



**Reliable: Everyday!**

**ANNUAL REPORT 2007**

Reliable: Everyday!

Dear Reader,

Have you had this experience?

When we write down our memories and thoughts, when we put pen to paper and preserve our experiences in words and sentences, we can relive them and it takes us back to the moment they happened.

Many people entrust their thoughts and secrets to a diary. They document important moments that are worth remembering. Such notes help them to gain transparency, to structure experiences and bring alive certain moments.

In contrast to previous years we have chosen to design the Annual Report as a diary. The emphasis of this idea is that UCTE is a reliable and indispensable partner in the life of each and every person, everyday - just as a diary is.

In short story form, members of UCTE have recorded a special day or occasion from their year 2007 within UCTE. These can be important dates or decisions, but can also be anecdotes from behind the scenes of which the general public is not usually aware.

We invite you to explore our annual report like a personal diary, and experience UCTE as a vital, innovative and reliable institution which stands for a secure supply of electricity for more than 500 million people.



Monika Walser

Convener WG Communications



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# PRESIDENT'S FOREWORD

## Reliable: Everyday!

Dear Reader,

While the economic surge of nationalism and the European Commission's firm reaction on 19 September (proposal for a 3rd Energy Package) dominated the headlines in late 2007, UCTE has focussed throughout 2007 on practical issues in keeping with our standing UCTE mission.

The rationale is rather elementary: any further development towards a better integrated Pan-European electricity market must foot on system reliability as the key pre-requisite to the overall security of the electricity supply of several hundred millions of European citizens. No doubt: Reliability comes first and then other important issues follow: regional market initiatives, quality of regulatory cooperation, ownership unbundling modalities for transmission system operators, criteria for transparency and information provision and effective access to maximum network capacity. All these issues can only be realized, if built on a reliable grid.

More than ever in its long history, UCTE stays firm in its commitment to achieve the crucial goal of system reliability at the heart of "electrical" Europe. This aim is built on the three pillars of security, adequacy and interoperability.

In 2007, UCTE updated its vision for the future of the transmission sector in Europe in order to improve reliability in Europe and enhance the benefits of the UCTE Security Package for all system actors. The security package consists of the Operation Handbook, the multilateral agreement and the Compliance Monitoring and Enforcement Process. In this vision, legitimacy

has been revealed to be a key element still absent at the pan-European level. Legitimacy for actions with an impact on the security of supply in Europe can only be given by direct government mandates, laws or European directives. However, any such legal measures must be sufficiently harmonised throughout the European Union and its neighbouring systems. Only by implementing measures such as this it will be possible to achieve the formal authority required for the development of stricter, legally binding standards applying to reliable system operation and planning. In order to enforce mandatory compliance with these standards, a stricter monitoring process will be necessary for all participating parties. This will be possible through the use of efficient sanctioning mechanisms and by agreeing on funding models which allocate adequate resources for the development and implementation of new reliability mechanisms within the upgraded structures.

The interaction between reliability and market mechanisms must be taken into account together with the fact that the development of market standards can potentially conflict with the primary role of TSOs: continuity and reliability of service.

UCTE is also firmly committed to facilitating the development of competitive markets and strives to carry out its reliability responsibilities in ways that enable and encourage market solutions to the fullest extent possible. UCTE must be able to preserve system reliability for its member companies also in those areas of the system (comprising EU and non-EU countries) where competitive markets do not yet exist.

In order to meet the reliability objectives as efficiently as possible, it is critical to agree upon straightforward guiding principles on the relationship between reliability requirements and market issues. Strategic principles such as these could be made binding at the political level and thus formally recognise reliability as an essential condition for a robust European economy. They could also establish that no reliability standard shall give market participants unfair competitive advantages, prohibit specific market structures, preclude market solutions for achieving compliance with that standard or require the public disclosure of commercially sensitive information. It is understood that all market participants will have an equal opportunity to access well defined, commercially non-sensitive information at Pan-European level.

This is why UCTE supports the European Commission proposal to establish a new common platform for inter-TSO cooperation: the European Network of Transmission System Operators for Electricity ("ENTSO-E"). This cooperation will embrace the expectations of TSO stakeholders and ensure continuity of action through the acknowledgement of achievements by synchronous and regional TSO cooperation platforms. Furthermore, this will foster system reliability using the most effective tool that TSOs themselves cannot engineer: the enforceability of standards. UCTE equally considers that new legal and environmental requirements which simplify the permit-granting process for new lines are essential for achieving the objective of a liquid, internal electricity market based on a real and reliable European grid.

In 2008, UCTE will work intensely with all TSO associations in Europe with the clear aim of establishing new cooperation structures and mechanisms for the TSO community. UCTE will remain in permanent dialogue with all relevant stakeholders, relying on them to deliver the requisite legal and regulatory assurances and also for ensuring accountability amongst TSOs, generators, distributors, traders and other stakeholders. On the behalf of TSOs, this would even allow for the anticipatory adoption of a 3rd legislative package and concrete proposals for ENTSO-E.



José Rodrigues Pereira Dos Penedos

UCTE President | February 2007



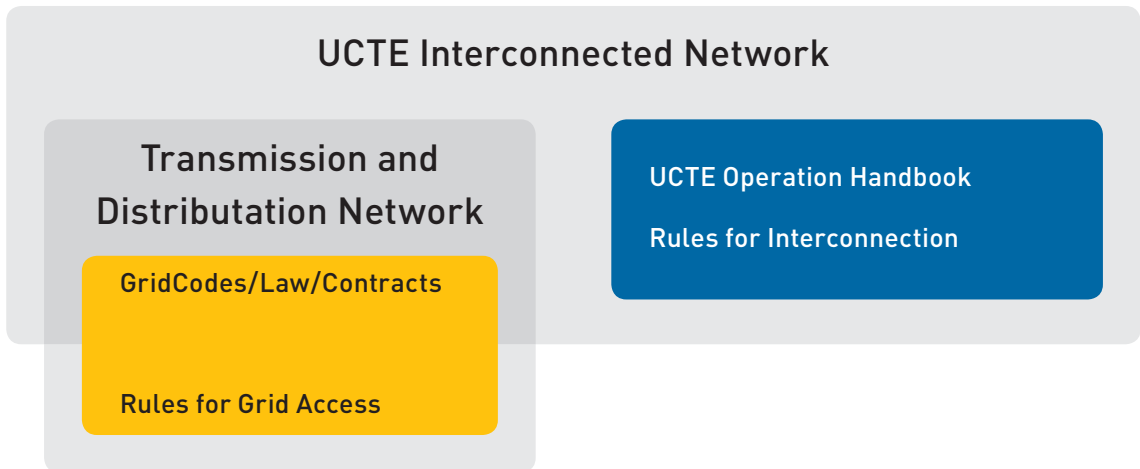
# OPERATION HANDBOOK

In the past, voluntary compliance rules were adopted by “peer pressure” between vertically integrated utilities. Following the changes in the industry and especially unbundling in the sector, this scheme of voluntary compliance was no longer adequate. In its task to promote the reliable and efficient operation of the interconnected power systems in Europe, UCTE answered to the challenges and developed the Operation Handbook, defining the first complete set of standards of the UCTE interconnected system.

The development was started in 2001, before the corresponding mandate was given by the Regulatory Forum in Florence. Unlike in recommendations developed through the 50-year history of UCPT, the new rules did not cover the whole chain of supply (generation, transmission, distribution) but referred only to TSO cooperation.

## Objectives of the Operation Handbook

The main objective of the “UCTE Operation Handbook” as a comprehensive collection of all relevant technical standards and recommendations is to provide support to the technical operation of the UCTE interconnected grid (synchronous area). This includes operation poli-



cies for generation control, reserves, security criteria, emergency procedures and special operational measures. The basic subject of the Operation Handbook is to ensure the interoperability among all TSOs connected to the synchronous area.

Standards for network access of customers, network tariffs, accounting, billing procedures and market rules as well as other standards that may be set by national GridCodes, laws or contracts are not within the scope of the Operation Handbook (see next figure).

With regard to the enforceability of these standards, in July 2005 all UCTE member companies signed a Multilateral Agreement by which they are contractually bound to follow rules of the Operational Handbook.

### **Finalization of the full set of policies**

In the first step, all relevant UCPTTE recommendations were transformed into a stringent set of policies. The new structure consists of 8 Policies which are internally arranged into criteria, requirements, standards, procedures, guidelines and measures.

<b>Policy 1</b>	<b>Load-Frequency Control and Performance</b>
<b>Policy 2</b>	<b>Scheduling and Accounting</b>
<b>Policy 3</b>	<b>Operational Security</b>
<b>Policy 4</b>	<b>Coordinated Operational Planning</b>
<b>Policy 5</b>	<b>Emergency Operations</b>
<b>Policy 6</b>	<b>Communication Infrastructure</b>
<b>Policy 7</b>	<b>Data Exchanges</b>
<b>Policy 8</b>	<b>Operational Training</b>

The first three Policies were approved by the UCTE Steering Committee in 2005 following a broad and transparent consultation with the stakeholders. Consequently, Policies 4 – 7 were finalized and approved by the UCTE Steering Committee in 2006. With the finalization of the editing of Policy 8 at the end of 2007, UCTE concluded the first release of the full set of the Operation Handbook Policies.

Doing so, UCTE, as the association of TSOs in Continental Europe, reaffirmed its clear commitment to maintain and improve the reliability of the interconnected electric system.



# COMPLIANCE MONITORING AND ENFORCEMENT

The UCTE Compliance Monitoring and Enforcement Process (CMEP) ensures the compliance of all TSOs with the standards defined by the UCTE Operation Handbook (OH). Alongside the Operation Handbook – setting the standards, and the Multilateral Agreement – giving the binding character to the rules, the CMEP is the third basic element of the UCTE Security Package.

It ensures that the TSO community continuously remains credible in its commitment to reliable operation of the interconnected system. The CMEP is the strategic program for the annual compliance monitoring activities of UCTE, implemented to monitor and ensure compliance of the TSOs with the UCTE Operation Handbook. The program is annually developed by the Working Group Compliance Monitoring and Enforcement (WG CME), providing a framework and a workflow for compliance assessment and mitigation of non-compliance for approval by the UCTE Steering Committee. Following the successful trial CMEP in 2006, in 2007 the process became a regular UCTE exercise.

#### **The annual program is developed based on:**

- UCTE Statutes and Terms of Reference of the WG CME
- approved Operation Handbook policies
- history of the compliance monitoring activities and findings
- individual input from the TSOs.

#### **The objective of the compliance monitoring program is to:**

- promote the reliability of the interconnected system through compliance monitoring and enforcement activities
- facilitate the uniformity of the implementation of Operation Handbook standards throughout continental Europe
- increase the credibility of UCTE



## The Monitoring Program in 2007

In 2006 the Compliance Monitoring and Enforcement Process checked the compliance with the OH Policies 1 – 3. Consequently in 2007 WG CME decided to check the TSOs' compliance with the remaining OH Policies 4 – 7 and defined the monitoring methodology.

For these rules active monitoring means that TSOs have been required to report compliance data or results for these rules to WG CME during 2007, even if they have been fully compliant. The Compliance Monitoring Program specified the methodology of monitoring for the selected rules. WG CME, in their role as compliance enforcement authority, implements the program in accordance with principles and processes documented in the Compliance Monitoring Program.

The results of the 2007 compliance monitoring process are presented in the Compliance Oversight Report, published on the UCTE Website.

## Results in 2007

The following is a listing of the results found by WG CME based on the experiences from the 2007 CMEP:

Compliance with OH Policy 4 "Coordinated Operation and Planning" is unsatisfactory, but not endangering the security of the interconnected system

- Compliance with OH Policy 5  
"Emergency Operations" has to be improved
- Compliance with OH Policy 6  
"Communication Infrastructure" is very good
- Compliance with OH Policy 7  
"Data exchanges" is good

Beyond the assessment of compliance, the 2007 CMEP also tested its effectiveness after having introduced changes that resulted from the analysis of the 2006 trial process.

Many different ways of implementation and interpretation of OH standards were found. OH standards written in general manner require detailed explanations. At the same time very long standards, comprising different aspects of the of an issue, cause difficulties in producing comments and in their evaluation by WG CME (TSOs pay attention to different aspects of a standard).

WG CME found that TSOs also apply very different criteria in their self-assessment. Different interpretations of the same situation are frequent, e. g. when a TSO which declared non-compliance is surrounded by TSOs which declared full or sufficient compliance for the same bilateral procedure. However, this issue of different levels of self-criticism can't be solved within the existing assessment approach, because it is inherent to it. It could be solved through the introduction of clear compliance measures in standards/requirements, compliance audits and unified evaluation.

Moreover the analysis found – although the overall workload for the CMEP within the TSOs can be called acceptable – remarkable differences in declared workload between TSOs.

Krakow, 2007

Dear diary,

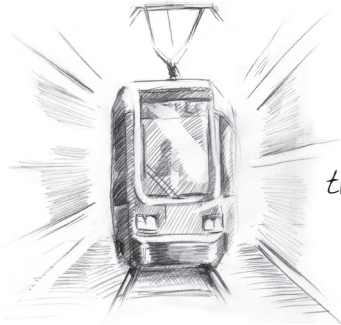
after the hard UCTE working group meeting in Krakow, some participants including me decided to escape the conference hotel and meeting rooms to have a vespertine sightseeing tour before flying to the next meeting the next day. We had little time and a lot to see: the popular Polish tourist attractions Salt Mine Wieliczka and Abbey Tyniec.

It was 5.00 p.m. and the mine was about to close an hour later, so we decided to take a taxi. Doing some detours in the city of Krakow the taxi driver finally realized where we wanted to go and that it was more than tight for a visit in the mine.

In short he had one of his family members on the phone, organizing a private tour for us after closing-time in the mine. Not yet finished, we "took off"

for our ride to the mine. To pass the traffic, the taxi driver left the road and drove on the tramway rails. Clear advantage: no cars Clear disadvantage:

trams! By a hair's breadth we avoided a frontal crash, as the driver went into reverse immediately!



As we still had an open point on our list, the same taxi driver picked us up the next morning at 5.00 a.m. before our flight. He promised it would not be a problem to visit the abbey and still get the plane. We only realized what we had agreed to, when we "took off" again. In order to make everything in time, he speeded like a Formula 1 driver. Passing the traffic was again no deal: we were constantly driving on the wrong side of the roads and highways!

As my hand is still shaking a bit, I just want to add that it was worth it and we made it on time to the next meeting.





# COORDINATED PLANNING

Coordination at international level is part of the basis for security and reliability of the UCTE synchronous area. Coordinated planning activities across country borders help to assure that the grid can also in the future live up to UCTE standards. To that purpose, UCTE has set up the Working Group Coordinated Planning (WG CP), which started its activities at the beginning of the year 2007.

## The general objectives of the WG CP are:

- Build a common vision of UCTE priorities for the development of transmission infrastructures
- Create a framework for encouraging and making easier TSOs' mutual information and collaboration on grid planning issues
- Present a global view of present and future levels of system adequacy including both generation adequacy and transmission adequacy, based on an appropriate methodology.

## Modeling Database

The WG looks into planning principles and processes and makes proposals for improvement for internal and external use. It is also in charge of setting-up, maintaining and updating a common database for medium & long term network studies and to make it available to TSOs.

Thus the WG CP launched in 2007 the first data collection with data from each TSO – with high support of UCTE Secretariat. As result, the first merged model

(Winter Peak Hours 2013) is being finalized to be made available to all UCTE TSOs at the end of March 2008. Three further models are currently being prepared and will be merged in the second quarter of 2008.

## Regional Fora

For encouraging TSOs' mutual information and collaboration on practical grid development issues, the regional level has been found most suitable and efficient. Therefore five regional fora have been set-up:

- **Central-West:**  
BE, NL, LU, FR, DE
- **South-West:**  
FR, ES, PT
- **Central-South:**  
IT, FR, CH, AT, SI, DE
- **Central-East:**  
DE, CZ, SK, AT, PL, HU, SI and
- **South-East:**  
GR, HU, BG, RO, IT, BA, HR, ME, MK, FYROM, RS

The aim of these fora is to create a framework for mutual information exchange about grid development methods, processes and projects. Moreover it provides the environment for launching joint grid studies, which will provide TSOs with a global view of the expected congestion and effects of possible projects – not only in the country/countries directly involved but on the whole interconnected system.

### **System Adequacy and Transmission Adequacy**

Regarding System Adequacy, two reports have been built up: the System Adequacy Retrospect 2006 and the System Adequacy Forecast 2008 – 2020. These reports are available on UCTE website.

Regarding Transmission Adequacy, the WG has worked out the first issue of the UCTE Transmission Development Plan, based on contributions of the Regional Fora presented above. This report

- reminds the main drivers for grid development
- gives an overview of the possible evolution of the UCTE generation-load balance for the next 10 years, highlighting the uncertainty in the location and amount of future generation, and
- presents the expected development of the Extra High Voltage transmission system within UCTE.

Particular focus is put on the development of interconnections, within UCTE as well as between UCTE and neighboring countries. This report was published on the UCTE website in April 2008.

### **Collaboration with external parties**

The WG also contributes to reports at the European scale in cooperation with other TSOs' regional associations and ETSO.

On the one hand, it contributes to reports on system adequacy coordinated by ETSO, as the ETSO System Adequacy Report, Winter Outlook and Winter Retrospect. On the other hand, it contributes to TSOs' associations position papers on planning issues. To that respect, it has been very active – together with other TSOs' associations – in establishing close relations with DG TREN in order to share views on the criteria for defining priority projects at the European scale. This collaboration will go on in the future, resulting in improved Security of Supply, better integration of Renewable Energy Sources and higher fluidity of the Internal Electricity Market.



# COORDINATION SERVICE

Coordination at international level is fundamental for the security and reliability of the UCTE synchronous area. An improved inter-TSO-coordination will result in improved reliability. Thus in 2007 UCTE made an important step towards a system-wide co-ordination, both in operation and planning in order to increase the security and reliability of the system.

In May 2007 the UCTE Steering Committee confirmed the need of a Coordination Service (CS) and mandated the Working Group System Strategy to investigate into the possible technical realization of the appropriate legal framework.

## Context

- today the transmission systems in Europe are operated under completely different conditions compared to their design purposes (decentralized operation with shared responsibility, co-ordination only between neighboring systems);
- system security has to be maintained under market conditions that cause the full utilization of many physical transmission system assets;
- due to the long and difficult permitting procedures for new transmission lines, the development of infrastructure has not been able to keep pace with these changes;
- more frequent large fluctuations in power generation patterns and import export exchanges;
- increase of cross border intra-day implementation;
- increase of volumes and growth of renewables (wind generation)
- high voltage network being operated closer to the limits

## **The Framework of the CS**

The basic assumptions are that the CS is operated and financed by all involved TSOs. The CS implementation will need no changes in national laws. Moreover the CS is a 24 hour-service for TSOs.

In December 2007 a workshop was held on this topic and a consensus was reached on the goals, means and the minimum set of functions of the CS.

For 2008 a common Task Force (comprising experts from WGs System Strategy, Operation and Security and Legal Affairs) aiming at further investigation about the CS will be set-up.

## **Goals of the CS**

In order to improve the system reliability, the CS shall support TSOs in emergency situations, enable to find solutions to the above mentioned situations and increase the global reactivity of TSOs. There is further a need to have a better knowledge and understanding of the operating rules of the other TSOs.

## **Means and Minimum set of functions**

The workshop further achieved a consensus on the means. In order to reach the goals of the CS a week ahead, day head and "real time" vision of a large part of the UCTE system (several TSO areas but not necessary the whole UCTE system) is needed. Data has to be exchanged in standardized formats and data exchange protocols. Already existing regional activities have to be considered, and one TSO can be involved in more than one region. The CS needs to integrate the functions of the UCTE-wide Awareness System.

The CS enables TSOs to perform N-1 security monitoring on a regional basis, trigger an alarm in case of possible congestion, work out solutions and coordinate the restoration process in case of an incident.

Brussels, 2007

Dear diary,

today it snowed in Brussels. What a surprise! It never snows in Brussels. In fact it is logically impossible to snow in Brussels, because it always rains - and if it would not rain, we would not be in Brussels. But today was the exception: it snowed!

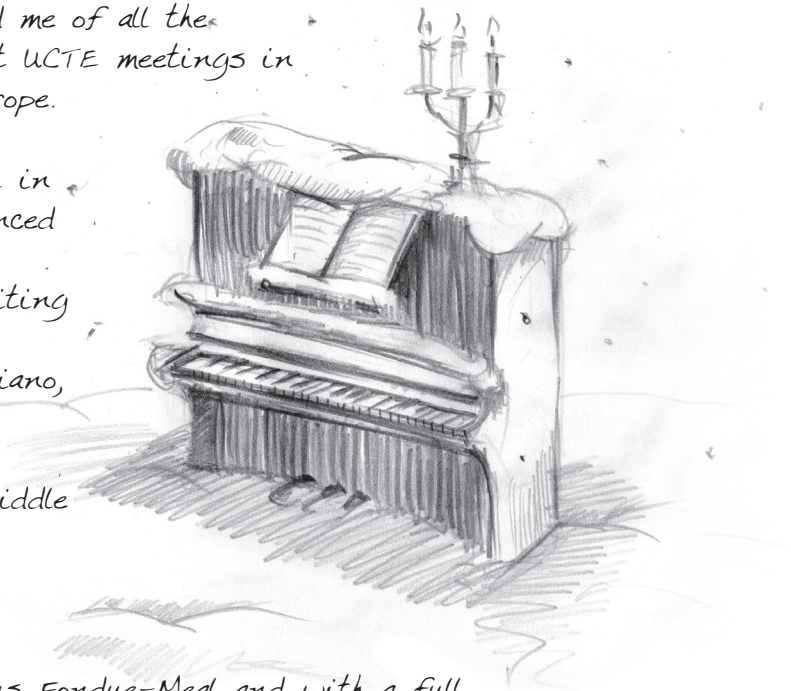
And this snow reminded me of all the stories I experienced at UCTE meetings in winter time all over Europe.

I will never forget the snow storms on the Rigi in Switzerland. We experienced everything which belongs to a real adventure: exciting arrivals and departures and nights around the piano, played by gifted UCTE experts, creating a cosy atmosphere in the middle of the icy weather.

Unforgettable was also the sledding in Davos.

After a more than luscious Fondue-Meal and with a full belly the UCTE working group members took a seat on a sled. Unfortunately for most of the protagonists the slope was really icy. And so one could see as many riders outside as inside the slope and frequently hear French screaming, as one of our colleagues had anticipated her first sled ride to be more relaxed.

It's probably good that it does not snow more often in Brussels ...









# CRISIS MANAGEMENT AT UCTE

Security of operation is one of the major concerns of UCTE and all its member TSOs. It is also regarded a priority topic by the European Commission and by all stakeholders in the community. Thus, besides its numerous measures for the improvement of the security and reliability of the European interconnected grid, in 2007 UCTE put a special focus on the preparation for the case that a major incident within the UCTE synchronous zone would cause a crisis. An active process for definition and implementation of a reliable and professional crisis management was started.

## **Raising awareness for the need of crisis management**

In fall 2007, within the context of the common working group meeting, UCTE Working Group Communication (WG Com) organized an important exercise to raise the awareness of the need for preparation for a crisis situation. Supported by the British company Crisis Solutions Ltd. – specialized in corporate crisis management – the participants gained insight into the basic components, the causes and the consequences of a crisis as well as insight into measures for adequate responses. All participants were exposed to simulated crisis situations and invited to take the necessary measures to solve the situation while preserving the image of the company in the long term.

Based on the increased awareness and a common willingness to contribute to the implementation of a crisis management solution, WG Com launched an initiative, aiming at the constitution of an effective crisis management. Supported by an information platform, effective alert mechanisms as well as solutions for correct and consistent channeling of information to internal and external stakeholders are planned to be implemented.

## **Outlook 2008**

The UCTE Working Group Communication will pursue the process in 2008 in close cooperation with the UCTE Working Group Operations and Security, aiming at the establishment of a process and launching a platform in the second half of 2008.

Imagine Europe  
without UCTE.



UCTE – Reliable: Everyday!





# EUROPEAN WIND INTEGRATION STUDY

To best address the network challenges, European Wind Integration Study (EWIS) aims to bring forward constructive recommendations from quantitative analyses of the technical and economic aspects of the existing network infrastructure, associated operational procedures and potential future transmission developments and investments.

To achieve the successful large-scale development of wind power to meet Europe's ambitions for renewable energy and its secure accommodation in the power system, Europe's transmission networks must transport production from wind generation sites to load centers in an efficient way and help manage wind variability by harnessing diversity and backup supplies.

The European Wind Integration Study (EWIS) builds on earlier work (including statistical work on Europe's wind resources by EWEA) to derive a set of network scenarios from which challenging technical, operational and economic conditions are identified. The study will then identify mitigation options for these issues and determine their relative merits.

Taking a pan-European viewpoint, EWIS not only seeks to accurately and appropriately represent the geographic distribution and statistical aspects of wind and other users, but to ensure that identified measures are consistent with a single-market approach. The study is combining wind generation experience and examining new technology solutions to maximize network capacity and flexibility (forecasting techniques for network loading, and risk assessment facilities).

## Key issues of the study

Many of the challenges that are being addressed by EWIS are already apparent to Transmission System Operators, wind developers and operators and further market participants:

- Speeding up authorization procedures for new connections and reinforcement of the transmission networks to alleviate grid bottlenecks (whether internally or across borders)
- Enhance technical compatibility and complementary between wind turbines and networks to facilitate further wind development, minimize industrial costs and maintain the actual level of security of supply.
- Establish efficient arrangements to make best use of existing network assets while also providing a sound basis for the timely investment in new transfer capacity to accommodate both wind and its required backup.
- Enhance balancing arrangements to ensure real-time delivery of acceptable security, quality of supply and minimization of operational and balancing costs.
- Establish best practice in relation to the operation of systems with large amounts of wind power.

## 2nd phase launched in 2007

Following publication of the EWIS Phase 1 Report in February 2007, a 2nd phase of the study was initiated in June 2007. This phase covers all the European synchronous areas (Ireland, Great Britain, Northern Countries and UCTE including Baltic countries) and looks in detail at scenarios covering the immediate future to 2015. The 28 months project is being undertaken by 15 TSO companies, with the support of the European Commission, and in collaboration with a wide range of stakeholders.



Dear diary,

since I have been a little child, I knew I wanted to be an engineer. Since the first man landed on the moon I knew that engineering was the key to improve the life of man the way to really change something and leave a footprint here on earth. And isn't it amazing what we achieved here in Europe and beyond its borders? More than 500 million people take each and every day their electricity from a common interconnected grid!

But however, today, I had the feeling that what we do and can achieve as engineers is nothing but trivial. Today I felt real change cannot be done by us. Today I saw the fearless attack on the laws of nature. Today I knew, I should have become a lawyer.

It all began very normal. A few TSO and government representatives came together to discuss the impact of wind generation on load flows and congestions. We started with long explanations about operational issues and the flows that were caused by wind, when the magical moment happened. One of the present lawyers asked about possibilities to change the flow pattern. We answered that the current flows are established according to the laws of Ohm and Kirchhoff. The very simple, yet shivering answer of the lawyer into the silence of the meeting room: "Any law can be changed!"

I think in that moment, somewhere in Europe, impressed by the rebellion of man against nature, some electrons really turned around and took another way than decided by the laws of nature.





# DATA IN UCTE

Statistical data on the UCTE interconnected system are the basis for the daily work at UCTE and beyond. Answering the increasing need for these data at internal and external stakeholders, in 2007 UCTE further extended its data gathering activities and started the redaction of a UCTE Data Handbook.

## Data – Basis for the daily business at UCTE

In the UCTE there are today many data gathering activities. Data are collected for numerous tasks and in the frame of the various Working Group activities. Some of those data are for public access and available on the UCTE website and in several publications like the monthly reports or the Statistical Yearbook. Other data are used for the elaboration of internal reports as well as for public reports like the UCTE System Adequacy Retrospect.

The amount of gathered data has increased dramatically over the last years. On the one hand there is an internal need within UCTE to exchange data between the members and on the other hand there are increasing expectations of external stakeholders concerning transparency and access to data about the UCTE interconnected system.

The growing interest is well reflected by the queries to the statistical database on our website and the downloads of statistical publications. Compared to 2006, the traffic increased about 10% on the UCTE web database (on average 3500 clicks/month) and 20% on the statistical publications (on average 9700 clicks/month).

## Preparing the Data Handbook

WG Data started in 2007 the redaction of a UCTE Data Handbook. Goal of the data handbook is to give an overview of all existing data gathering processes. The Data Handbook is structured in six chapters: Introduction and general principles, Statistical Data, System Adequacy Data, System Studies, Operational Data and an extensive appendix.

UCTE WG Data organized an internal workshop in September 2007 in order to inform all members of the other UCTE working groups and to co-ordinate the review process of the future Data Handbook. More than 25 experts in planning, statistics and operations from UCTE TSOs are working in six drafting teams to develop the handbook in shortest time.

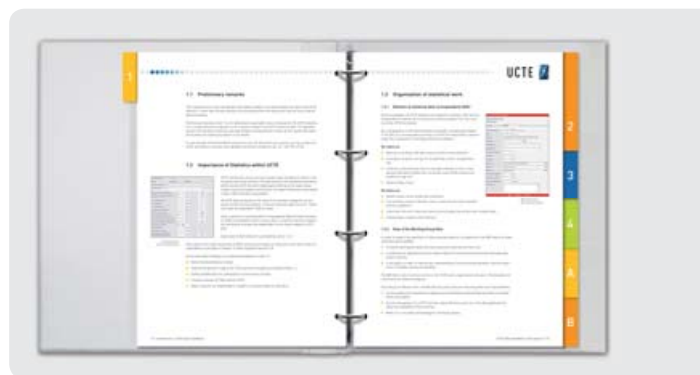
The UCTE Data Handbook shall be ready mid of 2008. It will be the reference document for all data gathering activities in the UCTE especially for the several experts delivering the data for the own country. It will also give a detailed overview of the existing reports and publications, the publication schedules and the UCTE databases.





## Enhancing the cooperation at our borders

WG Data has started bilateral contacts with the three companies in the Maghreb countries that are interconnected with UCTE (Morocco, Algeria, Tunisia). All UCTE data management processes, tools and statistical products were presented. The three North-African TSOs expressed high interest in sending data to UCTE to be present in their statistics as "countries in the synchronous area" as it is the case today for the Western part of Ukraine. First tests for exchange of statistical data are planned for 2008.



# PROJECTS

## UCTE-IPS/UPS Feasibility Study

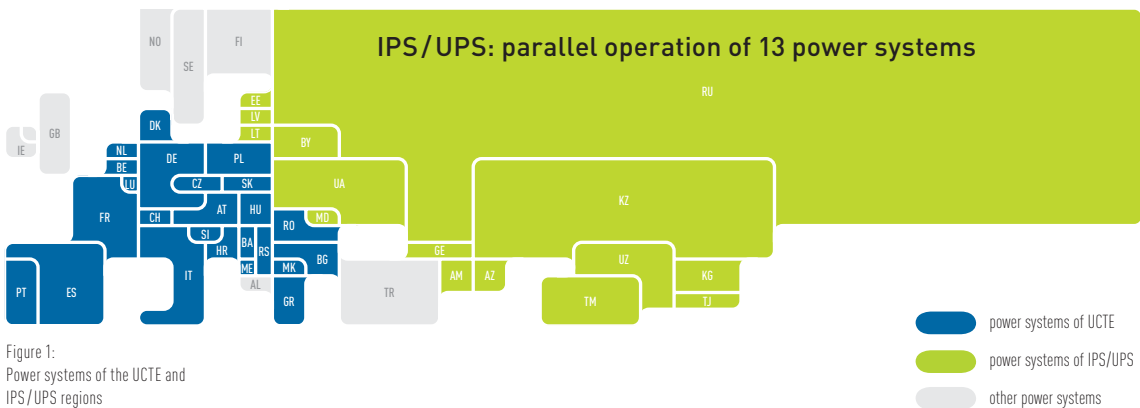
The UCTE-IPS/UPS Feasibility Study started in April 2005. During the last 3 years experts investigated a possible synchronous coupling between IPS/UPS and UCTE. As a part of the EU-Russia Energy Dialogue the project is of significant importance for the further progress on electricity issues. The European Commission, whose policy is to promote the creation of an open electricity market in Europe, also shows a great interest in the results of the study. The work of the UCTE consortium is co-financed by the Trans European Network (DG-TREN) program of the European Commission. Figure 1 gives an overview about the area under investigation.

Presently there is no existing electricity system in the world spanning more than ten time zones with different load characteristics and various generation structures and which would also serve more than 700 million between Europe and Asia.

The challenge is jointly met by experts from UCTE and IPS/UPS. Five working groups deal with studies dedicated to Steady State Analysis, System Dynamics, Power System Control, Network Operation/Organization and Legal Aspects. Covering all technical, operational and legal aspects related to an East-West synchronous coupling, the feasibility study is designed to answer three major questions.

- Is a synchronous coupling of IPS/UPS and UCTE possible?
- What measures have to be taken in both systems?
- What are the associated costs?

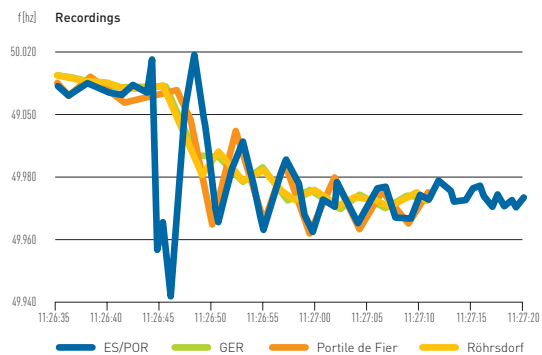
	UCTE	IPS/UPS
Inst. Capacity/(GW)	631	337
Consumption/(GW)	2530	1285
Consumers/(Mio)	450	280



## Analyses of the dynamic behavior are key issue

The analyses of the dynamic behavior of the possibly coupled systems have been identified as the key issue for assessing the mere technical feasibility. In this respect, experts spent the utmost effort to set-up dynamic models for the areas under investigation. IPS/UPS experts set-up a dynamic model based on the information provided by the individual TSOs. The model of the UCTE area, which already existed and was successfully used before in several system studies, was updated to reflect the planned network for the study's time horizon 2008. The models were validated by comparison of simulations of real incidents with the respective measurements gained by the Wide Area Measurement Systems (WAMS). This system has been in operation in UCTE for several years and gives valuable insight in the system's dynamic performance. Figure 2 shows an example of the validation of the UCTE dynamic simulation model.

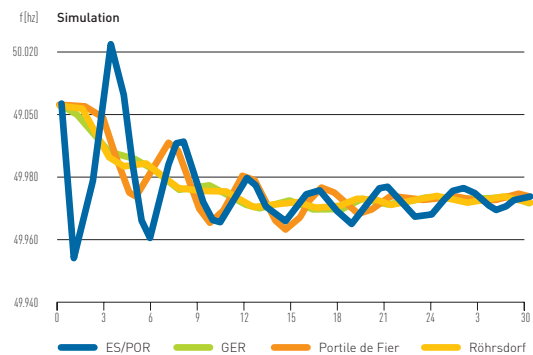
Figure 2: Verification of UCTE dynamic study model: Outage of 1200 MW generation capacity in Spain



## Results of 2007

The results gained in 2007 show that the available transfer capacity across the UCTE-IPS/UPS interface is rather limited. In case of generation outages a sufficient reliability margin across the interface and between the transmission systems concerned has to be kept what would require additional network reinforcements in both synchronous areas compared to today's situation.

The preliminary findings show that even if a synchronous operation of IPS/UPS and UCTE may appear feasible under implementation of several technical, operational and legal pre-conditions it can only be considered as a long term perspective for system coupling. As support to the creation of a joint electricity market platform between UCTE and IPS/UPS countries e.g. the construction of HVDC back-to-back links between the interface countries may be considered as an advantageous alternative solution. Additionally, back-to-back links may result beside their technical, economic and environmental advantages in a more cost-effective and thus "easier to realize perspective".



Somewhere near

Italy, 2007

Dear diary,

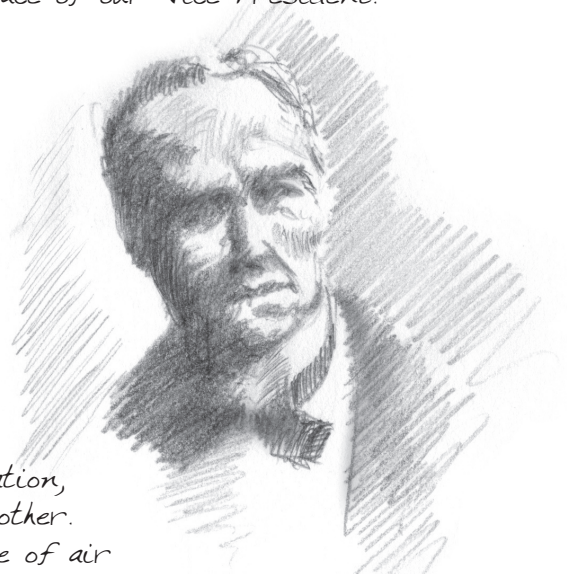
I just returned from the movie night at a friends house. We watched the Godfather Trilogy. I am a bit tired, but I was reminded of a story that happened a few years ago at UCTE. So I have to write it down.

I had always thought that Marlon Brandon was the absolute reincarnation of an Italian Mafia boss. Whenever I pictured the stereotype of a godfather, I had his face before my eyes. But not anymore. From that day on it was the face of our Vice President.

The meeting started as always. It was actually one of the first meetings of our newly elected (Italian) Vice President. Full of motivation and enthusiasm he obviously intended to actively participate in the pre-selection process of the new chairpersons. However the (German) President was convinced that he had a previous mandate to do this alone ...

Spite of decades of friendly cooperation, both UCTE leaders faced up to each other.

The room became quite. A cold breeze of air could be felt on the skin.



With the pose and expression of a Don Vito Corleone, the Vice President raised his voice: "If you intend now to use mafia methods on me, be reminded that it was us Italians who invented them! Therefore, if you want to play games, be sure you'll lose them!" He turned around and left the room. Silence. The surprised and stunned President was at first lost for words but then broke the silence: "I didn't know that he was so emotional."

I think since then I have never seen a more Oscar-worthy moment at UCTE.





## Feasibility Study of the Interconnection of the Turkish Power System to the UCTE Network – Progress and Further Steps

The preparatory process for the Turkish Power System interconnection to the UCTE network is progressing under the coordination of the UCTE Project Group. The activities are scheduled in three phases:

1. The Preparatory Phase starts with studies and investigations on the Turkish Power System in accordance with the standards defined by the UCTE Operation Handbook. Requirements to the Turkish Power System, which should be implemented by the Turkish system operator TEIAS for meeting the UCTE rules and requirements, will be determined.
2. During the Implementation Phase all the UCTE requirements have to be implemented in the Turkish Power System.
3. Before its synchronous interconnection, the readiness of the Turkish Power System will be evaluated in a one-year test and trial phase with parallel operation under real operating conditions.

### Technical Complementary Study

In 2007 a number of reports on the Turkish Power System were prepared by TEIAS and approved by the Project Group: in April the Technical Complementary Study was successfully finished. It ascertained a risk of undamped low frequency oscillations and the following main conclusions were made:


- The interconnection of the Turkish Power System to UCTE will be possible if the frequency control problems are solved.
- An emergency control system has to be installed on the interface between the Turkish Power System and the UCTE Network in order to prevent any serious disturbances spreading.
- The Study was performed by an Association of the UCTE members RWE TSO (Germany), HTSO/DESMIE (Greece) as leaders and supported by E.ON Netz (Germany), HEP-OPS (Croatia), ESO-EAD (Bulgaria), RTE (France) and EKC. The Turkish TSO TEIAS played an active role in the study by providing all necessary data and information about the Turkish Power System.

## **TEIAS will launch Frequency Control Performance Project in beginning of 2008**

Following the Technical Complementary Study, TEIAS decided to launch a project named "Rehabilitation of the Frequency Control Performance of the Turkish Power System for Synchronous Operation with UCTE". The project is expected to start at the beginning of 2008 and to be completed in 14 months. Its main goals include:

- a survey of power plants in the Turkish grid
- an investigation and elaboration of recommendations for the generating units' control systems improvement: settings and structure optimization of turbine governors, voltage regulators and PSS
- Secondary Control System improvement
- field tests
- an emergency control system on the interface with UCTE and a restoration plan of the Turkish power system
- staff training

The project will be financed by the EC Central Finance and Contract Unit (CFCU) for Turkey and will be carried out by the Consortium of the following TSO members of UCTE: RWE TSO (Germany) as leader as well as JP EMS (Serbia), ESO-EAD (Bulgaria), HTSO/DESMIE (Greece), TERN S.p.A. (Italy), and TEIAS (Turkey). Technical Universities and manufacturers will also participate in the Project as subcontractors.



## Request of Ukraine and Moldova for interconnection to UCTE network

From early 2003 on, Ukrainian authorities unambiguously informed UCTE that the main interest of Ukraine was to apply for an interconnection with UCTE according to UCTE standards and conditions. However, Ukraine would continue to support the UCTE-IPS/UPS study that was prepared at that time. In March 2006 the official request for interconnection with the UCTE grid was commonly submitted by Ukrenergo/UA and Moldelectrica/MD (as "Requesting Parties") via Transelectrica (Bulgaria) (as "Supporting Party").

The UA/MD request for integration in UCTE was officially backed by both the Ukrainian and Moldovan governments.

### The Project Group was set up

Following the decision of the Steering Committee, in November 2006 a project group was created with the tasks to work out the Terms of Reference for an investigation project to assess all the technical, regulatory and operational requirements for an interconnection of the Ukrainian and Moldavian electrical systems to the UCTE electrical system. The Terms of Reference comprise the following 4 main chapters:

1. Technical requirements and Operational Aspects
2. System delimitation clause
3. Congestion Management
4. Legal/Regulatory Conditions

The project manager started preparation and undertook steps necessary for organizing the financing scheme for the project.



## Project Group Albania

The UCTE Project Group Albania (PG Albania) continued its investigation process regarding the status of the Albanian Electrical System in 2007. Improvements and upgrade projects were documented in the updated Albanian System Status Report, which is expected to become the reference for the evaluation and the compliance analysis of the Albanian system.

During 2007 the Albanian system faced big difficulties due to a high energy deficit, forcing the Albanian Transmission System Operator (ATSO) to apply extensive load shedding on a cycling basis to keep the system live. The main reasons were on one hand the limited internal production, which is based on hydro, and on the other hand the limited energy imports due to physical limitations of the interconnections to the UCTE grid. The coincidence of a dry year, low inflows and a high demand during summer period resulted in an operation at the system's limit. These problems, operational conditions and the incidents of this period were considered by PG as cases to evaluate weaknesses in infrastructure, organization and procedures.

Alongside the PG Albania applied the Compliance Monitor and Enforcement Process (CMEP) to identify and confirm all points that need extension or improvement. Main problems identified and confirmed by the CMEP up to now are as described in the following.

1. As mentioned before, the energy balance is one of the most crucial issues. The supply heavily depends upon the inflows into hydro reservoirs the amount of imports, which by its volatility sometimes endanger the system stability. The energy deficit is managed by strong curtailment of the demand on a cyclic basis.
2. The closing of the Load Frequency Control (LFC) loop is critical. The system balance in real time is performed manually by dispatch orders over telephone to hydro stations.
3. The N-1 criterion is not always met.
4. Bilateral agreements with neighboring TSOs and internal entities need to be reconsidered within the new environment.

### Outlook

The non-compliance points will be processed and included in the catalogue of measures. It can be expected that these issues improve within next three years, when appropriate projects are expected to finish. There are a lot of projects in progress and more in the initial phase that are expected to improve the Security of System Operation and Demand Supply and to gradually move Albanian System closer to the full compliance to the UCTE Operating Handbook. Operational and planning procedures, although close to existing UCTE procedures, are gradually converging to UCTE ones.

In the mean time ATSO bears the responsibility not to export its own problems to neighboring TSOs and not to endanger the security of operation in the area by taking all appropriate measures and limitations internally. Potential stability risks due to loss of generation or interconnection will be faced with Special Protection Schemes (SPS), high imports will be reconsidered in relation to the SPSs.

Skopje, 2007

Dear diary,

on the occasion of the last steering Committee meeting, I was staying in Skopje, the capital of Macedonia. I arrived in time at the hotel and prepared the meeting, which began half an hour later.

Suddenly my mobile phone was ringing. A German representative of the UCTE was on the phone; obviously he was still at the airport. He was very excited: "I forgot my passport at home and now the customs officer told me, that I can't enter in Macedonia without my passport. Can you please help me?"

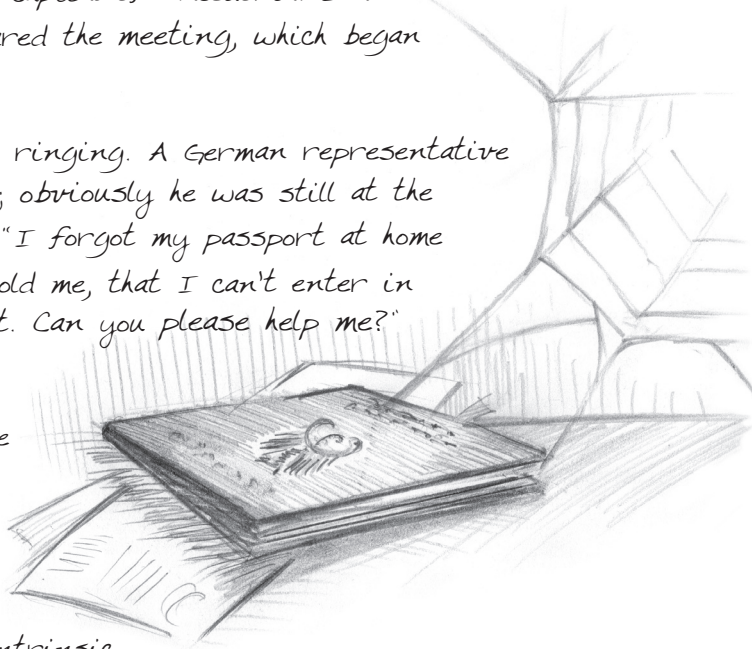
I calmed him down and called the German embassy in Skopje right away. I explained

the officer that their compatriot was placed in a very awkward position at the airport and that it was intrinsic

to have him at the steering Committee meeting. Very fortunately the German embassy could convince the Macedonian authorities that a UCTE meeting is of such exceptional importance that they have to let in the German representative with a special permit.

My colleague told me afterwards that he actually never had a passport. For him the union of countries within UCTE was so natural that he simply forgot he would need one to enter.

But remembering that many members of UCTE were joining the EU about ten years after they joined UCTE, he probably was not wrong not to bring a passport - just too early!







## Tunisia – Libya Interconnection

The Tunisia – Libya interconnection constitutes the last link to make a real synchronous union between the UCTE and nearly all countries of the southern and eastern Mediterranean basin – with Morocco, Algeria and Tunisia (TAM) being already synchronously interconnected to UCTE (but not members) via two 400 kV AC submarine cables to Spain, and the Libyan, Egyptian, Jordanian and Syrian networks being already interconnected among each other (LEJS system).

At the request of Tunisia and Libya, the UCTE established a process for the closure of the Tunisia – Libya interconnection, which had its genesis of the previous studies carried out for both REE and HQI concerning this interconnection. The expansion request involves the closure of two existing 225 kV lines, between Tunisia and Libya which, if successful, would extend the UCTE synchronous zone from Spain to Syria involving in addition Libya, Egypt, Jordan and Lebanon.

The Tunisia – Libya interconnection, today out of service, is formed by two AC 220 kV overhead lines: a double circuit OHL between Medenine (Tunisia) and Abou Kamash (Libya), and a single circuit OHL between Tataouine (Tunisia) and Rowies (Libya). The total thermal transmission capacity (TTC) is 270 x 3 MVA.

On November 21st 2005, at 12:00 (CET) the process of synchronization of the UCTE+TAM and LEJS power systems was initiated, according to the procedure agreed and closely followed by UCTE. A synchronization trial was therefore defined between the Maghreb and Mashrek, planned to last three days following the closure of the Libya and Tunisia interconnection. After 7 minutes, the defense plan opened up the lines between Libya and Tunisia, but lines were also triggered between Morocco and Algeria. Following consultations with the various utility companies, the test was interrupted.

The main conclusions of after-event analyses can be summarized as follows: being connected to a big system with a very large inertia as the UCTE is, any power deviation or load-generation unbalance are compensated by the bigger system, so normal daily load deviations can often activate the defense plans at international tie lines.

In addition to this, the networks in North Africa and Near East were linked as a chain, not as a "spider-net" like the UCTE ones, so these power deviations at international tie lines increase the Transmission Reliability Margin (TRM) consuming an important part of the Total Transmission Capacity (TTC) at the international interconnections.

To prevent these problems and in order to take advantage of the exchange capacities among countries, it was agreed that the necessary actions to implement were in two main directions:

- Reduction of the power flow deviations.
- Increasing the settings of the defense plans/network developments.

At the end of 2007, a new test protocol version was launched. The current status of preconditions of the 2nd test was analyzed and finally a date for this second attempt was proposed.

The 2nd test will be performed on May 22nd (Thursday) 2008, although previously all preconditions must be verified and all requirements have to be fulfilled before initiating the interconnection.



# NEW UCTE CORPORATE DESIGN

Stringent brand communication is essential for the successful operation of each corporation or association. Only a consistent appearance guarantees unconditional brand recognition, creates trust in the global potential of the organisation to external stakeholders and simultaneously provides for identification and integration inside the organisation. Likewise the build-up of brand publicity is exclusively possible by a consistent appearance throughout all sorts of media.

All that is true for brands in general, is particularly true for the UCTE. Where else are the values "Continuity", "Security" and "Reliability" such an elementary part of the brand as here? The fulfilment of these commitments must be communicated consequently and must be made visible, in order to strengthen and extend the trust in the institution UCTE and in its member TSOs. They are the guarantee for a reliable and sustainable future. This is to be supported by the new corporate design of UCTE.

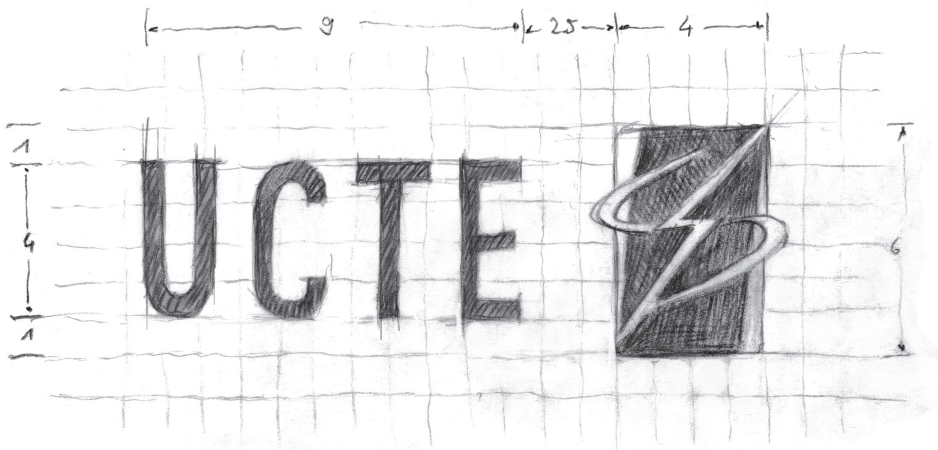
It took less than 6 months from the kick-off to the final presentation of the new design and layout. Under the leadership of Working Group Communication all communication means were adapted to the new layout and design. A special focus was put on the website. Besides the new layout, the content was restructured under the consideration of the needs of UCTE's stakeholders. The new website went online and the new UCTE logo was revealed and presented to the public at the occasion of the Common Working Group Seminar at midnight on 6 September 2007.

## The Logo

Logo and brand name are the most significant recognition features of UCTE. Both have to be handled consistently and stringently following the guidelines for the design and layout to create a uniform brand perception. The new logo illustrates best the major aim of the UCTE re-design: It respects the past, but is at the same time a significant step towards modernity and change. The shape is softer and more dynamic and the colours fit best to the core values of UCTE reliability and security.

The UCTE logo consists of a text and image part, building together one entity. The elements of the logo must not be separated or changed. The correct colour reproduction are assured unconditionally.

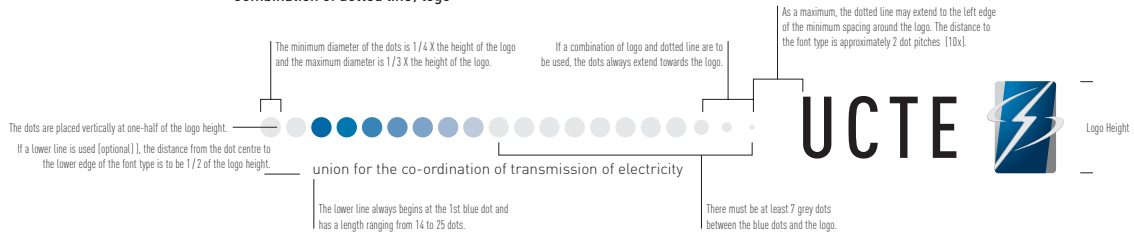








### Combination of dotted line / logo



## The Dot-Line

The Dot-Line as corner element of the new design symbolizes the transport of energy and is being utilized as layout object in all UCTE publications. On the cover and back side of brochures and flyers, in official publications, the website and presentation slides the UCTE logo is always displayed in combination with the Dot-Line.

## The Corporate Colours

Corporate colours fulfil an important role in the design of UCTE. They present both the technical and the rational aspect of our work.

The primary colours blue and yellow built the core of the colour system. Some further complementary colours have been identified for graphics or the labelling of chapters in multi-page publications.

Blue stands for electricity and technology. Yellow stands for energy and activity.

## UCTE Manual

The fundamentals of the new corporate design are summarised in the UCTE Manual. This manual describes all of the key design details on how to use the UCTE brand, both inside and outside of UCTE. It establishes the visual framework for corporate communications and explains the proper procedure for handling the characteristic corporate design elements. It also points out some of the potential pitfalls and how to avoid them. With its detailed design information, the UCTE Manual is an effective instrument that establishes binding rules on how to use the UCTE brand for communications in various media.

# UCTE Brand Manual

Version: 12 November 2007



UCTE Manual: Sample pages

## Visual Identity

### Corporate Colours

2.3

The corporate colours play a critical role in the UCTE design. These represent both the technical and national aspects of our activities.

**The corporate colours must be used at 100% opacity (no altering).** The only exceptions to this are the blue dots on the dotted line (see section 2.2 - Dotted line).

#### Primary Colours

The primary colours form the basis of the colour system. All of the other design colours must only be used in graphics and/or to designate chapters in multiple page documents.

- Blue symbolises electricity and technology
- Yellow symbolises energy and activity

#### Secondary Colours

Though the use of secondary colours, the overall colour impression is friendly and harmonious. However, these colours are only to give a functional use. Therefore, they may only be used for graphics and chapter markings in multiple page documents.

#### Colour Effect

The design system of UCTE utilises much white space together with a few well-placed colour accents. White is thus an integral component of our colour system.

Text may only be printed in 100% black or 100% white (black for graphics, image captions or text on coloured paper). The only permission regarding the use of the additional colour is medium grey. This colour may be used for low-contrast information in graphics and diagrams (see section 2.4 - Graphics and Diagrams).

UCTE Colour	CMYK	RGB	HEX	Comments
<b>Primary colours</b>				
Blue	100/40/0/20	0/51/164	#0066A4	
Yellow	0/20/100/0	252/184/20	#FFC000	
Black	0/0/0/100	0/0/0	#000000	text and lines
Grey	0/0/0/70	230/230/230	#5A5A5A	dot colour and text boxes
<b>Secondary colour</b>				
Green	25/0/100/0	181/205/0	#B2CC00	
Orange	0/50/100/0	242/168/0	#F79600	
<b>Additional colour</b> (only for graphics and diagrams)				
Violet	30/100/0/0			Only when a 5th colour is absolutely necessary!
Medium grey	0/0/0/20			Only when a 2nd grey shade is required!
Red	0/100/100/0	234/0/24	#E00000	Only for markings (e.g. arrows) in graphics
<b>Colour effect</b>				

UCTE Brand Manual | Version: 12 November 2007

10

Corporate Colours

## Visual Identity

### Dotted Line

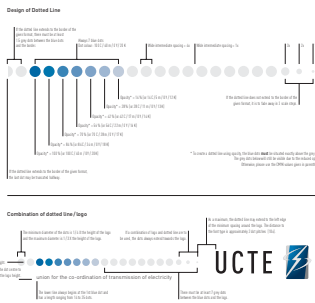
2.2

The dotted lines symbolise the transmission of electricity and are used as a design element in all UCTE publications.

The UCTE logo is always to appear together with the dotted line on the title and page ranges of brochures and flyers, all corporate printed matter, web pages and presentation slides.

The title pages for brochures and publications also contain the complete corporate name of UCTE, as a sign for the coordination of transmission of electricity between the dotted line.

**For more information on use of the dotted line as a design element in brochures and publications, see section 4 - Documents and Publications.**



UCTE Brand Manual | Version: 12 November 2007

9

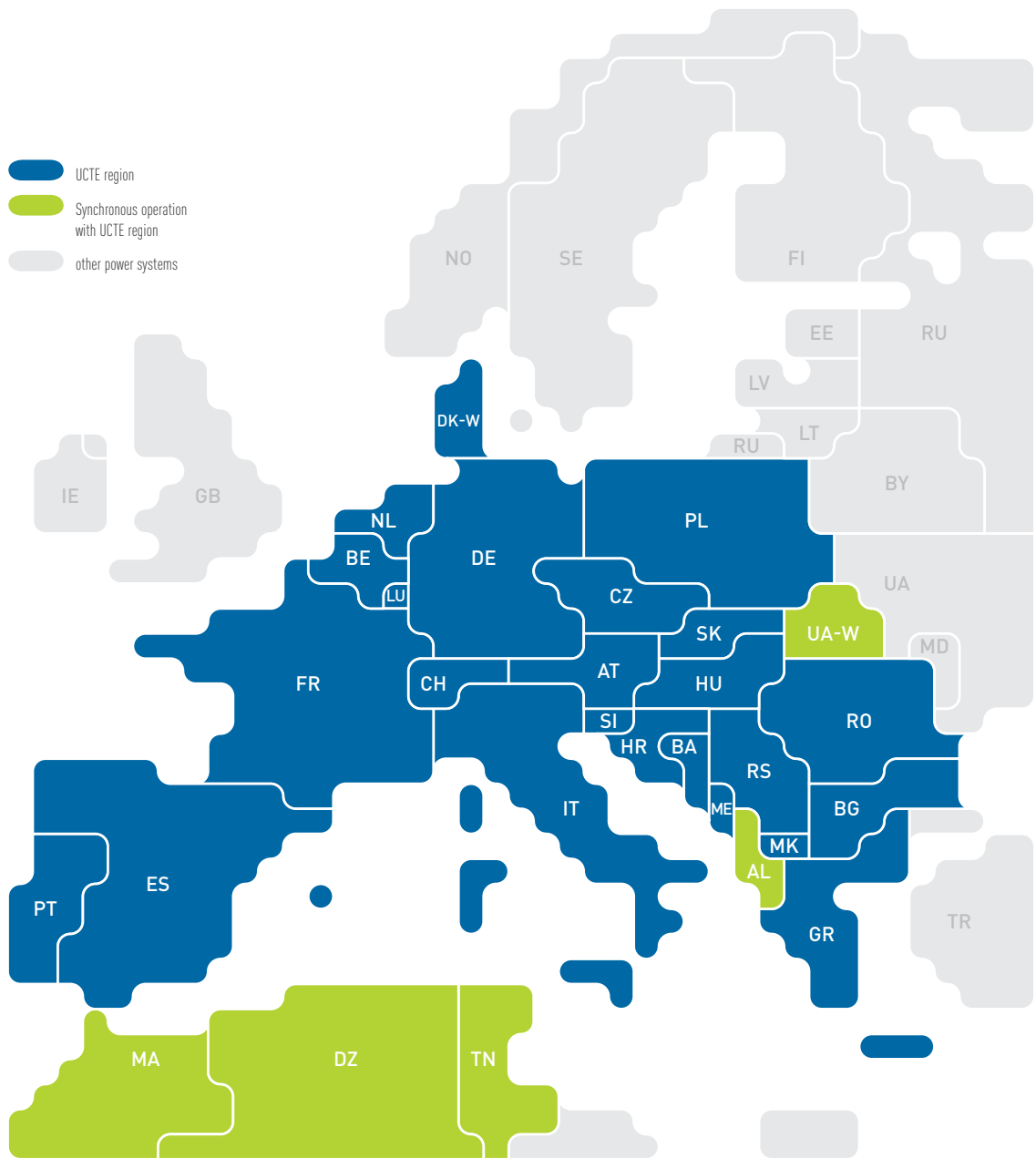
The Dot-Line

# INSIDE UCTE

All member countries are represented in the Steering Committee, which is the executive body of the association.

## Member companies in UCTE

Austria	TIWAG-Netz	<b>TIWAG-Netz AG</b>
	VERBUND APG	<b>Verbund – Austrian Power Grid AG</b>
	VKW-Netz AG	<b>VKW-Netz AG</b>
Belgium	Elia	<b>Elia System Operator SA/NV</b>
Bosnia-Herzegovina	ISO BiH	<b>Nezavisni operator sustava u Bosni i Hercegovini</b>
Bulgaria	ESO-EAD	<b>Electroenergien Sistemen Operator EAD</b>
Croatia	HEP-OPS	<b>HEP-Operator prijenosnog sustava d. o. o.</b>
Czech Republic	CEPS	<b>CEPS, a. s</b>
Denmark West	Energinet.dk	<b>Energinet.dk</b>
France	RTE	<b>RTE EDF Transport S. A.</b>
FYROM	MEPSO	<b>Elektrostopastvo na Makedonija</b>
Germany	EnBW TNG	<b>EnBW Transportnetz AG</b>
	E.ON Netz	<b>E.ON Netz GmbH</b>
	RWE TSO	<b>RWE Transportnetz Strom GmbH</b>
	VE Transmission	<b>Vattenfall Europe Transmission GmbH</b>
Greece	HTSO/DESMIE	<b>Hellenic Transmission System Operator / Diachristis Elinikou Sistimatos Metaforas Ilectrikis Energias</b>
Hungary	MAVIR ZRt.	<b>MAVIR Magyar Villamosenergia-ipari Rendszerirányító Zártkörűen Működő Részvénytársaság.</b>
Italy	Terna S.p.A	<b>Terna – Rete Elettrica Nazionale SpA</b>
Luxembourg	CEGEDEL Net S. A.	<b>Compagnie Grand Ducale d' Electricité du Luxembourg</b>
The Netherlands	TenneT	<b>TenneT TSO B. V.</b>
Poland	PSE – Operator	<b>PSE - Operator S. A.</b>
Portugal	REN	<b>Rede Eléctrica Nacional, S. A.</b>
Romania	Transelectrica	<b>C.N. Transelectrica S. A.</b>
Serbia	JP EMS	<b>JP Elektromreža Srbije</b>
Montenegro	EPCG	<b>Elektroprivreda Crne Gore</b>
Slovak Republic	SEPS	<b>Slovenská elektrizacná prenosová sústava, a. s.</b>
Slovenia	ELES	<b>Elektro Slovenija</b>
Spain	REE	<b>Red Eléctrica de España S. A.</b>
Switzerland	swissgrid	<b>swissgrid ag</b>

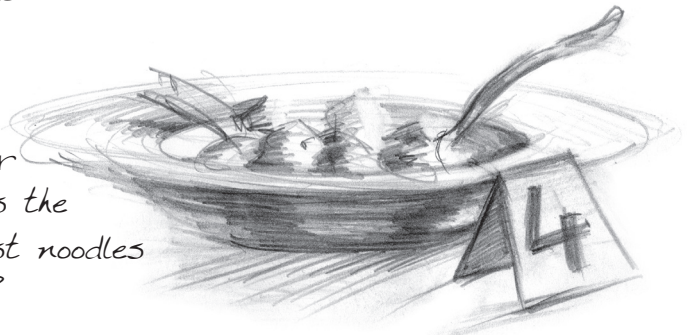


Brussels, 2007

Dear diary,

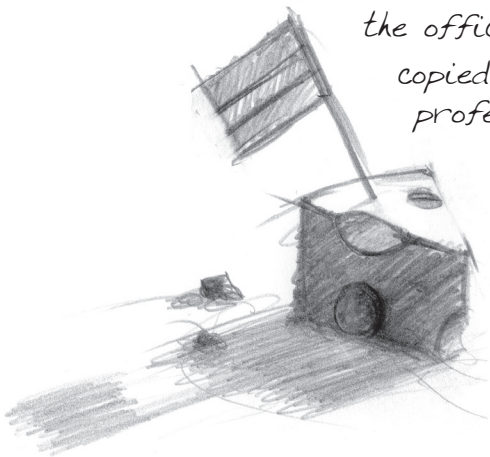
today we launched the first unofficial UCTE Research initiative in the office, covering food of special significance for the life of an average UCTE Member.

Who has the best pickles? The Polish, the Czech or the Germans - which are the crispest, which have the best price/performance ratio? And where does the best beer come from, who produces the best chocolate or the best noodles from all around Europe?



The well known engineering potential of the office staff could be successfully copied and applied in a highly professional way to the nutrition sector. The little research

team used it's full culinary and statistical experience when blind-testing the subjects and recording the results based on statistical analysis far into the night.



The results - due to their explosiveness - have to be kept confidential and thus can only be learnt directly from a member of the research team on a bilateral basis.





## Bodies

The decision-making bodies of UCTE are the **Assembly** consisting of all 29 member companies of UCTE and the **Steering Committee** with one representative from each of the 24 member countries represented in UCTE.

The **Bureau** that represents the Association externally, comprises the President José Penedos Protugal, Vice-President Malgorzata Klawe (Poland), the Chairman of the Steering Committee, Gerard Maas (The Netherlands), and the Secretary General, Marcel Bial.

## Working Groups

In 2007 UCTE started working in its new structure to better meet the requirements and expectations from its members and external stakeholders. The Working Groups (4 Competence Center Working Groups and 3 Service Center Working Groups) are composed of experts from the member companies. They focus their activities on operations and security, system strategy, co-ordinated planning, compliance monitoring and enforcement, communication, data management and legal affairs. They are installed and entrusted with specific missions by the Steering Committee to which they report according to the Articles of Association and Internal Regulations.

## Member companies in UCTE in the World Wide Web

TIWAG-Net	<a href="http://www.apg.at">www.apg.at</a>
VERBUND APG	<a href="http://www.tiwag-netz.at">www.tiwag-netz.at</a>
VKW-Netz AG	<a href="http://www.vkw-netz.at">www.vkw-netz.at</a>
Elia	<a href="http://www.elia.be">www.elia.be</a>
ISO BiH	<a href="http://www.nosbih.ba">www.nosbih.ba</a>
ESO-EAD	<a href="http://www.tso.bg">www.tso.bg</a>
HEP-OPS	<a href="http://www.hep.hr/ops">www.hep.hr/ops</a>
CEPS	<a href="http://www.ceps.cz">www.ceps.cz</a>
Energinet.dk	<a href="http://www.energinet.dk">www.energinet.dk</a>
RTE	<a href="http://www.rte-france.com">www.rte-france.com</a>
MEPSO	<a href="http://www.mepso.com.mk">www.mepso.com.mk</a>
EnBW TNG	<a href="http://www.enbw.com">www.enbw.com</a>
E.ON Netz	<a href="http://www.eon-netz.com">www.eon-netz.com</a>
RWE TSO	<a href="http://www.rwetransportnetzstrom.com">www.rwetransportnetzstrom.com</a>
VE Transmission	<a href="http://www.vattenfall.de/transmission">www.vattenfall.de/transmission</a>
HTSO/DESMIE	<a href="http://www.desmie.gr/home">www.desmie.gr/home</a>
MAVIR ZRt.	<a href="http://www.mavir.hu">www.mavir.hu</a>
Terna S.p.A.	<a href="http://www.terna.it">www.terna.it</a>
CEGEDEL Net S.A.	<a href="http://www.cegedel.lu">www.cegedel.lu</a>
EPCG	<a href="http://www.epcg.cg.yu">www.epcg.cg.yu</a>
TenneT	<a href="http://www.tennet.org">www.tennet.org</a>
PSE – Operator S.A.	<a href="http://www.pse-operator.pl">www.pse-operator.pl</a>
REN	<a href="http://www.ren.pt">www.ren.pt</a>
Transelectrica	<a href="http://www.transelectrica.ro">www.transelectrica.ro</a>
JP EMS	<a href="http://www.ems.co.yu">www.ems.co.yu</a>
SEPS	<a href="http://www.sepsas.sk/seps">www.sepsas.sk/seps</a>
ELES	<a href="http://www.tso.eles.si">www.tso.eles.si</a>
REE	<a href="http://www.ree.es">www.ree.es</a>
swissgrid	<a href="http://www.swissgrid.ch">www.swissgrid.ch</a>



## Secretariat

The Secretariat is led by Marcel Bial. The premises of the Secretariat are located in Brussels,

Boulevard Saint-Michel 15, B-1040 Brussels  
Tel. +32 2 741 69 40, Fax: +32 2 741 69 49  
<http://www.ucte.org>  
E-Mail: [info@ucte.org](mailto:info@ucte.org); [media@ucte.org](mailto:media@ucte.org)

The Secretariat is responsible for the assistance and the support to the bodies of the association. Furthermore, it provides support with data management expertise and is responsible for the UCTE web site, the information system, all kinds of publication and the implementation of all the statistical and communication measures decided by the Steering Committee.

## National representatives in the Steering Committee

Austria	Heinz Kaupa
Belgium	Hubert Lemmens
Bosnia – Herzegovina	Omer Hadzic
Bulgaria	Bozhidar Pavlov
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Czech Republic	Petr Zeman
Denmark West	Per Sørensen
France	Jean-Pierre Desbrosses
FYROM	Blagojce Trpovski
Germany	Rainer Joswig
Greece	Ioannis Theodorakopoulos
Hungary	Lajos Oroszki
Italy	Carlo Sabelli
Luxembourg	Carlo Bartocci
Montenegro	Branko Stojkovic
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Poland	Jerzy Dudzik
Portugal	Jorge Liça
Romania	Octavian Lohan
Serbia	Dusko Tubic
Slovak Republic	Vladimir Jendryscik
Slovenia	Pavel Omahen
Spain	Luis Imaz Monforte
Switzerland	Hans Peter Aebi

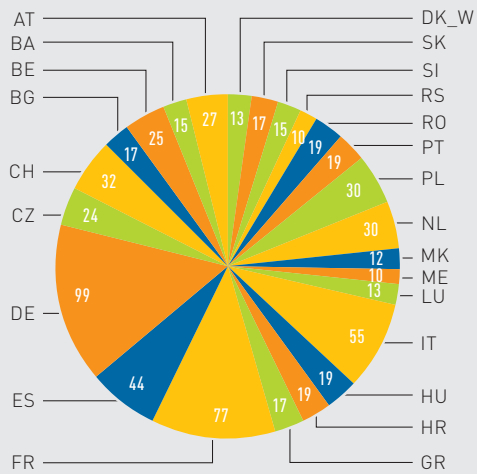
## Organizational chart

### Assembly

29 TSOs from 24 countries

● Chairman: José Penedos (PT)

Voting rights as of May 2007:



### Steering Committee

1 representative per country

● Chairman: Gerard Maas (NL)

## Secretariat

- Secretary General: Marcel Bial

## Bureau

- President: José Penedos (PT)
- Vice-President: Malgorzata Klawe (PL)
- Chairman SC: Gerard Maas (NL)
- Secretary General: Marcel Bial

## Working Groups

- Operations and Security, Convenor: Klaus Kleinekorte (DE)
- System Strategy, Convenor: Georges de Montravel (FR)
- Compliance Monitoring and Enforcement  
Convenor: Jacek Ratz (PL)
- Co-ordinated Planning, Convenor: Jean Verseille (FR)
- Data, Convenor: Philippe Huber (CH)
- Communication, Convenor: Monika Walser (CH)
- Legal Affairs, Convenor: Itala di Cioccio (IT)

## Project Groups

- UCTE-IPS/UPS Study, Project Manager:  
Matthias Luther (DE)
- European Wind Integration Study (EWIS)\*  
Project Manager: Wilhelm Winter (DE)
- PG Albania, Project Manager: Ioannis Blanas (GR)
- PG Turkey, Project Manager: Bozhidar Pavlov (BG)
- PG Ukraine-Moldova, Project Manager: Marian Cernat (RO)
- SYSTINT\*\*, Convenor: Georges de Montravel (FR)

\* together with ETSO, NORDEL, UKTSOA, ATSOI

\*\* joint Task Force UCTE/EURELECTRIC



# ABBREVIATIONS

<b>ATSO</b>	Albanian TSO	<b>IEM</b>	Internal Electricity Market
<b>ATSOI</b>	Association of the TSOs in Ireland and Northern Ireland	<b>KOTK</b>	Commission on Operational and Technological Coordination for the Joint Operation of Power Systems of the CIS and Baltic States
<b>CEER</b>	Council of European Energy Regulators	<b>LFC</b>	Load Frequency Control
<b>CFCU</b>	EC Central Finance and Contracts Unit	<b>NORDEL</b>	Association of the TSOs in Northern Europe
<b>CMEP</b>	Compliance Monitoring and Enforcement Process	<b>OH</b>	Operation Handbook
<b>COMELEC</b>	The Maghrebian Committee of Electricity, including countries Morocco, Algeria and Tunisia	<b>SAF</b>	System Adequacy Forecast
<b>DACF</b>	Day Ahead Congestion Forecast	<b>SAR</b>	System Adequacy Retrospect
<b>DG TREN</b>	Directorate-General for Energy and Transport, European Commission	<b>SC</b>	Steering Committee
<b>DH</b>	UCTE Data Handbook	<b>TSO</b>	Transmission System Operator
<b>EPC-CIS</b>	Electric Power Council of the Commonwealth of Independent States	<b>UCTE</b>	Union for the Co-ordination of Transmission of Electricity
<b>ETSO</b>	European Transmission System Operators	<b>UKTSOA</b>	Association of the TSOs in Great Britain
<b>EWEA</b>	European Wind Energy Association	<b>WAMS</b>	Wide Area Measurement System
<b>EWIS</b>	European Wind Integration Study	<b>IPS/UPS</b>	Interconnected Power Systems (of CIS and Baltic Countries)/Unified Power System

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