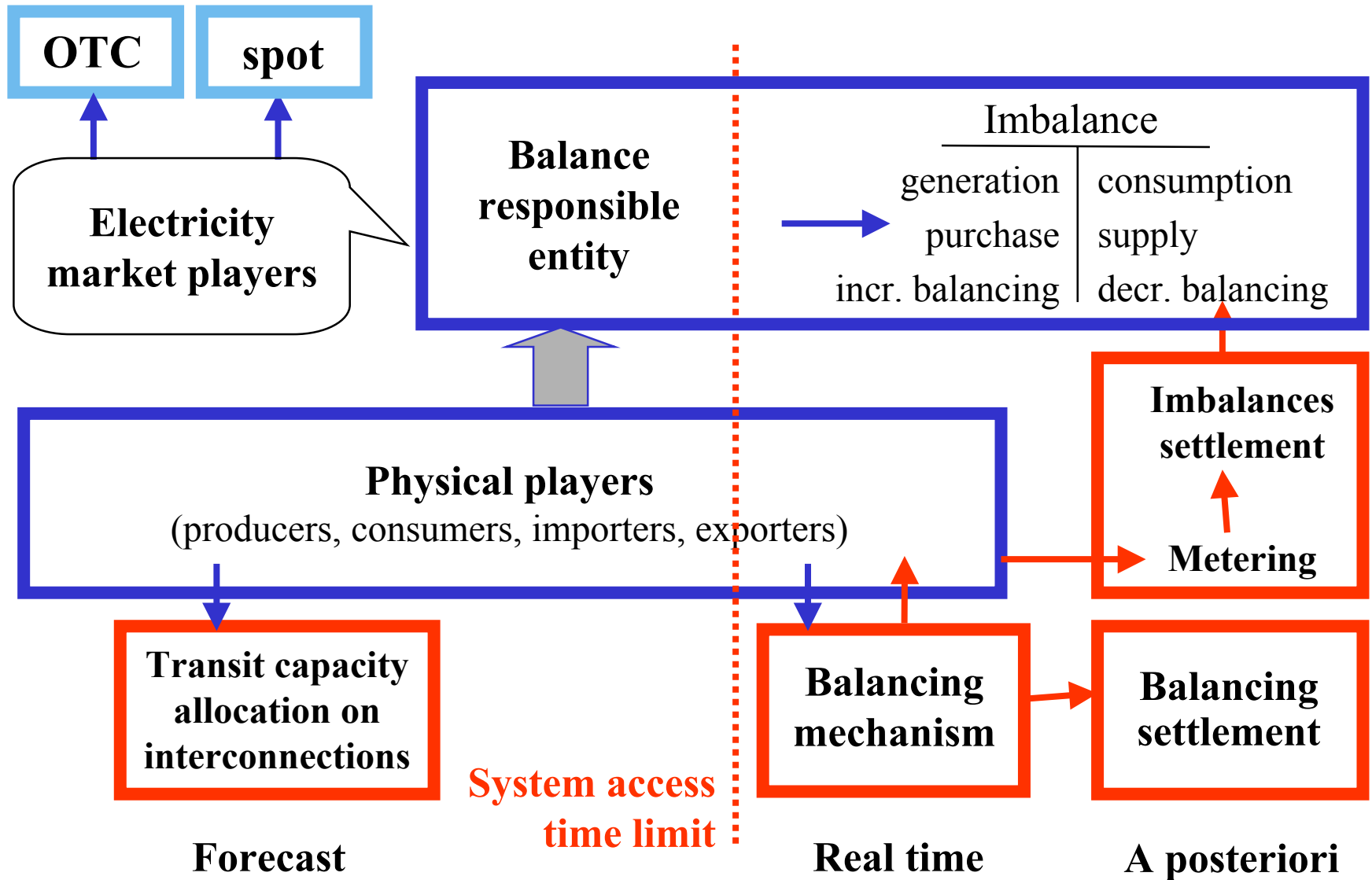
- ↪ French producers
- ↪ French consumers
- ↪ distributors
- ↪ importers and
exporters

Real-time
system security

DIFFERENT MARKETS



INTERACTIONS BETWEEN MARKETS



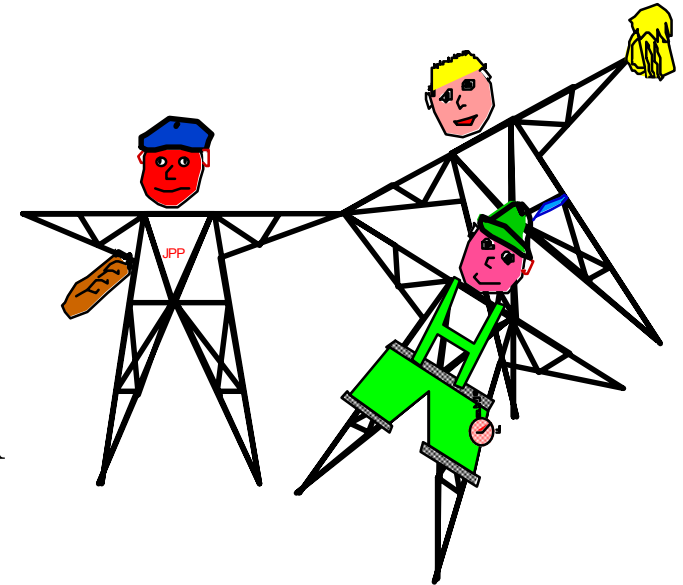
The EUROPEAN POWER MARKET



NETWORKS INTERCONNECTION






The advantages of networks interconnection:

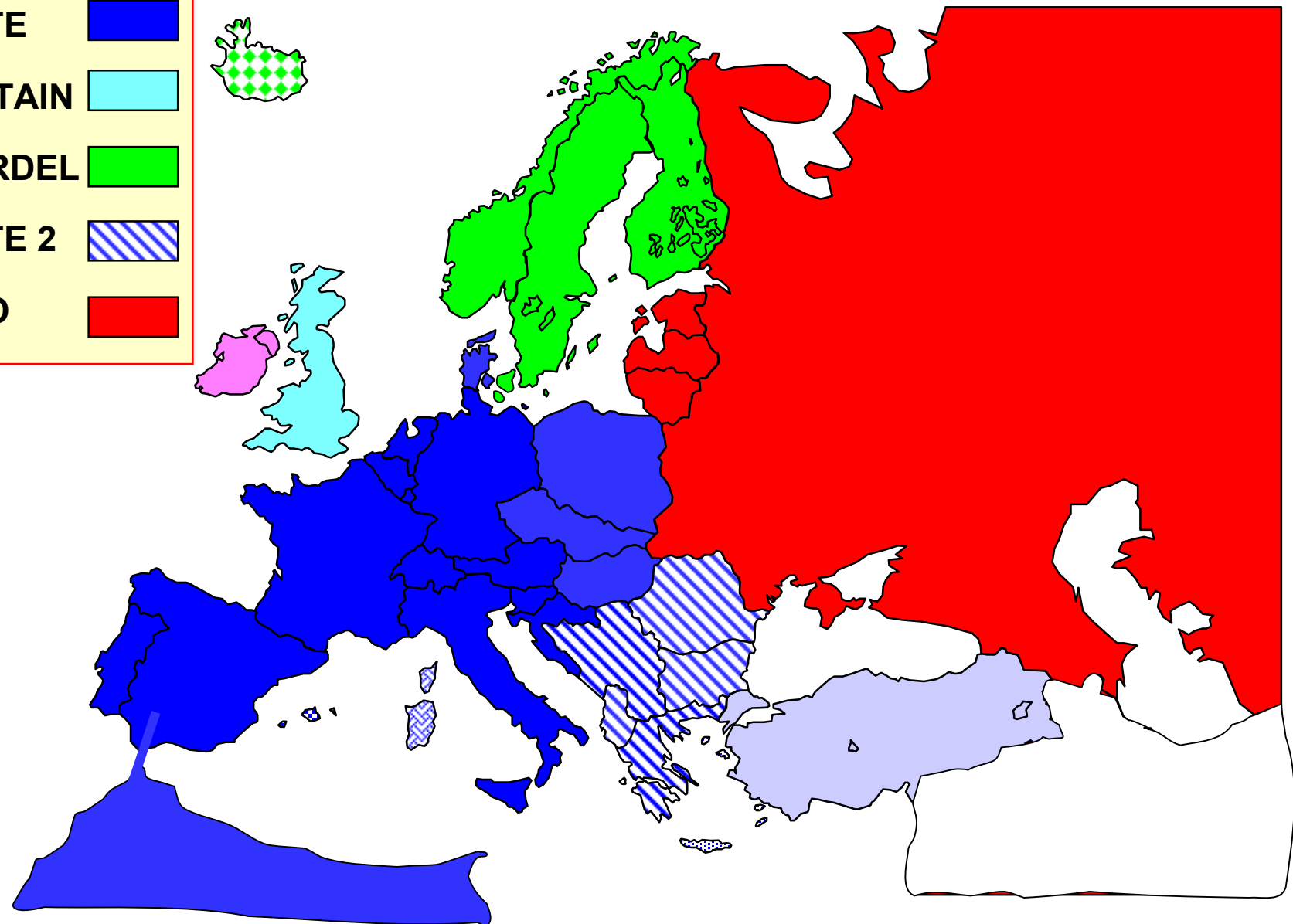
- ↪ pooling hazards to reduce their effects: all countries jointly contribute to safety
- ↪ reduction of generation investments & mobilisation of the most economical generation means



→ the biggest synchronous grid in the World:
“a huge machine with several pilots”

SYNCHRONOUS AREAS - 2002

| | |
|---------|---|
| UCTE |  |
| BRITAIN |  |
| NORDEL |  |
| UCTE 2 |  |
| CDO |  |



ELECTRICAL EUROPEAN UNION TODAY

- Some data:
 - ↳ 22 countries: 15 E.U. + Switzerland, Norway, accession countries
 - ↳ annual consumption: about 2 800 TWh
 - ↳ annual exchanges: about 270 TWh
- TSOs get organized: ETSO