

UCTE

Austria
Belgium
Bosnia Herzegovina

Croatia
Czech Republic
France

Germany
Greece
Hungary

Italy
Luxembourg
Macedonia

The Netherlands
Poland
Portugal

Slovakia
Slovenia
Spain

Switzerland
Yugoslavia



Annual Report 2001

union for the co-ordination of transmission of electricity



A blue graphic element with a white grid pattern and a faint globe in the center. The text is overlaid on this graphic.

A visit to UCTE in 2001

union for the co-ordination of transmission of electricity



UCTE Annual Report 2001

300 kV

220 kV

The first number indicates the number of circuits, the second the voltage of the line. The number of circuits is the number of parallel lines between two substations.

Foreword of the President 4

A Visit to UCTE in 2001

1	Review of the UCTE's missions: UCTE is keeping the lights on	6
2	Some highlights of the activities in 2001	10
3	Mastering interconnected grids	12
4	UCTE action to the South and East of Europe	16
5	What are the challenges to UCTE in 2002?	19
6	The UCTE Working Groups: the living strength of the Union	20
7	UCTE's internal structure	26

President's Foreword

FACING NEW CHALLENGES OF A LIVING GRID

»...the point is to operate a power system for 400 million



Martin Fuchs
President of UCTE

The events of the year 2001 have also affected the electricity sector. At the beginning of the year, California faced an electricity crisis as it had never experienced before. Electricity supply to more than 2 million customers was interrupted as a result of flaws in the deregulation of the Californian electricity market. The occurrences that came about in one of the world's main economic regions have drawn attention to the tension existing between the market, on the one hand, and the security of supply, on the other hand.

Furthermore, the attacks of 11 September 2001 in the USA have raised the question of whether and to what extent the bases of our economic activities and everyday life can really be protected. Due to these events we came to realize that security is a vital good and almost indispensable for well-functioning markets. It is also against this background that co-operation within the UCTE has gained in importance. Ultimately, the point is to operate a power system for 400 million people in a secure and reliable manner day by day. In 2001, too, we have been successful in achieving this goal: The electricity market on the European mainland where competition continued to gain in intensity was virtually unimpaired.

For more than 50 years, the UCTE has thus proven to be able to guarantee an effective market platform. Whether common technical standards, regular energy demand forecasts, data exchange formats intended to facilitate cross-border supplies, or studies about the development of synchronous operation: without the UCTE as central organization whose activities and services enable a market to be realized, the European electricity market would only be a dream. Yet the reality shows that this dream has come true. Due to the dynamic market evolution, the UCTE needs to make necessary adjustments to keep in line with developments.

>>>

>>> During the year 2001, we have taken an important step in this direction by modifying our statutes and re-organizing our Working Groups. Our efforts focused on increasing the speed of response and the effectiveness of our steering committee, and intensifying the role of the UCTE as contact organization for decision-making bodies in energy policy. In future, we will increase our efforts towards constructive co-operation in proj-

the CENTREL countries Poland, Slovakia, Czech Republic and Hungary has shown that an approach based on adequate UCTE standards is likely to guarantee an organically safe extension of synchronous interconnection. The forthcoming preparations for synchronous interconnection with Romania, Bulgaria and the Western Ukraine will also be in line with this policy. Furthermore, the preparations for reconnecting the



people in a secure and reliable manner day by day. «

ects of the European Commission aiming at a rise in electricity exchanges throughout Europe, or in the technical implementation of cross-border pricing mechanisms.

We also appreciate that UCTE has been involved in the progress of the European Commission's and European energy regulators' »Florence Process«, especially on subjects like »Security and reliability« and »European infrastructure«.

In this context, and with regard to other issues, we must succeed in rousing non-experts' interest in UCTE topics and making them understand our reasoning. To this end, our expertise in technical and statistical terms serves as an excellent basis. The »power balance forecast«, for instance, certainly represents the best-founded analysis of the supply and demand development in the electricity market on the European mainland. Based on this forecast, the European decision-making bodies will have to decide on whether sufficient allocation signals are given in the common European electricity market to maintain electricity generation close to consumption centres. Otherwise, structural mistakes would lead to excessive strain on networks.

The market is also the determining criterion in the light of the envisaged extension of the interconnected power system. The experience gained from synchronous interconnection with

Balkan countries and Greece to the UCTE system will be a matter of priority to us in 2002.

Now more than ever, the criterion of secure and efficient interconnection will be the focus of interest, particularly in the light of the events in 2001. However, security and quality have a price. The impacts of September 11th have given evidence thereof, whether in the aircraft industry or in other sectors. However, this very environment also shows that it is worthwhile striving for security and efficiency. The avoided damage is out of all proportion to the expenditure required for complying with the common standards of interconnected operation, since nobody can estimate the cost of a large-scale blackout in Europe.

Martin Fuchs

Review of UCTE's missions:

1

UCTE IS KEEPING THE LIGHTS ON

2001, the year in which UCTE celebrated its 50th anniversary, was an important year for the association. The process of fundamental changes which the power business is experiencing throughout Europe, and more specifically the unbundling of transmission, has also entailed significant changes for the UCTE.

During the 50 years of UCTE's existence, the association has experienced continuing growth from 8 to 21 member countries, all belonging to the UCTE synchronous area.

Keyfigures

35	Transmission System Operators (TSO)
21	European Countries
400 million	Customers served by the represented power systems
512 GW	Installed capacity
2160 TWh	Electricity consumption in 2001
230 TWh	Sum of electricity exchange between member TSO's under rules of UCTE
200.000 km	Length of high-voltage transmission lines managed by the TSO's

Keeping the lights on



Since the latest change in the UCTE's articles of association, which date back from 1999, when the »P« in the old UCPTTE was dropped, discussions had taken place in the association in order to assess the missions of UCTE in the new business environment.

A general consensus was reached, which tended towards the following main issues:

- 1 The reliability of the European interconnected area is a precondition for the electricity market, and this is today UCTE's number one mission: keeping the lights on throughout the electric system in the UCTE Synchronous Area, serving some 400 million customers.

This objective covers two major functional aspects:

- the security assessment of the system, which is the ability of the system to withstand major or sudden disturbances, such as the loss of production units or grid elements, due to outages or natural catastrophes, but also to accidents or attacks;
- the assessment of the adequacy of the system, which is the structural ability of the system to supply in a medium term of 2 to 3 years, the aggregate power and energy demand required by the market.

- 2 The decision-making and monitoring relative to the development of the synchronous area. Since the setting up of UCPTTE in 1951, the organisation has successfully managed multiple extensions of the synchronous area, of which the most remarkable in recent years was the interconnection of the 4 CENTREL countries in 1995. Today, several issues need to be addressed: to the South, the synchronous interconnection to the Maghreb countries via the Spain-Morocco submarine link; to the South-East, the interconnections towards Turkey; to the East, the interconnection of the Western Ukrainian area of the Burshtyn island, the question of defining a position and implementing a strategy towards the systems of Russia and the other CIS states. <<<

Main missions of UCTE

-
- 1 *Technical and operational co-ordination* of the interconnection in the UCTE synchronous area

 - 2 Monitoring and control of the short-term *reliability* of the system with regard to *load, frequency control, stability, etc.*

 - 3 Medium-term *adequacy* between generation & load (3-year power balance forecast)

 - 4 Study and monitor the *development* of the synchronous area.

as precondition for a functioning market platform

Legal form and secretariat



At the General Assembly in Lisbon in May 2001, the UCTE was set up in legal form as an international association of transmission system operators. This was a major change in the 50-year history. The need for shorter decision processes, for permanent and professional secretarial support, and the need for a legal structure allowing

to contract with service providers and authorities: all these requirements inspired the members to undertake this change.

In the articles of association, the objectives of the Union were redefined, as summarized in the following box:

Development of the synchronous area on a time line

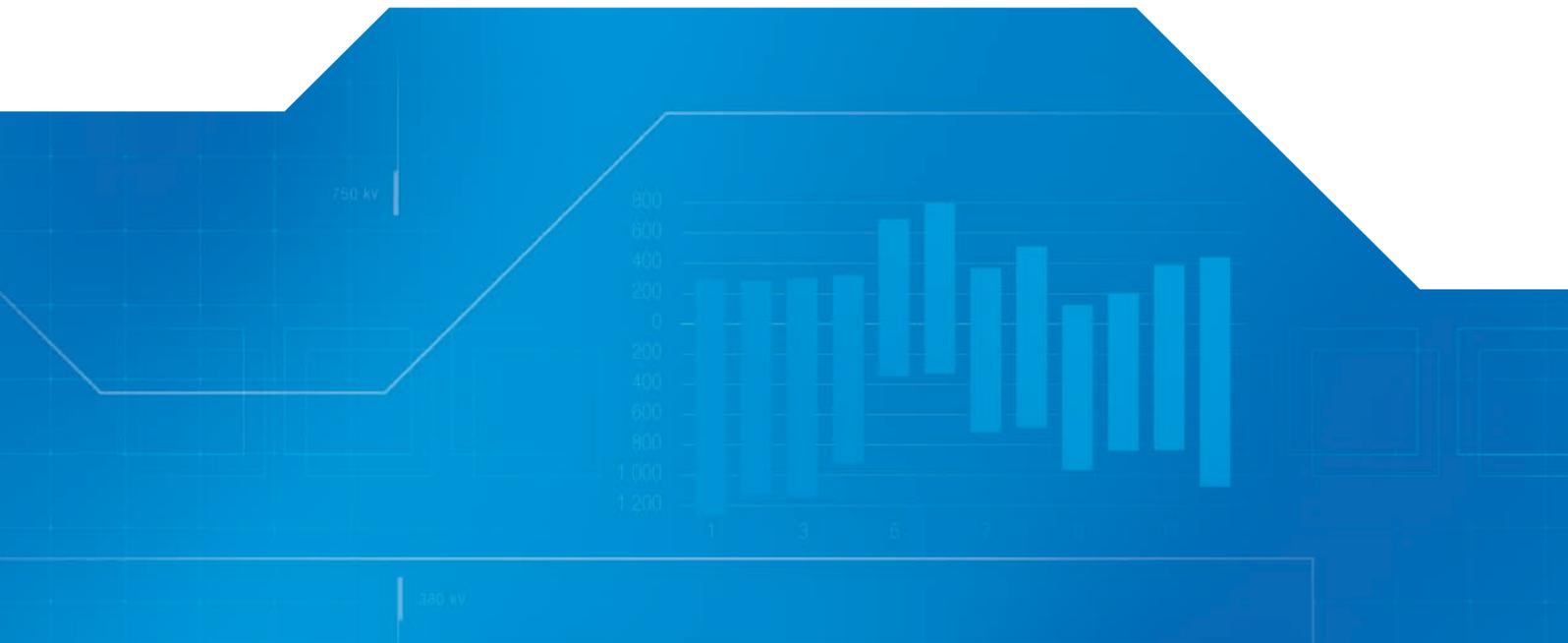
Synchronous interconnection with Czech Republic, Hungary, Poland and the Slovak Republic	<i>since 1995</i>
Re-Connection of Balkan countries and Greece	<i>on track, expected for 2003</i>
Preparation of synchronous interconnection with Romania, Bulgaria and the Western Part of Ukraine	<i>in discussion</i>
Maghreb countries and Turkey	<i>requested</i>
Russia (together with Ukraine, Belarus etc.)	<i>requested</i>



SOME HIGHLIGHTS OF THE ACTIVITIES IN 2001

2

- The test program for synchronous interconnection of Bulgaria and Romania was successfully continued from 8 January to 31 March 2001 and from 8 July to 30 September 2001; the evaluation of these tests by UCTE proved that primary and secondary control are properly functioning in these two countries, and that their primary and secondary control reserves are sufficient, and operate according to the UCTE standards so that both systems can adequately respond to all disturbances, and thus increase the mutual benefits for all partners.
- In May 2001, a Memorandum of Understanding was signed between HEP, JPCC, EPS and UCTE that aimed at expediting and facilitating the re-establishment of the North-South interconnection; in this respect, UCTE will support HEP and JPCC with the resources available within the scope of its principles; UCTE will take initiatives towards the European Union and possibly other international authorities or institutions in view of facilitating the financial and technical feasibility of the project.
- On the other hand, HEP and JPCC make their best endeavours to obtain full support from their respective governments to grant the necessary priority to the restoration and the earliest possible operation of the *Mostar* (JPCC) and *Ernestinovo* (HEP) substations, as well as the 400 kV connection between *Mostar* and *Ernestinovo* and the planned 400 kV interconnection with the *Pecs* substation in Hungary.



- Following the Memorandum of Understanding with EURELECTRIC of October 2000, the co-operation between both organizations was actualized and resulted, inter alia, in the designation by UCTE of the convenor to the SYSTINT Working Group. SYSTINT is a forum where all market participants and authorities involved meet to discuss interconnection and power market issues in a pan-European context, extending from the European Union to the Mediterranean, the Baltic countries, the Balkan and some C.I.S. countries.
- UCTE maintained or intensified the contacts with the European Commission, EURELECTRIC, ETSO and C.E.E.R., the Council of European Energy Regulators.
- UCTE participated in the setting up of mechanisms for emergency power deliveries in the Balkans, where a very difficult situation existed at the beginning of the year following acts of war in 1999 in Yugoslavia. This was one element of UCTE's role in the Balkan area, which is further described in the section below. <<<

3

MASTERING INTERCONNECTED GRIDS

Especially during December 2001 and January 2002, a critical situation for the operation of the UCTE system has been observed by TSOs within some countries. This situation was basically caused by the price levels in the European energy markets and, at the same time, limited availability of primary energy sources that follow seasonal changes. As a result, the transmission system was operated with unusual load-flow patterns, close to the physical limit, and without sufficient security margins. In order to cope with these events, it was already necessary to apply ad-hoc measures like limitations for power exchanges and interruptions of supply. Such situations are likely to occur again in the near future due to the further promotion and increased use of short-term energy markets.

Congestions in Germany and Switzerland

Since the beginning of a cold period in the middle of November 2001, large and unusual physical power flows have been observed in the South-German and in the Swiss transmission systems. The combination of low temperatures, low hydraulic production and high electricity prices on the spot market had a strong influence on the electricity exchange situation in this area. Extreme power flows occurred from north-east to south-west inside the German EnBW-Grid, so that some transmission lines were operated close to their capacity limits.

The reason was a delivery schedule of more than 3,800MW from Germany to Switzerland. There had been a congestion in the 220kV system because a German nuclear power plant of an installed capacity of 1,400MW was out of operation at that time. The situation became even worse after mid-December as the weather got significantly colder and prices in European energy markets rose extremely. In the night hours of December 20, a delivery schedule of nearly 5,000MW was registered between Germany and Switzerland.

During these hours, more than 10 transmission lines in the EnBW system reached between 90% and 100% of their maximum capacity in the base-case. The network-analysis-function that controls the (n-1)-security criterion detected that in case of a failure of some grid elements a number of transmission lines would reach 145% of their maximum capacity. In parallel, a very high load appeared on the Swiss 380kV transmission system and on the transformers to lower voltage levels. In order to guarantee (n-1)-security, it was necessary to start additional rotating production reserve in Switzerland and, for the first time, to limit electricity imports from Germany. <<<

New exchange patterns in France and Spain

In December 2001, consumption in France reached a historical maximum level of 77,080 MW, the last record amounting to 72,450 MW in January 2000. This increase was significantly higher than the average growth rate of energy consumption in France. Due to this peak demand, the exchange pattern changed very rapidly: on December 6, the French system hit a record value for the export balance with a maximum hourly value of 12,450 MW. Two weeks later, the net balance showed an import

surplus of approximately 2,000 MW. Such enormous fluctuations show the reactivity of international exchanges to the volatility of market prices. This change in the exchange patterns has had particularly important impacts on the physical flows between France and Germany. Exports from Spain to France have been observed, whereas usual flows are going from France to Spain.

On December 17, 2001, values of 707 GWh, 34,930 MW and 35,500 MW for daily energy demand, mean hourly power and peak power, respectively, were recorded in Spain. On this date, the high electricity consumption, which was expected to reach 36,300 MW during the peak period, gave rise to a number of special steps that had to be taken to reduce consumption. These steps included an interruption of supply, where allowed in the contracts, and the request to moderate electricity demand during critical hours. In view of the seriousness of the situation in two specific areas of the system, the TSOs requested temporary load shedding of some 500 MW. <<<

New perspectives for the future

1st Synchronous
UCTE region

2nd Synchronous
UCTE region

Synchronous operation
with 1st UCTE region

Synchronous operation
with 2nd UCTE region

Following the above observations, it can be concluded that:

- changes in the availability of primary energies, incidents of generating units as well as seasonal and occasional influences may cause significant deviations of the prices in the European energy markets,
- the volatility of power exchanges and physical power flows has increased significantly (even in time frames of a few hours) due to market mechanisms,
- the resulting physical power flows tend to approach the security limits for the operation of the transmission systems, and to complicate and impede operational planning based on history,
- in addition to current congestion, new cross-border congestions as well as internal congestions are expected to emerge if this type of situation will continue to occur in the future,
- additional measures of the TSOs will be necessary to secure the operation of the UCTE transmission system under these circumstances, in correspondence with the current procedures for congestion management.
- development of network infrastructure with a view to facilitating increasing electricity transactions in the integrated market. <<<



4

UCTE ACTION IN THE SOUTH AND EAST OF EUROPE

In early 2001, UCTE assigned a top priority to the re-interconnection of the two UCTE synchronous zones existing since 1991.

In the wake of this action, UCTE committed itself to take all adequate measures to include Romania and Bulgaria as well as the so-called Burshtyn island in West-Ukraine in the reconnection scenario.

The political changes in Eastern Europe that came about in the early nineties earmarked the evolution of a period of radical geopolitical transformations in the broader European region. Based on their motivation for European integration, many countries in the area were seeking interconnection to UCTE, but the long and painful process that led to the emergence of new states in the South-Eastern part of the European continent caused in 1991 serious damages to the high-voltage grid infrastructure at the 400 kV and 220 kV voltage levels.

In April 1996, UCTE had set up a priority list concerning the interconnections in the South-Eastern part of its network: first, completion of trial operation with CENTREL countries; second, re-interconnection of UCTE members in Bosnia-Herzegovina, Yugoslavia and Greece, and third extension of the network to the Bulgarian and the Romanian systems, possibly with the southwest sub-system of Ukraine. Later, the interconnection process for the Turkish system was lined-up in this queue.

After the war damages that caused unavailability of the 400 kV link between Croatia and the Former Republic of Yugoslavia (from *Tumbri station* over *Ernestinovo* to *Mladost*) on the one hand, and the 400 kV link between Croatia, Bosnia-Herzegovina and the Former Republic of Yugoslavia (so-called »Adriatic line« from *Konjsko station*, over *Mostar*, *Gacko* and *Trebinje* to *Podgorica*) on the other hand, UCTE faced the separation of an important part of the synchronous UCTE grid (extending to the networks of Serbia, Montenegro, Former Yugoslav Republic

of Macedonia, Greece, a part of Bosnia-Herzegovina (Republika Srpska) – and indirectly Albania) which had to be operated asynchronously from the remainder of the UCTE system.

This situation had obvious adverse effects primarily on the countries directly affected but also on the European and international community, given the close historical, cultural and economic ties between the countries of Eastern and Western Europe.

However, over the years, the main obstacle for the reconstruction of the infrastructure remained the lack of funds. In fact, the realization of the different projects is strongly linked with the incentives and benefits associated with each particular project. Since UCTE does not intervene in the investment strategy of its members, its role was to assess and support the validity of projects whose implementation was dependent on an active financial support by the European Union and international financial institutions.

In the time following the split-up of the UCTE network, usable parts of the grid infrastructures in the separated area were operated partly at a lower voltage level and were connected with parts of the grid operated at this lower voltage level; thus, the local electric energy supply was resumed but the re-establishment of the full UCTE interconnection was still submitted to the repair of the above mentioned key 400 kV infrastructure.

During that time, UCTE focussed its activities on two axes: continuity and flexibility. <<<



Continuity – Keeping contacts

UCTE maintained active contacts and working structures gathering system operators in both synchronous areas in order to rejoin the full community of system operators in the upgrading and/or the development of new UCTE standards and having them participate in the updating and re-foundation of the association's internal structure. What was at stake in this process was to adequately respond to the upcoming challenges of the liberalized markets in Continental Europe.

Meanwhile, UCTE also intensified its efforts to finalize the interconnection of CENTREL started in September 1995. A 400 kV line between Hungary and Croatia was put into operation in November 1999 which also led to a significant change of operating conditions. <<<

Flexibility - A pragmatic approach

Aiming at a further stabilization of the operating conditions in the separated part of the UCTE network, UCTE was required in 1993 to allow a temporary connection to the second synchronous area of the electric systems of Romania and Bulgaria that is operated today through four lines: *Thessaloniki – Blagoevgrad* (Greece – Bulgaria), *Nis – Sofia* (Former Republic of Yugoslavia – Bulgaria), *Djerdap – Portile de Fier* (Former Republic of Yugoslavia – Romania), *Sandorfalva – Mintia* (Hungary – Romania). The line *Subotica – Sandorfalva* (Former Republic of Yugoslavia – Hungary) is operated in radial mode, but also intended to provide a substantial contribution to improve the operating status after the reconnection of the separated zone.

UCTE recommended to the system operators directly involved to keep running the separated

systems according to UCTE standards in order to prepare and ease the way to their re-integration into the interconnected UCTE system for the benefits of the entire region.

Finally, UCTE responded positively to the request for an additional clamp between CENTREL and Romania through a part of the West-Ukrainian network surrounding the power plant *Burshbyn* and the *Mukachevo* substation, which operates through the links *Kapusany – Mukachevo* (Slovakia – Ukraine), *Sajósöged – Mukachevo* (Hungary – Ukraine), *Rosiori – Mukachevo* (Romania – Ukraine). Finally, the submarine cable *Italy – Greece* commissioned in mid-2001 was the first new link opened between Greece and the centre of the UCTE network towards what should become a permanent and reliable synchronous interconnection. <<<



UCTE is determined to keep responding adequately to the upcoming technical challenges resulting from the present market liberalisation in Continental Europe. This matches the recommendations of the European Commission's and European energy regulators' »Florence Process«, especially on subjects like »Security and reliability« and „European infrastructure«. In particular, the CEER has made UCTE responsible of publishing a set of common technical standards which would be binding for all concerned parties. These standards will be collected in the form of an »Operational Handbook«.

WHAT ARE THE CHALLENGES TO UCTE FROM 2002 ON?

5

As recalled above, UCTE has received and keeps receiving many requests for new electrical interconnections with a number of countries. UCTE's general policy is to endeavor the development of such interconnection to facilitate the electricity market, in the framework of standards, which preserve the reliability of its synchronous area. UCTE is ready to pro-actively support and realize such projects. Each particular case will be studied, taking into account possible interferences with other interconnection requests, and avoiding prejudices against possible solutions (for example, in particular circumstances, DC-operation of the interconnection with back-to-back stations at the interface can be a viable alternative).

In order to contribute to the market's smooth functioning, UCTE also intends to reinforce its policy of statistics publication. To be economically efficient, operators need reliable and accurate technical information about the state of the transmission network and of the energy flows. There-

fore, UCTE is expanding the set of data which is collected and published; for instance, statistics on unavailability of international tie lines have been made available. All stakeholders also need information on the evolution of the system's adequacy, i. e. its structural ability to supply the aggregate power and energy required by the market. Therefore, UCTE will enhance its present report »Power Balance Forecast« into an adequacy statement of the whole European synchronous interconnected system.

Facing the increasing complexity of international electricity markets and systems and the information »flooding« from numerous sources, UCTE currently investigates possibilities for the improvement of UCTE information storage and publishing systems as a response to the needs of the UCTE-website users. <<<

The living strength of the Union:

6

THE WORKING GROUPS

higher flexibility

The UCTE Working Groups have been restructured and given a higher flexibility to develop their activities. As competence centers of UCTE, they made a cooperative contribution to the following objectives:

- Maintain the reliability of the power system in order to create and operate a robust, competitive, and non-discriminatory electric power market
- Gain and maintain the confidence of network users, government entities and market participants by providing them in a non-discriminatory way with high-quality data and information services
- Address the needs and requests of network users or neighboring systems to extend the UCTE synchronous area without jeopardizing the high quality standards developed by UCTE.

Working Group »Operations and Security«



Convenor
Klaus Kleinekorte

The established TSO operating standards, procedures and mechanisms from the past have to be critically reviewed and may be adapted to support the international transmission of electricity within the new frameworks. This is the main scope of the Working Group »Operations & Security« which succeeded the former Working Group on »Interconnected Operation« in September 2001.

In 2001, the main activity of the Working Group and its sub-groups focused on regular tasks and reports and the internal re-organisation of work. Two permanent Sub-groups »TSO-Forum« (succeeding the former Sub-group on »Interconnection«) and »Network Models & Forecast Tools« (succeeding the former Sub-group on »Network Models«) were set-up to continue the previous work.

The Sub-group »TSO-Forum« provides a platform for the exchange of experience gained in operation with a view to guaranteeing regular monitoring procedures, reviews and reports on important operational aspects affecting the UCTE network as well as on special operational events such as frequency quality, control performance, and disturbances. The evaluation of the last frequency measurement campaign as well as the preparation of the next campaign planned for 2002 were performed in 2001.

The Sub-group »Network Models & Forecast Tools« prepares, on a regular basis, reference network data sets (load-flow models, snapshots) and completes UCTE network models that are required for load-flow analyses, congestion forecasts and short-circuit calculations. Furthermore, the Sub-group started to work on UCTE reference documents for procedures on congestion management, day-ahead congestion forecasts, usage of the UCTE-format and network modelling.

Specific individual conditions and requirements for access to the national grids are defined in national Grid Codes. To guarantee the overall reliability and security of the interconnected synchronous system of UCTE, additional technical requirements need to be defined, implemented by each individual TSO and evaluated by authorised UCTE bodies with a view to assuring the quality standards defined in technical standards and recommendations. In this context, the Working Group has started the development of a »UCTE Operation Handbook« that comprises all current UCTE standards and recommendations, updated to the new TSOs' environment and framework. <<<

Working Group »System Development«

answers and strategies based on system studies



Convenor
Georges de Montravel

During its long history, UCTE has always welcomed applications for the extension of the interconnected network. Whenever an extension was proposed, appropriate solutions were designed for the interconnection of new systems, together with the requisite forms of organization and cooperation. UCTE has contributed to build one of the largest synchronous interconnected systems in the world, supplying electricity to hundreds of millions of customers in a secure and reliable way.

Until now, the overall advantages of controlled extension which did not jeopardize the global security of the interconnected operation have been sufficient to offset or outweigh any drawbacks encountered by members in the center of the system.

In the light of liberalization and increasing requests of countries to be interconnected to the existing system, UCTE has to face a major challenge.

Although many valuable studies have been carried out on the subject, UCTE decided to create a specific Working Group on »System Development« charged to:

- draft quick answers to immediate requests for interconnections
- propose a medium-term strategy (two to three years ahead)
- develop a prospective vision for the far future.

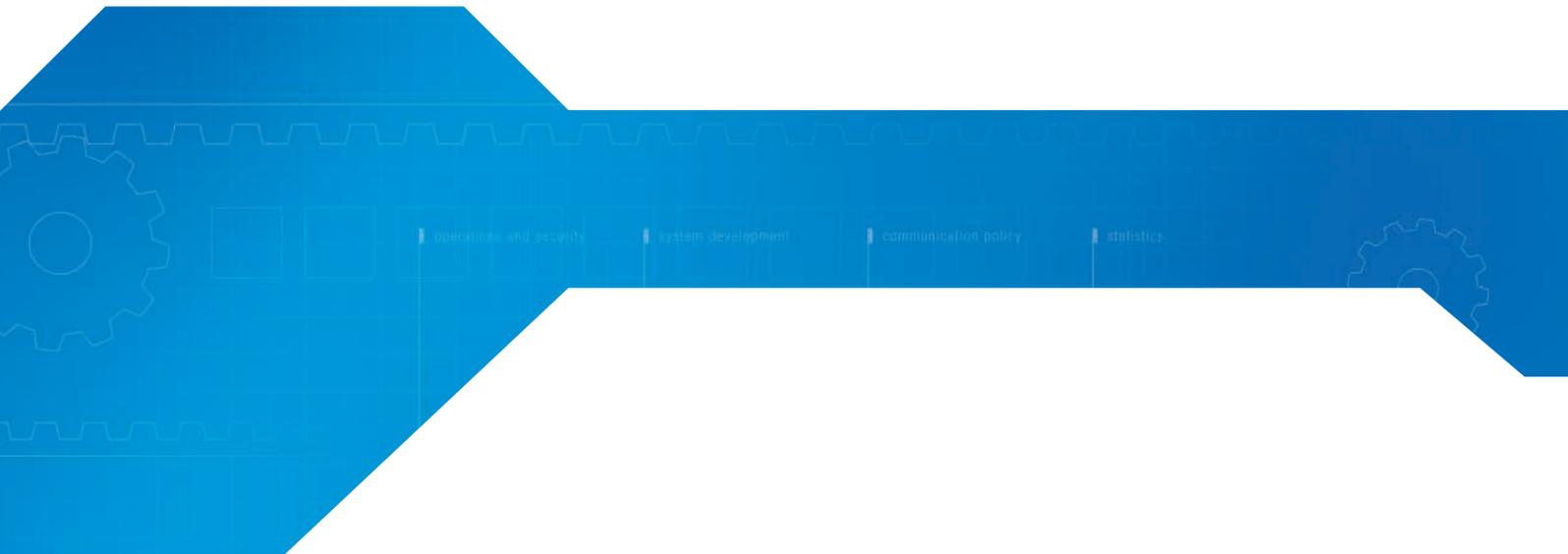
In particular, the topics discussed refer to:

- the general prerequisites as well as the organization of relations between neighbouring TSOs
- the various types of agreements to be signed between all parties involved
- the general sequence of operations to be carried out before and after interconnection
- the implementation of the organization to monitor the development process

The program of work comprises three phases: first, making an inventory of all the projects, available studies, partners and requests for interconnection; second, a study phase leading to detailed strategies, and finally the implementation and monitoring phase.

The general approach of the Working Group is characterized by:

- a pragmatic approach based on transmission projects and requests for interconnection
- answers and strategies based on system studies conducted or carried out by UCTE.



The terms of reference as well as the organization of work of the Working Group have been approved in September 2001. The »System Development« Working Group is composed of one main group which sets the general framework and supervises the work of the four Sub-groups: »Turkey«, »Mediterranean Ring«, »East of CENTREL« and »Study Tools«.

The »Turkey« Sub-group is studying the request of Turkey to be interconnected with the UCTE system. The inventory phase has been finished, and the definition of the strategic approach is being developed. Two studies have been performed in the scope of the Trans European Networks Program to investigate the possibilities for connecting the Turkish network.

The UCTE system is already synchronously interconnected with Morocco, Algeria and Tunisia. Libya, Egypt, Jordan and Syria are already interconnected with one another, so that a special Sub-group for the Mediterranean area has been set up. Interconnection lines have been built between Tunisia and Libya, and the four eastern countries have made a request for interconnection with the UCTE system.

One study has been performed by *Red Eléctrica de España* and *Hydro Québec*, to analyze the impact of this interconnection. The »Mediterranean Ring« Sub-group is waiting for the results of this study to define the process of interconnection of the four candidate countries.

The »East of CENTREL« Sub-group investigates the possible interconnections towards the Baltic countries, Ukraine and Russia. The inventory phase is still in progress and should be finalized by 2002. Furthermore, the Sub-group examines the request of Romania to connect a passive load of 200MW at *Rosiori*. The Sub-group has listed the technical requirements which have not been completely satisfied yet; Romania is working on their accomplishment.

All studies performed for the interconnection of new systems have been initiated by TSOs or by the European Commission under the TEN program. The aim of the »Study tool« Sub-group is to enable the UCTE to carry out studies with a view to analyzing the impact of new interconnections on the UCTE system.

This Sub-group also studies the strategy of reconnection of the second UCTE area to the first one. An assessment of the existing study is in progress, taking account of the present schedules of reconstruction of the destroyed lines and substations which are needed for the reconnection of the second area. <<<

Working Group »Communication Policy«



Convenor
Carlo Crea

One of the main organisational innovations within the new UCTE approach towards the electricity market has been the creation of a Working Group on »Communication Policy« with the following objectives:

- to support the external representation of UCTE;
- to ensure that UCTE is recognised by market participants and other organisations as the responsible Association in terms of operational, technical and reliability issues of the interconnected system and its development;
- to optimise the flow of information and its impact (internal and external) with regard to UCTE standards, recommendations and positions.

The main tasks supported by the »Communication Policy« Working Group have been to propose an integrated communication plan for UCTE and to support the UCTE bodies in drafting position papers, in the choice of communication channels for appropriate dissemination of standards, recommendations, decisions towards market participants, associations and authorities.

Starting from the existing level of communication tools and from the UCTE information products, the Communication activities of UCTE have been refocused and extended based on a specific communication strategy in order to optimise the flow of information and its impact on the different audiences.

During the first year of activity, the Working Group focused its work on the identification of actions to be taken with a view to improving the UCTE communication system.

The UCTE information system, with particular regard to the UCTE Extranet Web Site, represents the most cost-efficient platform for the dissemination of internal UCTE documents among partners and for facilitating contacts among the TSO members. In this respect, the Working Group has undertaken various activities to improve the functionality and increase the benefit of the internal information system:

Based on the definition of a corporate identity for all UCTE matters, a clear internal information distribution policy has been implemented.

External communication is of prime importance to promote the mission of UCTE towards potential interlocutors. The main objectives of external communication are to promote and increase public perception and awareness of UCTE's standard-setting role for the operation and transmission system and for system adequacy. Therefore, UCTE should endeavour to gain increased recognition by authorities, network users and other organisations.

To improve communication policy, the Working Group is focusing its activities on defining a global communication strategy for UCTE through different projects.

Working Group »Statistics«

operational, technical and reliability issues



Convenor
Jacek Ratz

The deregulation of the European electricity market has had an influence upon the UCTE statistics. High expectations of market participants, consultants, political and regulatory bodies in terms of statistical information put a great challenge on the Working Group. On the other hand, unbundling of the European industry and an increasing share of renewable energy sources and dispersed generation made it more difficult to collect important statistical data.

One of the means applied to meet the expectations of market participants and regulatory bodies are statistics on unavailability of international tie-lines, network reliability and scheduled electricity exchanges. These statistics were collected throughout the year 2001 on a trial basis. Collection of the data for new statistics is fully based on Internet technology. Regular reports including these data will be published in monthly statistics as from January 2002.

The Working Group has defined new terms of reference and a strategic plan for the next years. The new terms of reference take into account the following goals:

- making statistical data available:
 - in order to support interconnected operations and network planning,
 - to market participants about the interconnected networks and their use,
 - to political and regulatory decision makers about the interconnected networks and especially system security,
 - to the public in order to improve the understanding of interconnected operation, and of the importance of reliable and secure operation,
- collecting data for which the benefits exceed the costs.

The main tasks of the Working Group refer to:

- optimal management of the UCTE statistics in the transition to liberalised power markets and increased co-operation of TSOs in Europe;
- maintenance of the quality and consistence of the existing statistics, their usefulness, and the ability of the TSOs to collect the necessary data;
- definition and implementation of new TSO statistics where needed, especially implementation of the decisions regarding »Statistics in the liberalised electricity market«;
- regular publication of power balance forecasts and retrospectives;
- close co-operation with the Secretariat on methods of data collection and data consistency.

The Working Group's strategy focused on the provision of reliable information on transmission systems operation in the deregulated electricity industry. The main strategic goals for the next few years are:

- _ to maintain accuracy of UCTE statistical information;
- _ to make this information easy to access, understand and use, utilising mainly Internet technology;
- _ to remain the main source for comprehensive information on transmission system operation.

The »Power Balance« Sub-group has prepared the reports »UCTE Power and Energy balance – Retrospect for the year 2000« and »UCTE Power Balance – Forecast for 2002-2004« on the basis of current operating data, and by using the new methodology for the second time. These reports providing an assessment of system adequacy, have been published in the Half-Yearly Reports I and II, as well as on the UCTE Web site.

By assessing the medium-term adequacy between generation and load (3-year power balance forecast) the Working Group meets one of the main missions of the UCTE as the organisation responsible for the security of interconnected system operation. <<<

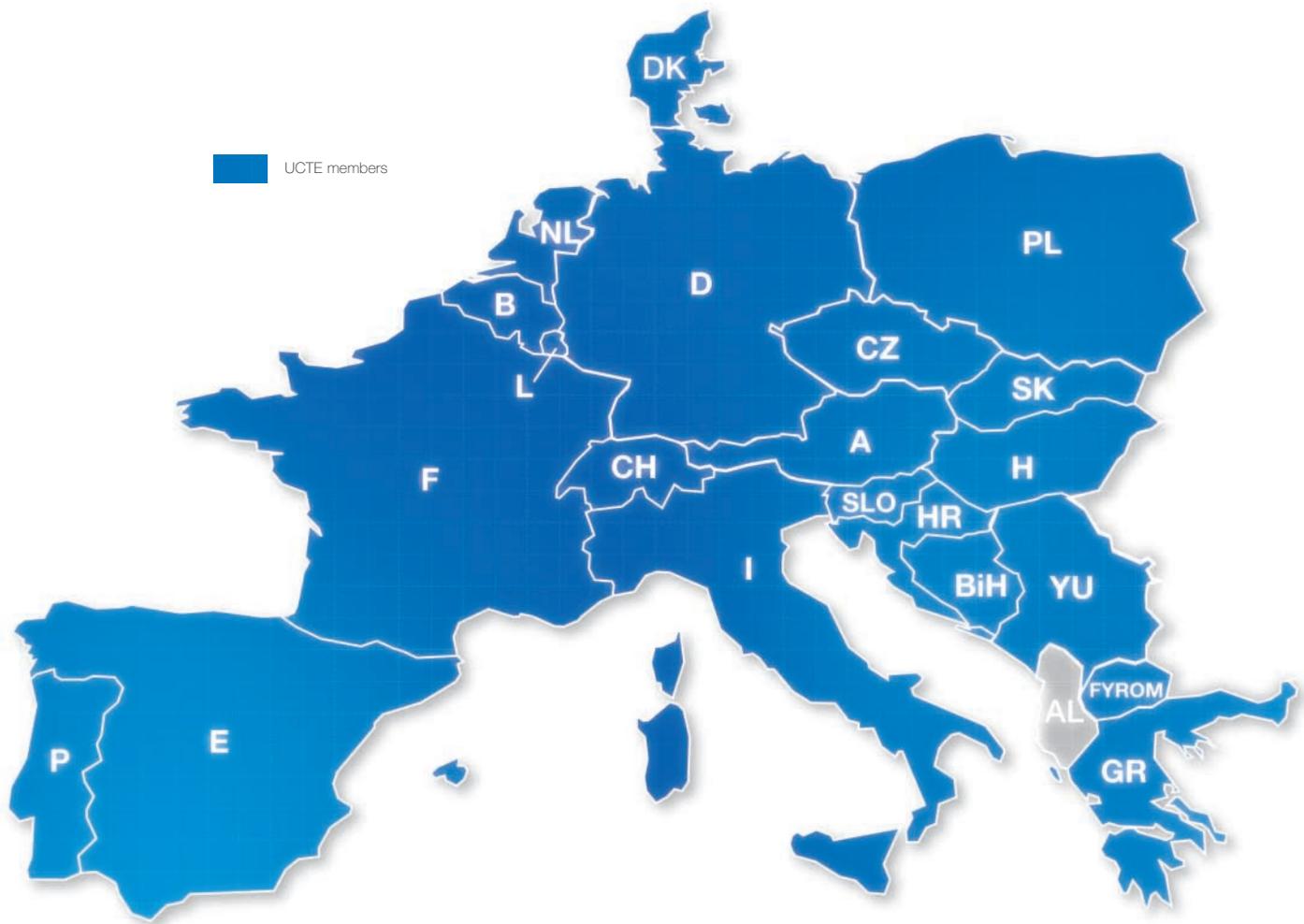
7

UCTE'S INTERNAL STRUCTURE

A working structure fit for the challenges

The working structure of UCTE has been organized around 4 Working Groups, each of them reporting to the Steering Committee. All member countries are represented in the Steering Committee, which is the executive body of the association.

The European area covered by the UCTE



Member companies in UCTE as of 1.1.2002

Austria	VERBUND APG TIWAG VKW	<i>Verbund – Austrian Power Grid GmbH Tiroler Wasserkraftwerke AG Vorarlberger Kraftwerke AG</i>
Belgium	Elia	<i>Elia SA/NV</i>
Bosnia-Herzegovina	JPCC	<i>Joint Power Coordination Center</i>
Croatia	HEP	<i>Hrvatska Elektroprivreda d.d.</i>
Czech Republic	CEPS a.s.	<i>CEPS</i>
France	RTE	<i>Gestionnaire du Réseau de Transport d'Electricité</i>
FRY	EPCG EPS	<i>Elektroprivreda Crne Gore Elektroprivreda Srbije</i>
FYROM	ESM	<i>Elektrostopastvo na Makedonija</i>
Germany	Bewag EnBW E.ON Netz HEW RWE Net VEAG DVG *	<i>Bewag AG Energie Baden Württemberg AG E.ON Netz GmbH Hamburgische Electricitäts-Werke AG RWE Net AG Vereinigte Energiewerke AG Deutsche Verbundgesellschaft e.V.</i>
Greece	HTSO / DESMIE	<i>Hellenic Transmission System Operator / Diachristis Ellinikou Sistimatos Metaforas Ilektrikis Energias</i>
Hungary	MVM Rt.	<i>Magyar Villamos Művek Rt.</i>
Italy	GRTN	<i>Gestore della Rete di Trasmissione Nazionale</i>
Luxembourg	CEGEDEL	<i>Compagnie Grand Ducale d'Electricité du Luxembourg</i>
The Netherlands	TENNET	<i>TenneT bv</i>
Poland	PSE	<i>Polskie Sieci Elektroenergetyczne SA</i>
Portugal	REN	<i>Rede Eléctrica Nacional, S.A.</i>
Slovak Republic	SE a.s.	<i>Slovenské Elektrárne, a.s., Prenosova sústava</i>
Slovenia	ELES	<i>Elektro Slovenija</i>
Spain	REE	<i>Red Eléctrica de España S.A.</i>
Switzerland	ATEL BKW FMB Energie EGL Grid EOS ETRANS NOK	<i>Aare-Tessin Ltd. for Electricity BKW FMB Energie AG / BKW FMB Energie S.A. EGL Grid AG Energie Ouest Suisse Etrans Ltd. Nordostschweizerische Kraftwerke AG</i>
Denmark	ELTRA *	<i>Eltra</i>

* Associate members



Martin Fuchs
President of UCTE

The decision-making bodies of UCTE are the Assembly, in which all 35 members of UCTE are represented, and the Steering Committee with one representative from each one of the 21 member countries.

The Bureau consists of the President, the Vice-President of the Association, the Chairman of the Steering Committee and the Secretary General.

Finally, the Assembly elected on 25 October 2001 the new Bureau for a 2-year term as from 1 January 2002: Martin Fuchs (D), President of UCTE, Frank Vandenberghe (B), Chairman of the Steering Committee, Ales Tomec (CZ), Vice-President.



Frank Vandenberghe
Chairman of
Steering Committee

The four Working Groups of UCTE, composed of up to 10 experts from the member companies spread all over the European countries, focus their activities on operations and security, system development, communication policy and statistics. They are installed by the Steering Committee according to the articles of association, and entrusted with specific missions.

Organizational chart as from 1 January 2002

	<i>Assembly</i>	
	Representatives of 35 TSO in 21 Countries President: Martin Fuchs	
<i>Bureau</i>	<i>Steering Committee</i>	<i>Secretariat</i>
– President – SC Chairman – Vice-President – Secretary General	1 Representative per Country Chairman: Frank Vandenberghe	– Secretary General: Marcel Bial
	<i>Working Groups</i>	
	<i>Operations and Security</i> Convenor: Klaus Kleinekorte	
	<i>System Development</i> Convenor: Georges de Montravel	
	<i>Statistics</i> Convenor: Jacek Ratz	
	<i>Communication Policy</i> Convenor: Carlo Crea	

The Secretariat



Secretary General
Marcel Bial

The Secretariat, led by Tim Roggenbach, was located in Berlin (D) till 31 December 2001. It was responsible for the implementation of the new UCTE statutes and working structures into the day-to-day business of the association. The Secretariat continues to provide and further improve the information services for member TSOs, market players and decision makers concerning the UCTE interconnected electricity system.

Finally, the Secretariat team in Berlin was involved in the preparation of the establishment as from 1 January 2002 of the permanent Secretariat which is located in Belgium, at Boulevard Saint-Michel 15 (Floors 2 & 3), B-1040 Brussels, Tel. +32 2 741 69 40, Fax: +32 2 741 69 49, <http://www.ucte.org>, E-Mail: info@ucte.org

On 17 May 2001, the Assembly elected Marcel Bial (A) new Secretary General of UCTE from 1 January 2002 for a 4-year term.



National representatives in the Steering Committee

A	<i>G. Neubauer</i>	H	<i>A. Tombor</i>
B	<i>D. Dobbeni</i>	HR	<i>I. Toljan</i>
BiH	<i>M. Cokorilo</i>	I	<i>A. Serrani</i>
CH	<i>P. Gfeller</i>	L	<i>G. Bonifas</i>
CZ	<i>J. Feist</i>	NL	<i>G. Maas</i>
D	<i>J. Schwarz</i>	P	<i>J. Penedos</i>
E	<i>A. Landa</i>	PL	<i>J. Dudzik</i>
F	<i>P. Bornard</i>	SLO	<i>V. Korosec</i>
FYROM	<i>L. Arnaudov</i>	SK	<i>A. Ksinan</i>
GR	<i>G. Katsigiannakis</i>	YU	<i>V. Marjanovic</i>

Used abbreviations

UCTE	<i>Union for the Co-ordination of Transmission of Electricity</i>
UCPTE	<i>Union for the Co-ordination of Production and Transmission of Electricity</i>
ETSO	<i>Association of European Transmission System Operators</i>
CENTREL	<i>Association of Transmission System Operators of the Czech Republic, Hungary, Poland and the Slovak Republic</i>
EURELECTRIC	<i>Association of the electricity industry in Europe</i>
NORDEL	<i>Cooperative association of transmission system operators, with members from Denmark, Finland, Norway, Sweden and Iceland</i>
UKTSOA	<i>Association of transmission system operators in the United Kingdom (England, Wales and Scotland)</i>
ATSOI	<i>Association of transmission system operators in the Republic of Ireland and Northern Ireland</i>

Publisher: Secretariat of UCTE
Boulevard Saint-Michel 15
B-1040 Brussels

Executive Editor: Marcel Bial

Managing & Production Editor: Olivier Feix

Design: Oswald und Martin Werbeagentur, Berlin

Printed by: Druckerei Humburg, Berlin

May not be reproduced without prior permission of UCTE



Existing lines with towers for lines with 2 circuits mounted

	W	D	E	F	GB	I	SD	BE	BB	PT	J	NO	A	PL	CZ	IT	GR	ES	UK	US
2001	8940	52	3900	-107171	2509	45476	1787	220	1564	4531	1525	47568	140	151	4304	8525	3175	2384	3681	1273
2020	4267	1558	4767	-108843	185	44416	1349	4887	1855	3110	3671	38819	1075	301	3732	10016	3436	4818	3921	4766

The above values have been obtained between the countries concerned and they may differ from the official national statistics.

4th edition, completed, revised
25 transmission systems operators
5.140 MW installed capacity



Contact

Boulevard Saint-Michel, 15
 B-1040 Brussels – Belgium
 Tel +32 2 741 69 40 – Fax +32 2 741 69 49
 info@ucte.org
 www.ucte.org