UCTE
Security of the Power System as a Basis for Electricity Markets

Marcel Bial, Secretary General
Presentation overview

- Introduction
- UCTE synchronous area
- UCTE Security Package
  - Operation Handbook
  - Enforceability of UCTE Rules
  - UCTE System Adequacy
From a „club“ to a „system watchdog association“

- **1951**: UCPTE members were representatives of companies
- **1996**: UCPTE membership changed to interconnected companies
- **1999**: „P“ was dropped and UCTE became a TSO organisation
- **2001**: UCTE gained civil status transforming itself to an International Association (AISBL acc. to Belgian law) with a permanent secretariat in Brussels
UCTE overview: Key figures 2005

- Transmission System Operators: 33
- European Countries: 23
- Customers: 430 mil.
- Installed capacity: 560 GW
- Electricity consumption/year: 2500 TWh
- Electricity exchanges betw. countries/year: 270 TWh
- Length of high voltage lines: 230,000 km
SECURITY FIRST!
Main mission of UCTE

Providing the basis for a functioning electricity market

- Technical and operational co-ordination in the synchronous area
- Controlling the short-term security of the system with regard of load, frequency control and stability
- Monitoring the medium to long-term adequacy between generation and load (3, 5, 10 years)
- Responsibility for the development of the synchronous area
UCTE ahead of European integration

1951 UCPTE Founding Members A, B, F, FRG, I, L, NL, followed by connection of DK
1987 P, E, YU, GR membership, AL connected
1995 PL, CZ, SK, H (CENTRE) synchronised
1996 RO, BG connection
1997 – Maghreb,
2003 – West Ukr. connected
2005 „Study“ for TR interconnection
2005 investigations to interconnect East Mediterranean
2005 - Launching a broad feasibility study on IPS/UPS
New environment for TSOs

European Electricity Markets:

TSOs are facing:

- Unbundling of former vertically integrated companies,
- Liberalization of the Electricity Market resulting in an increasing competition between grid users.

While the development of markets already lead to

- a substantial increase of cross border transits with changes in operational patterns and several congested areas/borders
Physical Exchanges 1975-2004

Sum of electricity exchanges of the UCTE in TWh

- UCTE
- Ext.


Total: 290.0

255.2
Operation Handbook – the beginning

- UCTE heritage:

- Voluntary compliance with rules, adoption by „peer pressure“
- Mutual assistance based on common spirit of responsibility
- set of technical rules prepared within 50 years scattered in many documents
- The goal: one comprehensive set of TSOs standards, up-to-date and transparent:
  - Operation Handbook
The UCTE Security Package is 3-fold

- **Operation Handbook** as the *compendium of technical standards* related to the UCTE interconnected system

- **MLA** with the Operation Handbook as the cornerstone for the *legal framework ensuring the security* of the interconnected systems

- **CMEP** as a *permanent process* towards the implementation of the rules
OH core features

- **Clear** technical rules
- **Comprehensive and structured** summary of all existing documents
- More **rapid establishment** and review of rules
- **Adaptation** to new regulatory and market environment
- Additional **measures and monitoring** criteria required
- **Binding** security and reliability standards and **legal** enforceability
OH - principles

- Operation Handbook is the cornerstone for the legal framework ensuring the security of the interconnected systems
- The document is related to technical and internal organisational aspects of the interconnected system
- Step-by-step development
  - transformation of old rules and preparation of new standards
  - consultation with stakeholders
  - final approval (by the UCTE Steering Committee)
  - further studies and enhancements
Step-by-Step Policy Development

1. Load-Frequency Control and Performance
2. Scheduling and Accounting
3. Operational Security
4. Coordinated Operational Planning
5. Emergency Operations
6. Communication Infrastructure
7. Data Exchanges
8. Operational Training
Enforceability of UCTE Rules: MLA

- The Multilateral Agreement (MLA) as **first step** towards a set of binding European reliability standards that involves first all TSOs came into force on 1 July 2005.

- In a **second step** and in close co-operation with regulators, these reliability standards shall be made also binding to both TSOs and grid users.

- The Operation Handbook is an annex to the MLA, enabling its updating without changing the legal construction.
Definition of security standards in the Operation Handbook implies a procedure to **recurrently** monitor their compliance.

This procedure will enable the implementation of **preventive measures** to ensure the highest level of security in the UCTE system.

This tool aims at strengthening the **transparency and credibility** of TSO’s performance within the community as well as towards stakeholders.
Aims of UCTE System Adequacy Forecast

- Provision all European electricity market players with:
  - an overall view on system load evolution, as well as on the resources available to cover the system load
  - an overview on the main changes in the UCTE grids
  - a prospective view of supply reliability developments

System Adequacy Forecast: a tool for investment decision-making
Conclusions of the last UCTE System Adequacy

- Security of supply not at risk due to the adequacy of the system for the three coming years
- Should be ensured in 2010 but still two major uncertainties
  - effects of CO2 trading and EU directive on large combustion plants on existing fossil fuel plants;
  - market incentives for new investments

UCTE collaborates within ETSO with other TSO associations at the EU scale
Renewable Energy Sources

Increasing impact of RES, mainly wind power, in the generation mix of the UCTE system:

- new challenges to TSOs concerning
  - short term variations of power flows across borders and
  - the availability of balancing power.

- In the countries with high shares of wind power (Spain and Germany), significant development of the transmission network is necessary