ATSOI

BALTSO

UKTSOA

4 June 2007

2006-2007

WINTER REVIEW

APPENDIX: DETAILED COUNTRY ANALYSIS

CONTENTS

1 UCTE Area

1.1 Austria

In Austria the winter 2006-2007, especially in the period from December to March was very warm which resulted in a decrease of demand. The monthly demand was up to 4.3% (March) lower than last year. The peak load in winter 2006-2007 reached 9286 MW and was about 195 MW lower than in the last winter.

Despite the low demand in some periods, the import was very high because of the low generation of thermal power plants.

Three phase shifting transformers (PST) were put into operation by end of November. This measure allowed for a better balanced distribution of load flows of the three existing 220 kV-lines from north to south of Austria and was very important to overcome the bottleneck on these lines. But, for a permanent improvement of these structural congestions in the future the commissioning of new 380 kV-lines (Südburgenland – Kainachtal, St. Peter – Tauern) is planned.

1.2 Belgium

Winter Outlook

The Winter Outlook Report 06/07 carried out in September 2006 for the Elia control area, which comprises Belgium and the SOTEL area (a part of the G-D Luxembourg) revealed that the desired safety level of 1000 MW for the generation-load balance would not be reached during the peak of weeks[1] 48, 49 and 50 of 2006 and during the peak of week 13 of 2007. It was assumed that system adequacy would be respected if the available import capacity was taken into account. In order to ensure a maximum level of available import capacity, no outages of 380 kV international lines were planned during the critical winter weeks. The first analysis of the system adequacy for the winter 2006-2007 was positive, assuming a net import during periods where there would be a generation-load imbalance.

The two main risk factors for the Elia grid that could jeopardise the positive winter adequacy assessment that were identified during this study were:

- atypical winter loop flows from the South to the North causing congestion problems in the Elia grid; and
- a generation-demand imbalance for the entire UCTE-main block.

Winter Overview

In reality the desired safety level of 1000 MW for the generation-load balance was not attained during the peak of weeks 48, 49, 50 and 51 of 2006 and during the peak of weeks 3, 4 and 11 of 2007. During the peak of week 50 of 2006 the remaining margin was lower than forecasted due to an unplanned prolongation of the maintenance of a generator. During the peak of week 51 of 2006 and during the peak of weeks 3, 4 and 11 of 2007 the desired safety level of 1000 MW was not attained due to the unexpected unavailability of several generators in Belgium. The forced outage of two generators during the peak of week 4 resulted in a decrease of the remaining capacity by more than 1500 MW. The forecasted unavailability of the desired safety level during the peak of week 13 did not occur due to changes in the timing of the maintenance of generators.

Figure 1 Forecasted Remaining Capacity Verses Observed Remaining Capacity (Week Peaks)

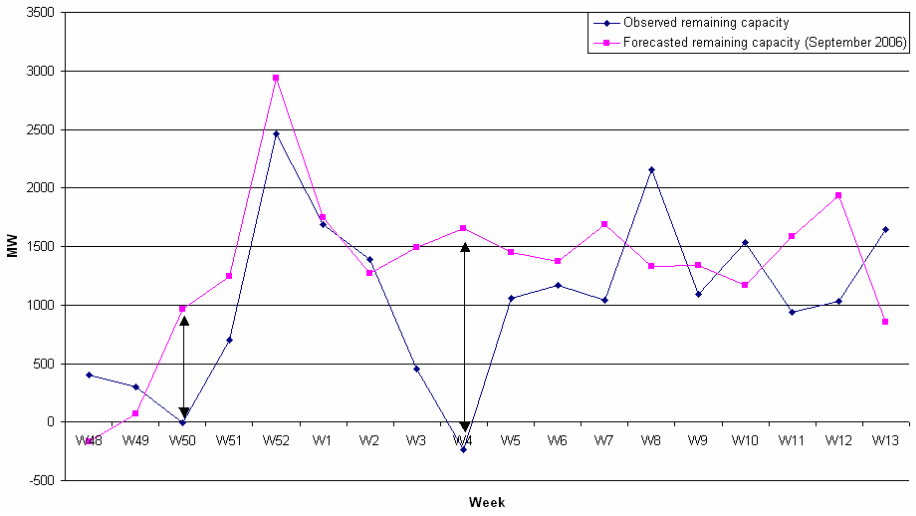
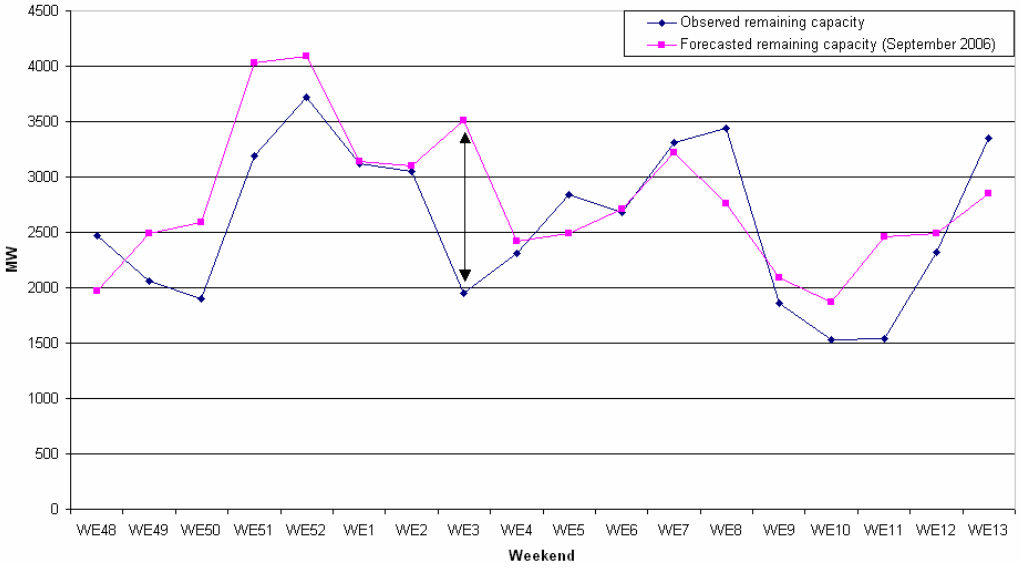


Figure 2 gives an overview of the forecasted remaining capacity (evaluation time September 2006) and the observed remaining capacity for the weekend peaks of the winter 2006-2007.

[1] The weekly peak equals the peak of the Wednesday of that week.

As foreseen, the desired safety level of 1000 MW for the generation-load balance was obtained for all weeks. The observed remaining capacity for the weekend peak of week 3 was lower than expected due to the unexpected unavailability of several generators in Belgium.

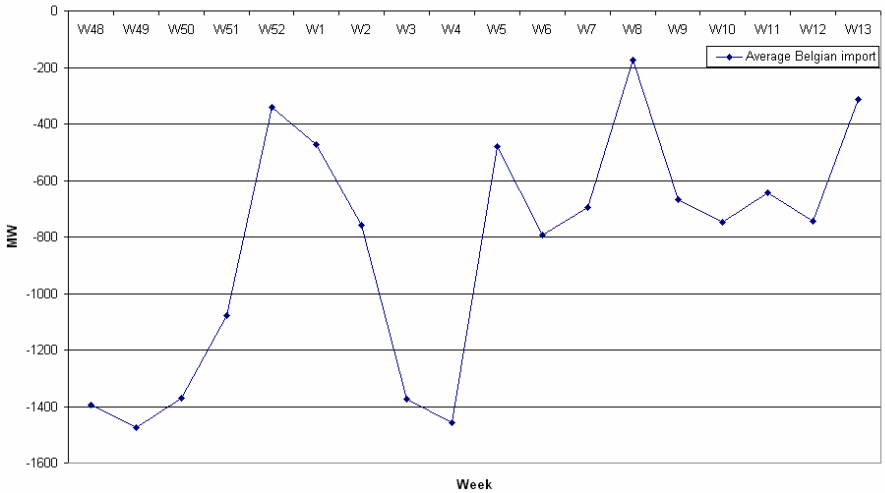
Figure 2 Forecasted Remaining Capacity Verses Observed Remaining Capacity (Weekends)



As indicated in the Winter Outlook, in these weeks the Elia control area structurally depended on import within the UCTE-main block in order to obtain the desired safety level of 1000 MW. Elia did not expect any congestion problems on its grid for the winter 2006-2007 due to the absence of planned outages of international lines during critical winter periods and the high probability that the observed loop flows would be from the North to the South.

Figure 3 shows the average Belgian import for the week peaks of the winter 2006-2007. This figure confirms that during periods where the desired safety level of 1000 MW for the generation-load balance is not met at a local level, the import levels are substantially higher.

Figure 3 Average Belgian Import For The Week Peaks Of The Winter 2006-2007



The observed loop flows were as expected from the North to the South for December 2006 and January 2007. Although the loop flows in November 2006, February 2007 and March

2007 were from the South to the North, the magnitude of these loop flows were not high enough to cause congestion problems in the Elia grid.

The system adequacy for the winter 2006-2007 was positive, because it was possible to import during periods where there was a generation-load imbalance and due to the absence of atypical loop flows that cause congestion problems in the Elia grid.

Demand

The forecasted demand levels took into account normal temperature conditions. The average temperature during winter 2006-2007 was on average 1.8°C higher than the decennial average winter temperature (1997-2006). Therefore, the actual demand levels were lower than the forecasted demand levels.

Transmission Infrastructure

As planned, no outages of the international 380 kV lines took place during winter 2006-2007. This allowed to provide a maximum level of available simultaneous import capacity during periods where the desired safety level of 1000 MW was not obtained.

The double circuit upgrade from 150 kV to 220 kV of the line Jamiolle-Monceau together with the installation of a phase shifter in Monceau (commissioned in January 2007) increased the simultaneous import capacity of Belgium. Consequently, the NTC-value from France to Belgium will increase with 300 MW for a reference grid situation in summer (indicative non-binding figures).

Use of Interconnection

Figure 4 and Figure 5 give an indication of the utilisation of the capacity of the interconnectors between France and Belgium and between The Netherlands and Belgium during winter 2006-2007. In order to assess the utilisation of an interconnector the available interconnector capacity is compared to the used interconnector capacity. Figure 4 illustrates that during periods where the desired safety level of 1000 MW for the generation-load balance is not attained (the peak of weeks 48, 49, 50 and 51 of 2006 and the peak of weeks 3, 4, and 11 of 2007), the utilisation ratio of the interconnector between France and Belgium is almost always 100%. Figure 5 shows that the interconnector between The Netherlands and Belgium during these same periods, with exemption of the peak of week 50 of 2006 and the peak of week 4 of 2007, is used to export to the Netherlands.

Figure 4 Utilisation Of The Capacity Of The Interconnector Between France And Belgium For Week Peaks

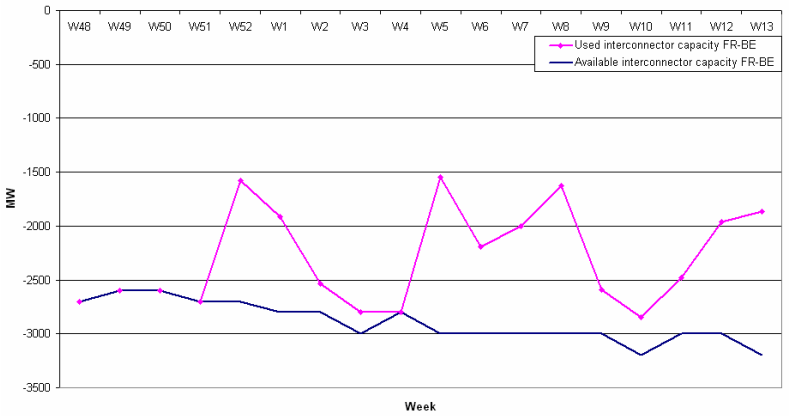
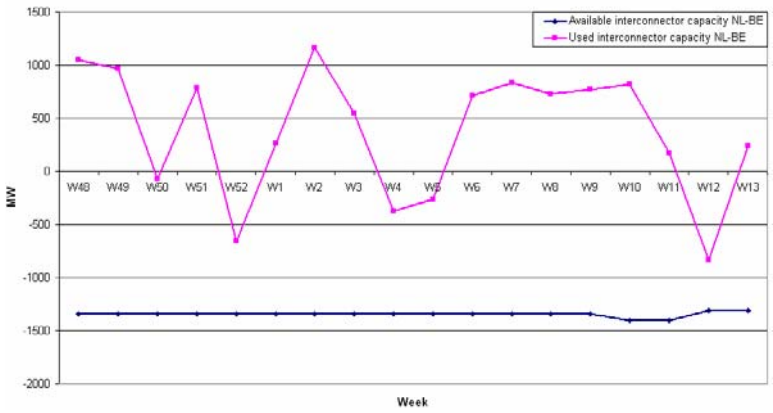


Figure 5 Utilisation Of The Capacity Of The Interconnector Between The Netherlands And Belgium For Week Peaks



Lessons Learned

The most significant variations between the forecasted remaining capacity (evaluation in September 2006) and the observed remaining capacity for the week and weekend peaks of the winter 2006-2007 were due to unexpected unavailability of generators and changes in the timing and duration of the maintenance of generators. Developments since the September forecast substantially reduced the time to assess the impact of unexpected unavailability of generators or changes in the maintenance of generators on the safety of the grid and on the available generation reserves in the Elia control area.

1.3 Czech Republic

Winter Outlook Prediction

The Winter Outlook Report 2006-2007 stated that CEPS did not expect any significant problems with balance during the winter period. Only in stressed circumstances might exports be reduced.

Winter Overview

Due to the higher than average temperatures last winter, one of the most significant risks – that of low values of remaining capacity during severe weather conditions – did not occur. The only period of operational conditions that were worse than expected was week 49 of 2006, with a high outage level of 2100 MW caused by the tripping of one 1000 MW NPP unit and coincidental outages of several smaller capacity units.

Demand

Because of the higher temperatures compared to the long-term average; over the whole period considerably lower values of load and consumption were observed than originally considered. For example electricity consumption in January 2007 was 9 % less than in January 2006, despite the trend in recent years of an annual 2.5 % growth in consumption.

Use of Interconnection

Mild winter weather conditions allowed the increase of exports in the day period of more than 2000 MW from the original planning estimate of 1100 MW. Because of extreme wind power generation in Germany, unfavourable cross-border load flows from VE-T network to CEPS occurred frequently over the whole period. The capacity deviations between planned and real measured values were many times higher than 1000 MW.

Remarkable Events

A violent windstorm/hurricane swept the Czech Republic territory overnight on 18th/19th January, causing considerable damage and a great deal of supply outages, especially in electricity distribution grids. The electricity load in the country in relation to CEPS' estimate was more than 1000 MW lower during that night. The CEPS transmission network remained undamaged and system operation was not affected.

1.4 France

Winter Outlook

The adequacy forecast study carried out in 2006 for the winter period showed that under normal conditions, the generation-load balance on the French system was not considered at risk for the coming winter. The real operating conditions were mostly better than expected, except during the last weeks of January. Significant events concerning lack of margins reduced drastically compared with winter 2005-06.

Winter Overview

The main risk factors identified were the sensitivity of load to low temperatures, unplanned outages and levels of inflows to hydro generating units. Temperatures were higher than normal except during the 2 last weeks of January. Meteo France declared that the winter 2006-2007 has been the hottest winter recorded in France for 50 years. Unplanned outages and hydropower generation stayed at a normal level during all the period. No unexpected risks occurred.

There were two remarkable events over the winter. The outage of the Cordemais coal power-plants caused a risk of low voltage in Brittany from December 8th to the end of January. Also, due to low temperatures the consumption level on January 25th nearly reached the record registered last winter.

Generation overhauls were realised as planned. The general level of unplanned overhauls and outages conformed to forecasted values. Hydropower generation was higher than expected due to favourable climatic conditions. Wind generation is not yet significant for generation-load balance in France.

Demand

Due to higher than normal temperatures, the consumption level was 7 % lower than during winter 2005-2006. The consumption level on January 25th (86,255 MW) nearly reached the record registered last winter (86,280 MW).

Transmission Infrastructure

The storm that affected northern France on December 8th caused the tripping of 4 extra-high voltage lines. On January 8th and February 20th, the tripping of an interconnection line between Spain and France caused exchange reduction.

In January, RTE opened the 225 kV Chooz-Monceau interconnection line, to replace the old Chooz-Jamiolle line, following the installation of a phaseshifter transformer at the Monceau substation in Belgium. This modification will make energy transfers between France and Belgium smoother. In February, RTE opened a 35 MVAR capacitor bank at the 90 kV substation at Val de Sèvre in the Deux Sèvres département, to boost voltage stability in Western part of France. In March, the 225 kV substation in Suisse entered service on the RTE network, connected to the Laneuveville – Saint Avold 2 line to supply the section of the LGV Est railway line running towards Strasbourg.

Use of Interconnection

Figure 6: Use of Interconnection In France

EXPORTS 469 transactions in progress at month end	December 2006 (GWh)	Trend compared with the same period in 2005	
		December	Since 1st January
Belgium	1 392	↗ 9%	↗ 33%
Germany	547	↘ -30%	↘ -18%
Switzerland	2 124	↘ -15%	↘ -1%
Italy	1 876	↗ 8%	↘ -9%
Spain	399	↗ 1%	↘ -10%
Great Britain	725	↘ -39%	↘ -4%
Total	7 063	↘ -10%	↘ -1%

IMPORTS 394 transactions in progress at month end	December 2006 (GWh)	Trend compared with the same period in 2005	
		December	Since 1st January
Belgium	265	↗ 96%	↗ 24%
Germany	2 014	↘ -35%	↘ -29%
Switzerland	230	↘ -61%	↘ -3%
Italy	1	↘ -100%(*)	↗ 20%
Spain	337	↗ 94%	↗ 148%(**)
Great Britain	396	↗ 347%	↗ 15%
Total	3 243	↘ -31%	↘ -13%

(*) In December 2005, imports from Italy reached 0.6 TWh.
(**) In cumulative terms for the whole of 2006, the volume of imports from Spain amounted to 2.3 TWh, compared with 0.9 TWh in 2005.

EXPORTS 426 transactions in progress at month end	January 2007 (GWh)	Trend compared with the same period in 2006	
		January	Since 1st January
Belgium	1 091	↘ -27%	↘ -27%
Germany	559	↗ 113%	↗ 113%
Switzerland	2 374	↘ -4%	↘ -4%
Italy	1 935	↗ 104%	↗ 104%
Spain	769	↗ 40%	↗ 40%
Great Britain	745	↘ -28%	↘ -28%
Total	7 473	↗ 10%	↗ 10%

IMPORTS 380 transactions in progress at month end	January 2007 (GWh)	Trend compared with the same period in 2006	
		January	Since 1st January
Belgium	275	↘ -10%	↘ -10%
Germany	1 830	↘ -29%	↘ -29%
Switzerland	172	↘ -75%	↘ -75%
Italy*	2	↘ -99%	↘ -99%
Spain	122	↗ 26%	↗ 26%
Great Britain	357	↗ 120%	↗ 120%
Total	2 758	↘ -33%	↘ -33%

(*) In January 2006, imports from Italy reached 277 GWh.

EXPORTS 431 transactions in progress at month end	February 2007 (GWh)	Trend compared with the same period in 2006	
		February	Since 1st January
Belgium	806	↘ -26%	↘ -27%
Germany	836	↗ 424%	↗ 230%
Switzerland	2 050	↘ -8%	↘ -6%
Italy	1 743	↗ 65%	↗ 83%
Spain	618	↗ 71%	↗ 53%
Great Britain	576	↘ -14%	↘ -22%
Total	6 629	↗ 19%	↗ 14%

IMPORTS 384 transactions in progress at month end	February 2007 (GWh)	Trend compared with the same period in 2006	
		February	Since 1st January
Belgium	203	↘ -49%	↘ -32%
Germany	867	↘ -62%	↘ -45%
Switzerland	118	↘ -90%	↘ -84%
Italy*	2	↘ n.s.	↘ n.s.%
Spain	148	↘ -24%	↘ -7%
Great Britain	254	↘ -2%	↗ 45%
Total	1 592	↘ -66%	↘ -51%

(*)The volume of imports from Italy was 381 GWh in February 2006. In cumulative terms since the beginning of 2007, the volume of imports from Italy amounts to 4 TWh, compared with 658 TWh in 2006.

EXPORTS 440 transactions in progress at month end	March 2007 (GWh)	Trend compared with the same period in 2006	
		March	Since 1st January
Belgium	1 107	↘ -22%	↘ -25%
Germany	558	↗ 28%	↗ 128%
Switzerland	2 307	↘ -3%	↘ -5%
Italy	1 935	↗ 33%	↗ 62%
Spain	761	↗ 196%	↗ 84%
Great Britain	813	↘ -30%	↘ -25%
Total	7 481	↗ 5%	↗ 11%

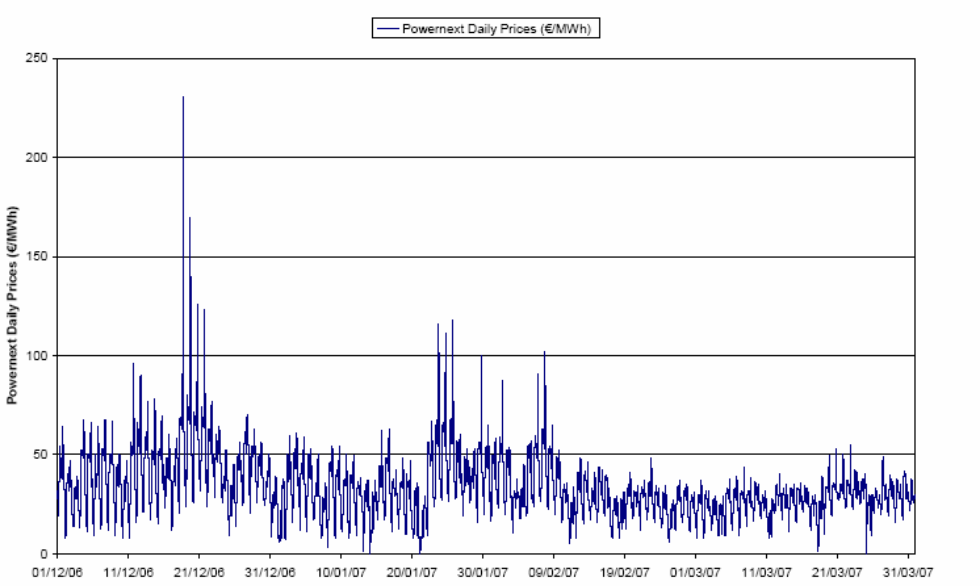
IMPORTS 391 transactions in progress at month end	March 2007 (GWh)	Trend compared with the same period in 2006	
		March	Since 1st January
Belgium	135	↘ -52%	↘ -38%
Germany	1 401	↘ -40%	↘ -43%
Switzerland	178	↘ -83%	↘ -84%
Italy*	1	↘ n.s.	↘ n.s.
Spain	157	↘ -57%	↘ -35%
Great Britain	124	↗ 21%	↗ 40%
Total	1 996	↘ -57%	↘ -53%

(*)The volume of imports from Italy was 505 GWh in March 2006. In cumulative terms since the beginning of 2007, the volume of imports from Italy amounts to 5 GWh, compared with 1163 GWh in 2006.

The maximum of export balance of physical exchanges was 12,455 MW on March 13th and the minimum was – 439 MW (import) reached on January 25th.

Market Conditions

Figure 7: Powernext Daily Prices



The maximum day-ahead hourly price peak was registered on December 18th and was due to low temperatures in France.

Lessons Learned

Winter 2006-2007 confirmed the brittleness of regional generation-load balance in Brittany. The comeback of a mothballed power-plant at Cordemais is planned before the forthcoming winter. It will decrease the risk factor in this area.

1.5 Germany

Winter Outlook
No critical situation was forecasted for the winter period.

Winter Overview
No critical situation was observed in terms of covering the load. In the case of high wind energy feed-in, increased application of re-dispatching measures has been necessary, especially during periods of low demand.

Remarkable Events
The disturbance of 4th November 2006 led to wide disruption on the UCTE system but was not associated with system adequacy; see final UCTE report on the UCTE Web site[2].

The wind storm Kyrill of 18th January 2007 (6.05 p.m. – 9.32 p.m.): Widespread line tripping in the 380 kV and 220 kV transmission network attributable to severe damages to overhead line pylons which were caused by the wind storm Kyrill. The damages occurred within 5 areas. As a result, the network availability for the transformer substations in the Magdeburg area was temporarily interrupted. Immediately after the recording of the damages, their elimination was initiated. Due to provisional solutions regarding the lines, network stability could be restored by 23rd January 2007 to meet the requirements of demand. The entire removal of damages is likely to be finalized by the end of May 2007.

After introduction of the D-CH dynamic adjustment of the C function, there were no longer any remarkable network problems observed in 2006.

Generation
An extremely high average wind energy feed-in (between 1.5 times and 2.5 times as much as during the same period of the preceding year) was recorded from November 2006 to March 2007.

Transmission Infrastructure
The KONTEK DC link between Germany and Denmark was out of operation from 31st December, 6.05 a.m., to 12th March, 6.00 a.m. due to the damage to the 380 kV submarine cable caused by an anchor.

The substation Niedervieland with two transformers of 380/110 kV, 350 MVA each, was commissioned in October. It is connected to the 380 kV line Ganderkesee- Dollern.

The substation Alfstedt with one transformer of 380/110 kV, 300 MVA, was commissioned in March. There is a Y-connection to the 380 kV line Niedervieland – Dollern.

The upgrade of the former 220 kV substation Kriegenbrunn to 380 kV was completed in November 2006. It was equipped with a second transformer of 380/110 kV, 300 MVA. The 220 kV line Kriegenbrunn-Redwitz was upgraded to 380 kV.

Major network reinforcement measures were finalised in the Northern grid with a view to improving transmission capabilities on the transmission corridor Audorf-Dollern-Landesbergen

[2] http://www.ucte.org/pdf/publications/2007/final-report-20070130.pdf

Use of Interconnection

Basically, the interconnecting lines towards VE-T/PSE-O and VE-T/CEPS were never fully loaded. Only during the UCTE disturbance on 4th November 2007, the load on these lines exceeded the nominal value for a short period (see Final Report of 30th January 2007). Over the whole period under consideration, imports towards Germany were nominated for these interconnecting lines. As the capacity demand is higher than the calculated potential transmission capacities (NTC) according to the ETSO method, capacity allocation for the market is carried out through a licensed auction procedure in several time slices.

Market Conditions

There was a short term increase in minute reserve prices after introduction of the common minute reserve platform.

Lessons Learned

Frequent application of re-dispatching measures is necessary during periods of strong wind.

1.6 Greece

Winter Outlook

For the winter 2006-07 it was considered that the adequacy and security of the Greek Interconnected System was not threatened, taking into account the available import capacity of the Interconnections. The most critical period was considered to be December and January. Nevertheless, under normal conditions the operating criterions of HTSO were expected to be met, thanks to a certain volume of imports considered firm. Under severe conditions imports are mainly the means by which demand would be met. If necessary additional measures could be applied, such as modifications to the planned outages of units.

Winter Overview

One risk that was noticed was the small storage of the water in the dams due to lack of rain. The results of the above may be felt in the summer season, which is the season with the maximum demand of the year. There were no severe conditions during the last winter. All the maintenance work schedules on the grid and the units were realised.

Generation

Concerning generation, all procedures followed the schedules except for two generation units (Lavrio 1, Aliveri 3 total capacity 280 MW) which were out of operation due to severe disturbance the first and maintenance and repair the second.

Wind conditions were at a typical level during this winter. The establishment of new wind parks mainly in the south region reinforce the amount of production. The maximum wind production was 410 MW on 24th January. The generation capacity of wind parks in the Interconnected System today is 552 MW (January 2007), with a significant increase of wind production expected in the following years.

At present, the stored energy in the hydro electric power plant reservoirs is at an extreme low level, mainly due to the severe draught period the last few months in conjunction with reduced, with respect to the previous years, imports from the neighboring Balkan countries. One of the main reasons of reduction of total production in the Balkan area was the shutdown of the two nuclear power units in Bulgaria (Kozlodui 880 MW).

Demand

Table 1 gives below the values of net monthly peak load (forecasted and realised), clearly demonstrating that the realised values were lower than those forecasted.

Table 1: Net Monthly Peak Load

	NET MONTHLY PEAK LOAD (Average values per hour in MW)			
	DECEMBER	**JANUARY**	**FEBRUARY**	**MARCH**
Forecasted	8851	8717	8606	8052
Realised	8347	8500	8182	7917
Difference	504	217	424	135

The reason for this reduction of peak load between forecasted values and realised is mainly the very mild winter conditions. The temperature was always above zero degrees and most days the weather was sunny and the humidity was high. As in the previous winter, the system successfully met the high demand for electricity maintaining an excellent level of power quality, and especially of voltage.

The peak net electricity demand (excluding pumping loads) for the interconnected system in the winter amounted to 8500 MW on Friday 5th January at 18:00 (CET), which is a 1.8 % decrease compared to the previous year.

In the last winter there was no need to select resources from the demand side response.

Transmission Infrastructure

The OHL 150 kV Meliti (HTSO/Greece) - Bitola (MEPSO/FYROM) is continuously out of operation due to upgrade works. The upgrade works of the interconnection line aim at the future upgrade from 150 kV to 400 kV. Works started on 26th February 2007 and will last until the end of May 2007.

Temporary radial connection of an isolated generation island in Turkey to the Greek Interconnected System is under study. The purpose of this temporary radial connection is to cover urgent and unexpected load-generation power balance needs of the Greek power system in a time period during which no significant increase of the conventional generation capacity is foreseen in our system.

Use of Interconnections

The Greek system continuously used all amount of capacity (NTC) from the neighbouring countries and incoming direction.

Market Conditions

New auction rules concerning the capacity allocation (in full compliance with Regulation 1228) were introduced in the first ten days of January 2007 with all north neighbouring TSOs. With TERNA there will be a joint explicit auction (yearly, monthly and daily). With north neighbours there will be explicit auctions based on a 50/50 principle with the Bulgarian TSO and 100% with FYROM and Albanian TSO´s.

Table 2: Maximum And Minimum SMP Values

	MAX and MIN SMP (prices in € / MWh)			
	DECEMBER	**JANUARY**	**FEBRUARY**	**MARCH**
Max	85,00	79,07	79,06	78,40
Min	33,65	36,31	36,31	32,84

Remarkable Events

During the winter 2006-07 no problem was observed in the energy system of Greece, except the lack of rain influencing the hydroelectric production. The level of the voltage on the grid was in range as a result of the infrastructure that had been installed during last years.

During the winter period January until middle February, there was a lack of energy in the Balkans. The lack of energy resulted in very low auction capacity values at the Greek north borders. At this time it was noticed that basically all the available energy at the SEE region, with production from Romania, was taken by Albania. The traders at the Greek north borders got the capacity right but did not use it.

After the middle of February, due to the reduction of the loads in the majority of the countries in the SEE region, there was more energy available and as a result of this the auction price at the Greek north borders increased considerably. The traders at the Greek north borders then used their capacity rights and imported energy to Greece.

Lessons Learned

The key for the forthcoming winter will be the weather conditions because after the summer season (summer is the season with maximum demand in Greece) the present level of hydro storage lakes is expected to fall furthermore. After this situation we expect a winter season with a lot of rain, so to store enough water to complete the production capacity during the forthcoming summer.

1.7 Hungary

Winter Outlook

It has been the situation for some time that an adequate margin can only be guaranteed on the Hungarian power system with a considerable amount of imports. The only limitations on interconnection capacity are due to high transit flows. Critical factors for winter 06-07 were considered to be the availability of fuel (natural gas in the first place), availability of generation capacities in a few large power plants and uncertainties in the operation strategies of intermittent generators.

Winter Overview

Due to the unusually mild winter, demand never exceeded a normal level. Fuel supply was not an issue either. Considerable changes happened in the market of electric energy in the region. Contracted imports to Hungary fell from 1100 MW to under 500 MW from January. The reason is the decommissioning of nuclear units in Bulgaria and Slovakia, and resulting price changes. As it had been expected, March proved to be tight, because of starting the maintenance of large generating units. However, the Hungarian power system remained safe during the whole period.

Generation

Planned maintenance of generation units in March decreased remaining capacity near to the minimum requirement. It gradually happened that overlapping forced outages made the last week of March very tight. Fuel supply was not an issue this winter.

Demand

Due to the unusually mild winter, demand was near a normal level all the time. Balance between demand and supply was continuously undisturbed.

Use of Interconnection

The Hungarian power system relies on imports considerably. The peak import fell from 1100 MW to 500 MW from January 2007, mainly due to economic reasons.

Market Conditions

Domestic generation replaced a large portion of import, as price differentials decreased. This caused no serious risk during this winter, except for March.

Lessons Learned

The price level and liquidity of the electricity markets are volatile. Hungary relies on imports of electric energy considerably. Although this is true mainly between spring and autumn, rather than in winter, the risk must be handled.

1.8 Italy

Winter Outlook

The adequacy evaluation for the 2006-07 winter period did not indicate any particular risks for capacity adequacy and peak load cover. Specific analysis performed to evaluate energy adequacy identified an increasing trend in gas consumption in the thermoelectric sector, which makes the support of interconnectors increasingly important.

Winter Overview

A very mild winter season with temperatures over the average has marked the winter period, with sensible decreasing of the demand in comparison to the previous year. In addition low hydro conditions marked this part of the year: values below the multi-year average capability factor were recorded, confirming a winter of scarce rainfall. Last winter was then characterised by little snow and short water reserves, causing some restrictions to the use of power plants located in the area close to the River Po.

Generation

Generation availability over the winter was not affected by planned maintenance. Wind power and thermal plants generation increasing over 800 MW, while the hydro generation plants remain steady.

Demand

During this period due to a fairy mild climate the demand in terms of both load and energy requirements was low. The record power peak normally reached in winter was not exceeded in this period. Over this period the monthly consumption as compared to the same period decreased sensibly.

Transmission Infrastructure

The new line Matera-S.Sofia 380 kV on the south of Italy has been put into operation. This very important connection addresses the previous congestions and increases the flows of energy. Other new lines and devices were put in service with reinforcement of the transmission network.

Use of Interconnections

With respect to the reductions predicted, in terms of physical flows the interconnection recorded a very high increase of import/export balance of energy during the period. Interconnections are a way to maintain the system security and share part of the reserve with the other union countries, then during the winter period has permitted the balance of the sensible decreasing of internal production.

Market Conditions

As a consequence of the decrease in demand, mainly due to the weather conditions during the winter, the volumes of purchases in Italy have been decreased over the period.

The national single price (PUN) on the stock exchange decreased in respect of the previous year. For instance in the first quarter of 2007 the average national single price (PUN) was 69,18 €/MWh, with a decrease of 10,9 % in respect of the first quarter of 2006. The average purchase price (PGN) also decreased over the period in respect of the previous year, with differing trends among the Italian zones: in the North Zone, the average purchase price was lower than in the South zone over the period. National production decreased also while net importation increased.

Remarkable Events

A very dry period with scarce rainfall and consequent low filling of the reservoirs and low level of the rivers puts at risk this source of production for the next months, especially for the next coming summer season. This risk is particularly high for the power plants located in the north area close to the River Po. As a consequence of this situation, TERNA could be forced to suspend electricity supply to interruptible customers.

1.9 Luxembourg

Winter Outlook

Due to the special situation of the two grids in Luxembourg, an industrial grid and a public grid, and the fact that the major part of energy is imported, the TSO considers that there was no risk of problems over the winter.

Winter Overview

No problems were expected over the winter. As the average temperature was higher than normal winter temperatures, the risk of problems was further reduced.

Remarkable Events

The most remarkable event over the winter was a storm on the 18th January, but at no time during this storm was there any special risk.

Generation

The overhaul of thermal plants, scheduled in weeks 10 and 11 of 2007, have been deferred to week 16. This did not cause any problems, neither in weeks 10/11 nor 16.

Demand

As the weather was very mild compared to the former winters, consumption and peak load did not reach historical values.

Use of Interconnection

During the considered period, the interconnection capacity with Germany was reduced during some weeks due to planned maintenance works on the lines. The work was coordinated with the neighbouring TSO and there were never any bottlenecks on the transmission lines.

1.10 The Netherlands

Winter Outlook
The balance was not considered at risk for the winter 06/07.

Winter Overview
No significant deviations from forecasts were observed. Wind energy transits over the TenneT grid were lower than forecasted. Load was foreseen as 16,3 GW and in reality was 16,2 GW. The absolute peak during the winter period was on December 20th and reached 16,5 GW.

Interconnectors
The import capacity from Germany was reduced in the scope of operational measures in case of high wind energy generation in Germany and related transits during 45% of the time. The transits over the network of TenneT TSO could reach then such size that security margins would be exceeded.

In the weeks 2 until 5 2006 one of the interconnectors with Germany (Hengelo Gronau) was out of service for maintenance, but no special events were observed.

The market coupling with Belgium and France which started in November 2006 performed in a good way.

Lessons Learned
Reduction of import/export capacity as a consequence of high wind energy generation in Germany and resulting transits over the Dutch grid should be evaluated on its effectiveness.

1.11 Poland

Winter Outlook

Generally the Polish system balances well under normal conditions. The Winter Outlook Report considered the strong previous winter (05/06) and the growth of demand lasting all year, resulting in an increase in forecasted demand. It was assumed that outages of thermal power stations would increase during exceptionally cold periods. A dry and hot summer and autumn had reduced the level of water in the rivers and if this had been followed by a frosty winter then it may have resulted in the lower availability of river hydro power stations and may have caused some problems for thermal power plants.

Winter Overview

There were no critical periods in the Polish power system over winter 06/07. The most unexpected risk was the Kyrill wind storm on January 18th/19th.

Generation

All overhauls were realised according to the plan. The level of these overhauls was higher than the level given in the Winter Outlook Report, because the Polish TSO introduced these changes to the yearly coordination plan after the Winter Outlook Report was completed. Most outages were at the expected level, the exception to which can be observed on January 3rd with the outage of the biggest generating unit in Kozienice Power Station of 500 MW. The Kyrill wind storm had no influence on generation conditions.

Demand

January was forecasted by PSE-Operator as the period with the biggest demand (for both normal as well as severe weather conditions), but the forecast was not realised due to the mild weather. The peak actually occurred in December and the average monthly demand was at about the same level for December and January.

Use of Interconnection

In the case of the synchronous parallel operation with UCTE, the Polish TSO observes the decrease of exports every month. Referring to no-parallel operation there have been no real flows on the PL-BY interconnection since January 2007. This connection, as well as the PL-SE DC-link, is a commercial interconnection.

Market Condition

There was no special fluctuation of the prices during the winter season 2006/07 on the Polish balancing market. The average selling price amounted to about 39 €/MWh and the average buying price amounted to about 21 €/MWh (in Poland a double price system is used).

Remarkable Events

The most remarkable event was the Kyrill wind storm which took place in the night of January 18th/19th 2007. Strong wind caused the switching off of 28 elements of the transmission system (8 x 400 kV lines, 18 x 220 kV lines, 2 x 220/110 transformers). There was no energy not supplied at the transmission level. For the distribution network ≤110 kV load not supplied reached 2500 MW at midnight.

1.12 Portugal

Winter Outlook

The winter outlook showed some reduced power margins, affected namely by unavailability due to the works needed for compliance with the directive 2001/80/EC, if the possibility of imports are not considered and predicting a dry hydro situation. Favourable hydro conditions would increase the remaining capacity.

Winter Overview

The eventual risks identified depended on the conjunction of some factors with low probability of occurrence - low temperatures (corresponding to a peak demand with a probability of being exceeded of 1%) and a very dry scenario. These conditions associated with a reduced wind production didn't occur, so the margins remained comfortable during all winter.

Generation

In January, the planned unavailability in the coal units began, due to the works needed for compliance with the directive 2001/80/EC. In the thermal power generators other abnormal overhauls did not occur. The hydro inflows were situated above the average values with the exception of January when the inflows were much reduced, namely in the run-of-river power stations.

Demand

The demand was within the expectations. In the coldest periods, with the exception of the end of January, the temperatures remained above the normal values. The only relevant peak period occurred in the end of January (week 5) when the temperatures were the coldest of the winter, but without provoking very abnormal peaks (only 1% above the previous year peak).

Transmission Infrastructure

On the 4th November, in the sequence of the strong disturbance affecting the UCTE grid, the Portuguese system was included in an area with a deficit of generation, so that load-shedding was activated by the TSOs in order to produce a fast and effective reduction of the power imbalance and in such a way stabilize the frequency which had fallen to 49 Hz. The total of the load-shedding in the area surpassed 17 GW, our own contribution exceeding 1100 MW.

The behaviour of the Portuguese generation units in this incident was not entirely satisfactory, as shown by the fact that a significant amount of generating units tripped, therefore increasing the imbalance between demand and supply. However a fast and efficient mobilization of available reserve allowed our contribution, for the related deficit zone, to reach nearly 500 MW about three minutes after the incident.

This winter the transmission infrastructures were reinforced with two new substations, Portimão (150 kV) and Paraimo (400 kV) and 300 km of new lines of 400 kV, 220 kV. and 150 kV.

Use of Interconnections

The interconnections maintained the capacities similar to the previous winter, about 15% of the Portuguese peak, contributing to maintain the reserve margins in comfortable levels. This winter the import balance contributed with 7% of the Portuguese consumption.

1.12 Romania

Winter Outlook

The generation-consumption balance was considered equitable. The installed capacities were considered able to ensure the coverage both of the consumption and of the eventual export requirements.

Winter Overview

The winter 06/07 has been distinguished for the whole of its interval by an average temperature level greater than the normal temperature. Especially in January and February 2007 higher positive deviations were reached in contrast with the normal temperature level. Consequently the weekly peak load values recorded were lower than the forecasted ones and led to a higher remaining capacity. As a result there was not any risk or critical periods for Romanian power system operation and interconnections as well.

Generation

There were more generation units in maintenance than it was planned for each forecasted interval. The approval of the additional generation in overhauls was done on monthly basis, taking into account the network topology and the updated forecasts. The additional overhauls did not influence the coverage of internal consumption, system services reserves or even the export requirements taking into account the NTC values.

For the whole winter interval the amount of the system services reserves was fulfilled completely regarding the values specified in the contacts between Transelectrica and the qualified producers. The frequency was maintained by the primary control and secondary control responses within the standard range specified by the Romanian Grid Code rules.

Always when a monitory units tripping occurred in the interconnected UCTE system, the K factor value of the Romanian Power System was more than the corresponding value of Romania.

Demand

The December consumption values were very close to the predicted values, but for January and February the consumption values represented between 87% - 94% from the forecasted ones due to weather conditions which did not meet severe or even normal level in this cold season.

There is a regulatory framework regarding the load reduction, but in despite of this there is no request to license the consumers yet. However in the last winter there did not exist critical intervals which could have required such kind of resolution on behalf of Romanian TSO in order to maintain both generation-consumption balance and the safety system operation.

Transmission Infrastructure

During the last winter several transmission lines were tripped by protection device actions but the safety system operation was not jeopardized because these outages were checked before through N-1 criterion by daily programming. The reserves on the Balancing Market were used in January in order to remove an internal congestion caused by the bad weather conditions.

Taking into account its “Long Term Development Plan for the Electricity Transmission Grid”, Transelectrica has an ongoing process in order to modernize or rehabilitate its installations. During the winter 2006-2007 there was put in operation two new transformer units (1 transformer 400/110 kV and 1 autotransformer 220/110kV) and the first reinforced diameter in 400kV NPP Cernavoda substation)

Use of Interconnections

For the interval November 2006 - March 2007 the export amount was 3177 GWh and import amount was 1251 GWh. There was no lack of generation or system reserves which could have required any import activities through the interconnection lines.

Market Conditions

During the winter period (November 2006 – March 2007) the market share of the Balancing Market has an average value of nearly 7% from total consumption, very close to the value for the Day Ahead Market. For November and December 2006 the trade volumes on the Balancing Market were high, due to physical notifications in high imbalance and low hydro flows. The traded volumes in the first three months of 2007 were smaller, both for balancing and for congestion management. Only in January we had a bigger trade of energy for congestion management due to some transmission lines tripping, caused by bad weather conditions.

Concerning prices on the Balancing Market, the Regulatory Authority has imposed some price caps, which until December 2006 were maximum 60 EUR / MWh, 85 EUR / MWh or 88 EUR / MWh (depending on fuel) for UP regulation and minimum 9 EUR / MWh for DOWN regulation. Beginning December 1 we apply a new rule concerning the price caps: the maximum price for UP regulation is 106 EUR/ MWh and the difference between the maximum and minimum price offered daily by a dispatchable unit cannot be higher than 18 EUR / MWh.

On the Ancillary Services Market, reserves were mainly insured through bilateral contracts, otherwise by auctions.

Remarkable Events

The main event was the major disturbance occurring in the interconnected systems on November 4th 2006 when the UCTE system was split in three areas with three different frequencies. The Romanian Power System remained inside the 3rd Area (the South East part) beside the power systems of Bulgaria, Greece, Serbia, Albania, Croatia (East part), Montenegro, FYROM, Bosnia & Herzegovina and Hungary (South part).

At 22:10 (CET) the 400 kV line Arad(RO)-Sandorfalva(HU) tripped in 400 kV Arad substation. At the same time the 400 kV line Rosiori(RO)-Mukachevo (UA-W) tripped in 400 kV Mukachevo substation. The operation with different frequencies of the two Power Systems of Romania and Ukraine was found out by the dispatcher on duty. At 22:16 hours the 400 kV line Arad - Sandorfalva was connected on 400 kV Arad substation. In fact by this putting in operation it was obtained a new link inside of 3rd Area. The resynchronization between the central area and the South-East area was done by connecting of the 400 kV line Rosiori-Mukachevo in 400 kV Mukachevo substation at 22:50 hours.

1.14 Slovak Republic

Winter Outlook

The power balance in normal conditions was not considered risky. The import/export contracts may have had some influence but they were not known at the time the winter forecasts were made. In the case of severe conditions week 5 was considered tight and the UCTE Adequacy Reference Margin was not met in January or February.

Winter Review

The forecast of winter 2006/2007 showed surplus of capacity through the whole analysed period. Warm weather pressed down expected load. Consumption was also much lower than expectations. Such unusual winter conditions influenced usage of ancillary services (especially in January and February). We can say that the operation of the power system was smooth and non-problematic this winter.

Winter 06/07 was extremely warm. During this winter the average temperature was 5.9 °C higher than in previous winter.

Table 3: Average Monthly Temperatures (°C)

	2005	2006	Difference
December	-0,4	1,8	2,2

	2006	2007	Difference
January	-4,5	3,7	8,2
February	-2,4	4,1	6,5
March	1,5	8,2	6,7

Warm weather had an impact on consumption and load. The forecast predicted consumption 2.4 % higher than in the winter 2005/2006. But the reality showed a decrease of consumption 3,8 % versus previous winter. Also the load of the power system was from 150 to 200 MW lower than predictions. The load was about 3.5 % lower versus predicted values.

Table 4: Recorded Monthly Peaks (MW)

	2005	2006	Difference
December	4 346	4 290	-56

	2006	2007	Difference
January	4 423	4 198	-225
February	4 347	4 136	-211
March	4 136	4 041	-95

Generation

As of 31st December 2006 one nuclear unit (440 MW) was decommissioned and two more conventional thermal units (220 MW in total) were shutdown from the start of 2007. Naturally it has an influence on the power balance of Slovakia. The share of nuclear production decreased about 3%. In the period January - March, an increase of hydro production was recorded - increase of the share of the total production from 11.2% previous winter to 16.6 % this winter.

The shutdown of nuclear units also influenced cross-border exchanges. The Slovak Republic was permanently exporting from the year 2000. But in January we imported 92 GWh (3.4 %

of consumption). In February there was an export only 8 GWh, and in March we exported 168 GWh (6 % of production).

Use of Interconnections

The long-term observation of the electricity flows through the transmission system of Slovakia shows imports from the Czech Republic and Poland on one side and exports to Hungary and Ukraine on the other side. Such that from the North - West to the South - East. Those directions were also confirmed this winter with the following modifications. Higher exchanges with the neighbouring TSOs were measured. Monthly data of electricity exchanges show that:

- Import from CEPS increased 2.5 times
- Export to MAVIR increased about 20 - 40 %
- Export to WPS increased about 40 - 80 %
- No remarkable modifications of exchanges with PSE-O

Modifications of exchanges were mainly due to the change of the power balance (shutdown of units) and also behaviour of market players had some impact. Despite increased usage of tie-lines no overload was recorded and load flows of individual tie-lines were within the safety limit.

Network Reinforcements

Reconstruction of 400 kV substation Krizovany during all the year.

Two 220 kV substations Lemesany and Senica were put into remote control from the 1st July 2006. Another two 400 kV substations Horna Zdana and Podunajske Biskupice were put into remote control from the 1st August 2006.

Two new transformers 400/110 kV were put into operation in December 2006, each one 350 MVA. One transformer was installed in the substation Lemesany and the second transformer in the substation Krizovany. Also two new choke coils were installed with each new transformer (total 4 x 45 MVAr).

1.15 Spain

From the point of view of system adequacy, the load – generation balance was not at risk during last winter 2006/2007 in the Spanish System.

Real demand values were lower than expected (System Adequacy Forecast) because the average temperature in the studied period was lower than average. In fact weather conditions were pretty mild except at the end of January. The winter peak load was lower than two years ago (maximum historical value).

From the point of view of generation, hydro conditions were almost average. Because of that, hydro generation contributed to available capacity more than expected in Winter Forecast (Winter Outlook Report). Regarding thermal plants behaviour, available thermal capacity was similar to forecasted values in terms of overhauls and outages. Wind generation variation was extremely high during the winter: the minimum recorded value was 25 MW on February 4th and maximum recorded value was 8,375 MW (new maximum historical value) on March 19th. Installed capacity is about 11,500 MW.

In terms of physical flows, the Spanish System had an export balance during the last Winter 2006/2007.

1.16 Switzerland

Winter Overview

The most critical winter periods were the following:

- During the nights, when the production of inland hydro power plants was low and the transits through the Swiss transmission network were high; and
- On working days between 7 a.m. and 8 p.m., when the production of inland hydro power plants was high.

However, this is a usual power flow pattern of the Swiss transmission network and it was not forecasted as critical in the Winter Outlook Report, because it can be successfully managed by NTC and other operational procedures.

Unexpected Events

There are unintentional (unexpected) transits through the Swiss transmission network that result in overload within the scope of (n-1) security analysis. This occurs despite the reductions undertaken within the scope of NTC procedures.

Generation

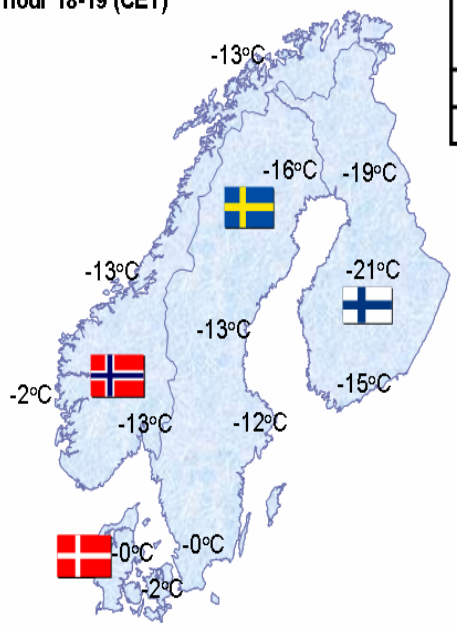
The Swiss TSO does not dispose of this sort of information, because as a TSO we don't have the insight in the activities of the Swiss electricity producers. However, if there had been significant events of high impact, we would have heard of them. Therefore, we assume that the actual conditions were on the average or close to the average level.

Demand

The data concerning the demand during the last winter will be delivered by the Swiss Federal Office of Energy, but only in summer 2007. The Swiss TSO does not see the whole Swiss load, because there is a lot of hydro production on the lower voltage levels (up to 40% on working days). Nevertheless, the impression is that the load was not extraordinarily high. As stated in the Winter Outlook Report, severe load conditions are expected only in very low temperatures, but that was not the case during the last winter.

2 Nordel Area

Temperatures on 21 February 2007 hour 18-19 (CET)

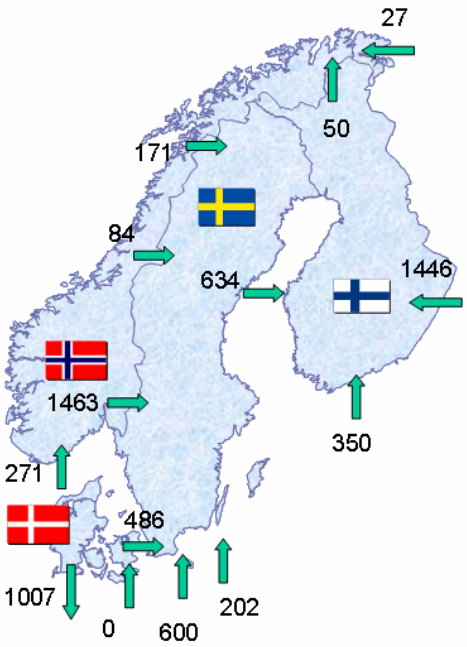


NORDEL	Prognosis (10 year winter)	Peak load 21.2.07 hour 18-19 (CET)	Margin
CONSUMPTION (C)	72 300	67 790	4 510
PRODUCTION (P)	73 300	66 280	7 020

	Prognosis (10 year winter)	Nordel peak load 21.2.07 hour 18-19 (CET)	National peak load (CET)	
Finland				
C	15 000	14 270	14 960	08.02.2007 hour 6-7
P	13 120	11 930	12 200	
Sweden				
C	28 550	26 100	26 100	21.02.2007 hour 18-19
P	28 900	23 150	23 150	
Norway				
C	24 070	21 430	21 430	21.02.2007 hour 18-19
P	22 900	22 830	22 830	
Eastern Denmark				
C	3 000	2 490	2 650	24.01.2007 hour 17-18
P	3 030	3 100	2 580	
Western Denmark				
C	4 540	3 500	3 740	24.01.2007 hour 17-18
P	4 160	5 270	4 130	

The data are collected from each country

EXCHANGE AT PEAK LOAD ON 21 FEBRUARY 2007 (18-19 HOURS, CET) [MWh/h]



2.1 Denmark

Winter Overview

The winter started with relatively high temperatures, mild weather, much wind and high market prices causing high productions on the power stations and wind mills. The high market prices were primarily caused by low levels of water in the reservoirs in Norway and Sweden. The winter ended with more normal conditions. The generation mix in Denmark is thermal (86%) and wind (14%).

Remarkable Events

The Skagerrak 3 HVDC-connection between Norway and Jutland was out of operation until the end of November due to a transformer failure on the Norwegian side, halving the transmission capacity between Norway and Jutland.

The KontiSkan HVDC-connection between Sweden and Jutland has had reduced capacity. This will last until autumn of 2007 when the transmission grid in Northern Jutland will be expanded.

The Kontek HVDC-connection between Zealand and Germany was out of operation between 31st December 2006 and 12th March 2007 due to a cable fault blocking the power trade between Germany and Zealand.

On 1st January 2007 surplus production occurred in West Denmark. Disconnection of decentralized power stations and wind power plants was necessary. Productions on the central power stations were reduced to minimum. The connections towards Norway and Sweden were fully utilized. It was not possible to export more to Germany because of the same conditions there.

A line fault in the West Coast corridor on Sweden 20th January 2007 stressed the need for downwards regulating power in Denmark to decrease the export to Sweden and in this way contribute to the necessary reduction of the load on the remaining line in the West Coast corridor.

Demand

Peak load for the winter in Denmark West was 3739 MWh/h and occurred 24th January hour 17-18. In Denmark East it was 2654 MWh/h on 25th January hour 17-18. The temperatures were in both cases slightly below zero. The all time high in Denmark West is 3755 MWh/h at 4th January 2006 hour 17-18 and in Denmark East 2688 MWh/h at 24th January 2006 hour 17-18

Severe weather conditions on 24th February 2007 caused galloping of a number of lines in the transmission grid without interrupting the supply to the lower level grids.

Lessons Learned

The handling of high productions from the wind power plants requires good flexibility in regulating reserves and strong connections to neighbouring areas also with flexibility, especially in Nordel.

2.2 Finland

Winter Overview

The winter period started with relatively high temperatures and low hydro reservoir levels in the Nordic market area. The winter in Finland ended with more normal winter conditions although the winter was exceptionally short. The production capacity in Finland is a mixture of nuclear, hydro, CHP industrial, CHP district heating and condensing power, each representing 20...25%.

Remarkable Events

A total of 26 terawatt hours of electricity was consumed in Finland during the first three months of 2007. This was 1.9 % less than during the corresponding period in 2006. In the winter period, electricity transmissions between Finland and Sweden consisted mainly of imports to Finland.

The Fenno-Skan 550 MW cable was damaged at the beginning of December 2006, restricting the transmission capacity between Finland and Sweden until February. The cable was brought back to commercial operation on 13th February 2007.

The Estlink 350 MW connection between Finland and Estonia was commissioned for commercial operation in early January. This cable connection has been used for importing electricity into Finland. Almost a full volume of electricity was imported from Russia during the winter. Maximum import capacity from Russia to Finland through 400 kV connections is 1400 MW.

Fingrid used for the first time the production capacity based on the Power Reserve Act to secure the power balance. Fingrid's systems worked as planned throughout the cold period.

With the exception of the failure of the Fenno-Skan submarine cable, the transmission grid did not experience any other significant faults affecting the transmission capacity.

Demand

An all-time record was reached in electricity consumption in Finland during the period of cold weather in week 6, when the peak consumption was more than 14,800 MW. Almost all electricity production capacity in Finland was in operation, and no significant problems were encountered in electricity production.

Lessons Learned

During peak load Finnish power balance relies very much on imports from Russia, Estonia and Nordic countries. In the next few winters the balance will become even tighter, if winters are very cold. Before commissioning of the new nuclear unit in Olkiluoto, the periodic arrangement Power Reserve Act will help secure the power balance.

The cooperation between TSOs control centre and operations people to manage power shortage situations is also very crucial and will therefore they will be trained annually.

2.3 Norway

Winter Overview

The production in Norway is almost 100 % based on hydro. The winter 06/07 started with extraordinarily low reservoir levels. The main reason for this was less amounts of snow than normal in the mountains during winter 05/06 followed by a dry summer. From July on, it was an increasing focus of the energy balance, especially in the south and the middle of Norway. Under such deficit conditions Norway depends strongly on imports from Sweden and Denmark.

Remarkable Events

Some major events contributed negatively. One HVDC link (500 MW) between Norway and Jutland suffered a severe transformer failure in July (back in function late Nov.). The import possibilities from Sweden were reduced owing to the fact that a number of nuclear power plants were out of operation.

From November on, there came a radical change with inflow to the reservoirs more than the double of a normal year. Statnett was still concerned about the middle part of Norway and defined a new bidding area to handle the expected import congestions to this area.

The positive inflow trend continued in both December and January, when finally the situation was defined near to normal.

For Norway, some special precautions were made in the form of the TSO buying options for reducing consumption in a number of industrial consumers (energy options). They were never activated, due to the situation improvement.

Demand

The core of this winter also benefited from average temperatures 2-4 degrees centigrade warmer than normal and a substantially reduced consumption. Peak load in Norway was 21,430 MW at 21.02, when Norway exported energy and had a surplus of reserves in the system (the highest historical load is 23,000 MW on 5th February 2001). Due to the low load and the in general good availability of production means, there was in Norway also a very low procurement of power reserves.

Lessons Learned

Even with the high energy-prices (Nordpool) late summer the import capacity to the Nordel region was not fully utilised. During peak load hours (mid-day) there might even be seen net export to continental Europe from Nordel.

The national balance cannot be approached in isolation, but must be considered together with the situation in the Nordel-area and the Continental Northern Europe.

With emphasis on potential regional energy deficit situations, Statnett has now invested in two blocks of gas-turbines, each 150 MW. Together with activation of energy options, the start up of these blocks is intended to be the last resort means for preventing load curtailment. They will be available during the coming winter

Working methods and computational tools for energy balance monitoring developed during last summer/autumn will be further refined and implemented as part of a weekly run routine, aiming at revealing potential problems at an early stage.

2.4 Sweden

Winter Overview

The winter started with relatively high temperatures, mild weather and low hydro reservoir levels. The winter ended with more normal conditions. The generation mix in Sweden is roughly 50/50 hydro/nuclear.

Remarkable Events

The Fenno-Skan HVDC link between Sweden and Finland was out of operation between 2nd December 2006 and 11th February 2007 due to a cable fault.

A number of large nuclear power plants, a total of 2,500-2,800 MW, were out of operation for longer periods between December and February. This also caused a negative impact on the reactive power support resulting in reduced transmission capacity from north to south.

This resulted in export limitations, activation of oil fired power plants and maximum import.

A heavy storm hit the south of Sweden on 14th January 2007 and caused major problems in the electricity supply on distribution level. The national grid had only a few minor outages.

Demand

Peak load for the winter was 26,100 MWh/h and occurred 21st February hour 18-19 (Temperatures north to south -16 °C, -13 °C, -12 °C, 0°C). To be compared with the all time high of 27,000 MWh/h on 5th February 2001.

Lessons Learned

During the winter 2006-2007 we ran into situations far more severe than we planned for the operational security criteria. A severe winter and severe operating conditions like we had will threaten the national electricity supply. This raises the question whether we should revaluate the availability of power plants.

3 BALTSO Area

	Prognosis ETSO WO	National Peak	°C	Date (CET)
		ESTONIA		
C	1620	1537	-19	8.02.2007
P		1591		hour 8-9
		LATVIA		
C	1519	1393	-16	23.02.2007
P		1068		hour 10-11
		LITHUANIA		
C	1950	1925	-7	12.02.2007
P		2127		hour 18-19

C-Consumption
P-Production

3.1 Estonia

Winter Overview

The most crucial periods were the weeks 6 to 9 as this was the coldest period of the winter. The demand was according to the expectations, therefore no critical cases were observed.

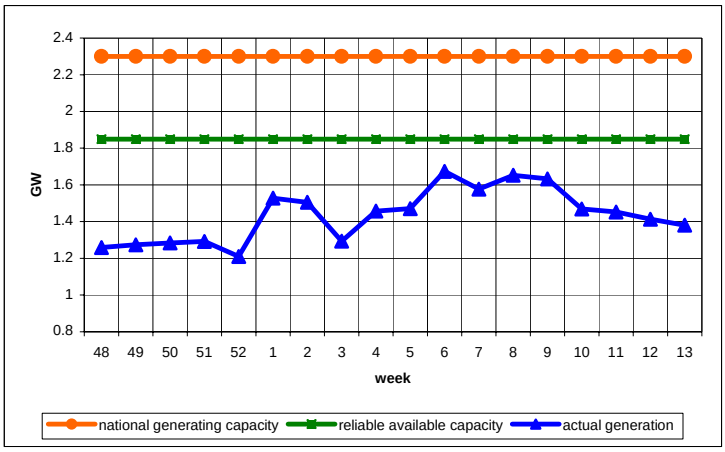
Remarkable Events

The new energy link to Finland (Estlink) was opened for commerce on January the 4th 2007.

Generation

Generation overhauls were implemented according to the schedule; unplanned maintenance works were insignificant and had no impact on the general performance. Windmills' production was at this period on the average of 40 % of the maximum available capacity.

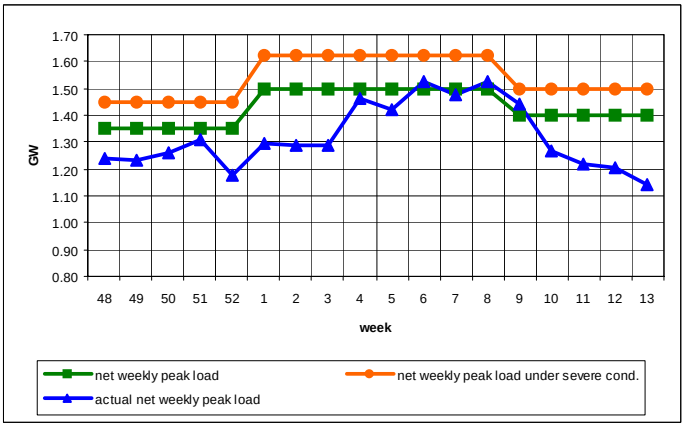
Figure 8: National Generating Capacity vs. Actual Generation



Demand

Mainly the peak loads remained under the expected values, only in February on the weeks 6 to 9 of 2007 the net weekly peak loads overcame the expected peak load for normal conditions, but still the values of the prediction for severe weather condition were not reached.

Figure 9: Forecasted Peak Load vs. Actual Net Weekly Peak Load



-

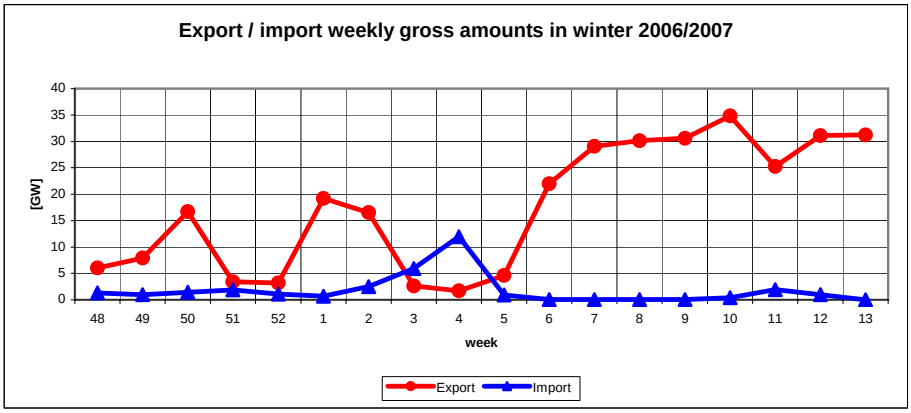
Transmission Infrastructure

Transmission infrastructures' outages were insignificant and did not impact the security of supply.

Use of Interconnectors

Import/export level reached 10 % of the whole domestic consumption. Interconnections were mostly used for export as it covered 90 % from the gross amount of export/import. Starting from the January 4th 2007 when Estlink was opened for commercial use, it has had the major part in export/import.

Figure 10: Gross Imports



Lessons Learned

Stable operating conditions are expected with no major network outages planned for winter 2007/2008.

3.2 Latvia

Winter Overview
The winter was much milder than expected and no remarkable events were identified.

Generation
There were no generation overhauls because the base load is provided by CHPs and partly covered by hydro. Hydro powerplants significantly increased output during December, January, February and March that can be explained with mild weather conditions and high water levels

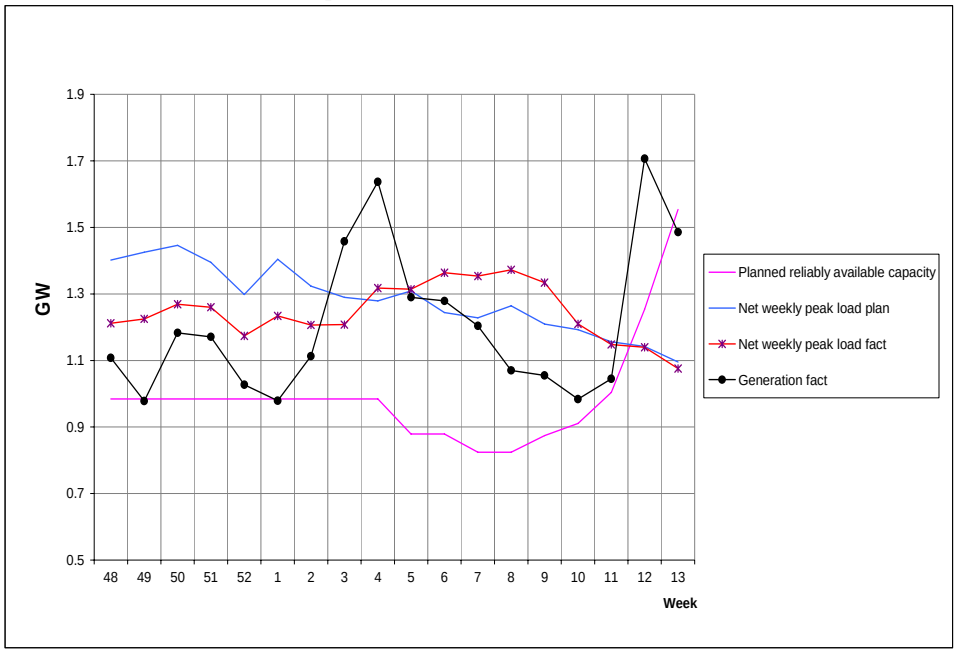
Demand
Demand was following pretty close within 10 % to the forecasted values. Forecasts for the start of season were a bit higher than actual and at the end a bit lower than actual.

Transmission Infrastructure
There were no major transmission outages and reinforcements because of the low season for maintenance.

Use of Interconnectors
The import level on average per season was 0,3 GW lower than expected in January and March reversing to export as the consequence of the afore-mentioned high water situation for hydro.

Market Conditions
As trade mostly is based on long term contracts and no particular events affected the market, there were no significant changes in the market environment.

Figure 11: Planned Available Capacity And Peak Load vs. Actual Generation and Peak Load



3.3 Lithuania

Winter Overview

Due to the unusual mild weather conditions when the average temperature was higher than normal winter temperature in Lithuania, demand was lower than expected and there were no critical periods in Lithuanian power system.

Remarkable Events

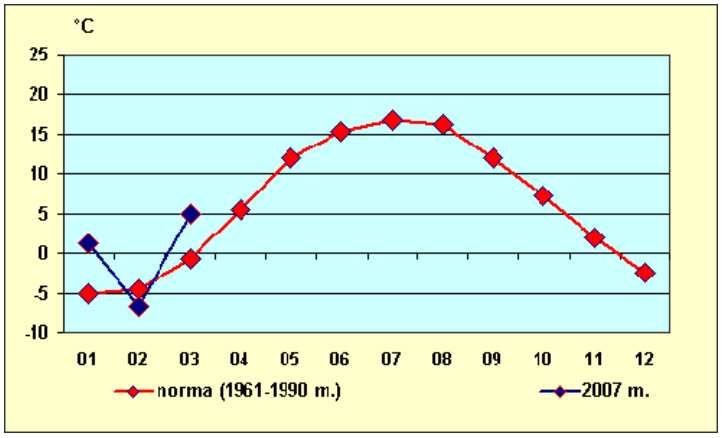
One 750 MW generator of the Ignalina nuclear power plant was put in operation only on the 7th of January in 2007 after unexpected outage in September 2006. Kaunas hydro power plant was constantly operated with two units at the total capacity of 50 MW due to the reconstruction works on the other two units. There were no significant outages in generation during winter season.

Demand

A warmer winter than usual had an impact on demand. Average temperatures were:

December +4.9 ºC, 6.5 ºC higher than long-term average.
January +1.8 ºC, 6.2 ºC higher than long-term average
February -7.4 ºC, 2.2 ºC lower than long-term average. Somewhere was even -30ºC.
March +4.9 ºC, 5.6 ºC higher than long-term average.

Figure 12: Normal Winter Temperatures vs Actual 2007 Temperature



Peak load for the winter in Lithuania was 1,925 MWh/h February 12th, hour 19-20. Peak loads were over expected, sometimes even over planned loads under severe conditions, which was in reality in February.

There were no significant transmission grid outages in Lithuania during the winter season.

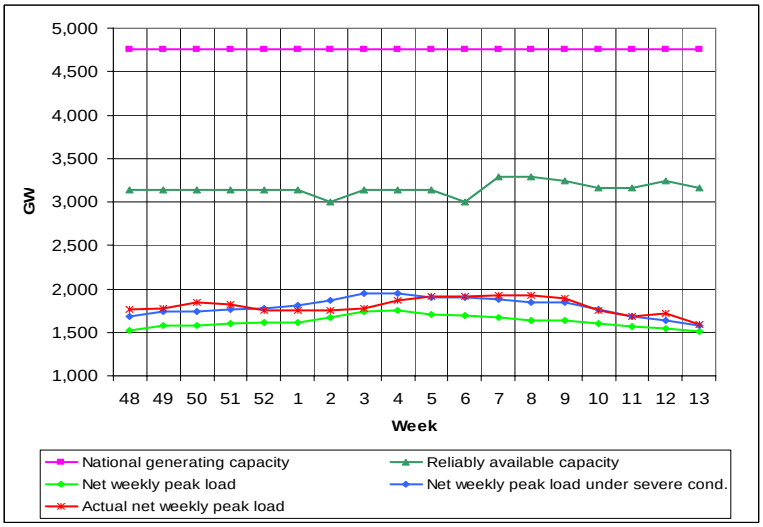
Interconnections

Lithuanian interconnections during winter period in 2006-2007 was loaded about 20-40%.

Market

The prices for electricity in the market were very different during this time period. Average prices in the market were 30,55 €/MWh in October, 27,8 €/MWh in November and 27,9 €/MWh in December. Electricity import price from Russia was stable and in was about 27,1 €/MWh.

Figure 13: Planned Available Capacity And Peak Load vs. Actual Generation and Peak Load



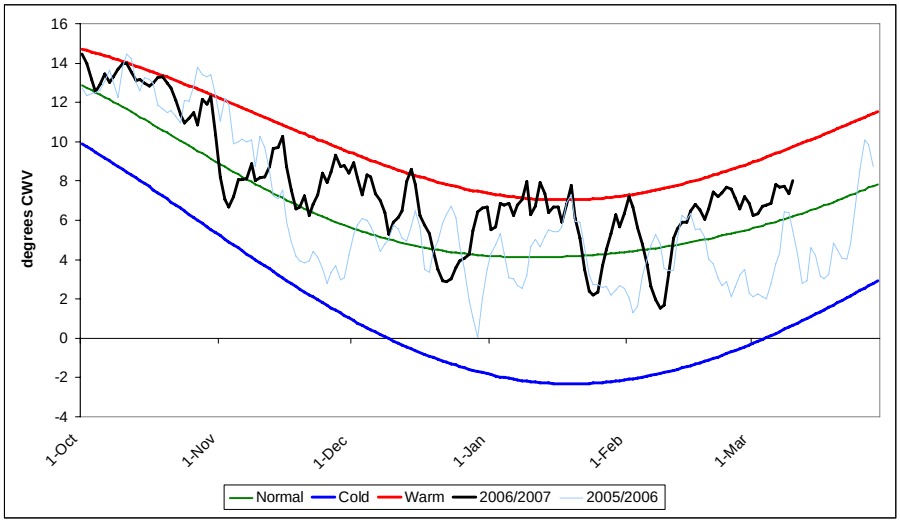
4 GB/Northern Ireland/Republic of Ireland Area

4.1 Great Britain

Winter Overview

The period December to February 2006/7 was the 2nd warmest in the UK since records began in 1914. Using the Central England Temperature series (CET), the combined period for autumn (September to November) 2006 and winter 2006/7 (December to February) has been the warmest on record with a preliminary figure of nearly 10°C, beating the previous warmest in 1989/90 by nearly a degree. Figure 14 illustrates the 2006/7 winter compared with the 2005/6 winter and warm, normal and cold conditions. The measure plotted in the graph is the Composite Weather Variable (CWV), which is calculated by combining temperatures and wind speeds and transforming them to produce a weather variable that is linearly related to non-daily metered gas demand.

Figure 14: 2006/07 Winter Compared With Warm, Normal And Cold Conditions

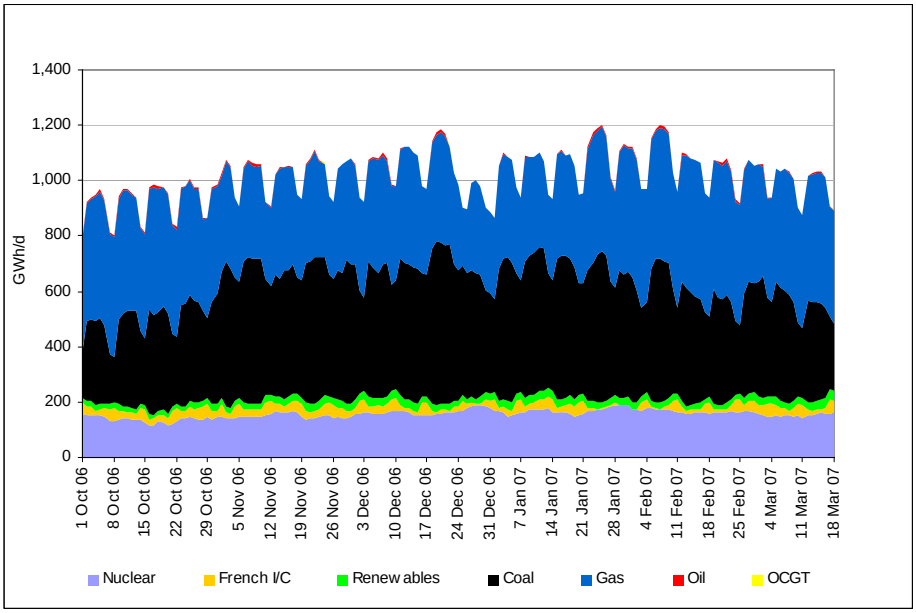


The expected risk of large exports from Scotland was realised. This was managed through the balancing mechanism and different system configurations. The main unexpected risk that arose was that a number of nuclear stations were non-operational for significant parts of the winter period. Also, a key station in Scotland had a shutdown after the coal conveyor belt collapsed. This had an impact on a number of National Grid Outages. Additionally, low gas prices resulted in higher than anticipated generation by gas fired plant.

The most remarkable event was in relation to the weather conditions. The winter was generally very mild, however on 18th January 2007 Great Britain experienced exceptionally high winds with gusts of up to 90 mph, which has been reported as the worst storm to hit the country in 17 years. The storms hit the west coast of England and moved in an easterly direction and caused wide spread damage across the country over a period of approximately 12 hours on 18th January. There were 22 faults on transmission circuits on the National Grid Electricity Transmission system over this period, but there were no losses of supply arising from these faults.

Figure 15 shows the build up of generation by fuel type to meet demand for winter 2006/7 and indicates that coal and gas fired generation were the dominant fuels with each tending to be between 300 and 500 GWh per day.

Figure 15: Build Up Of Generation By Fuel Type Winter 2006/07



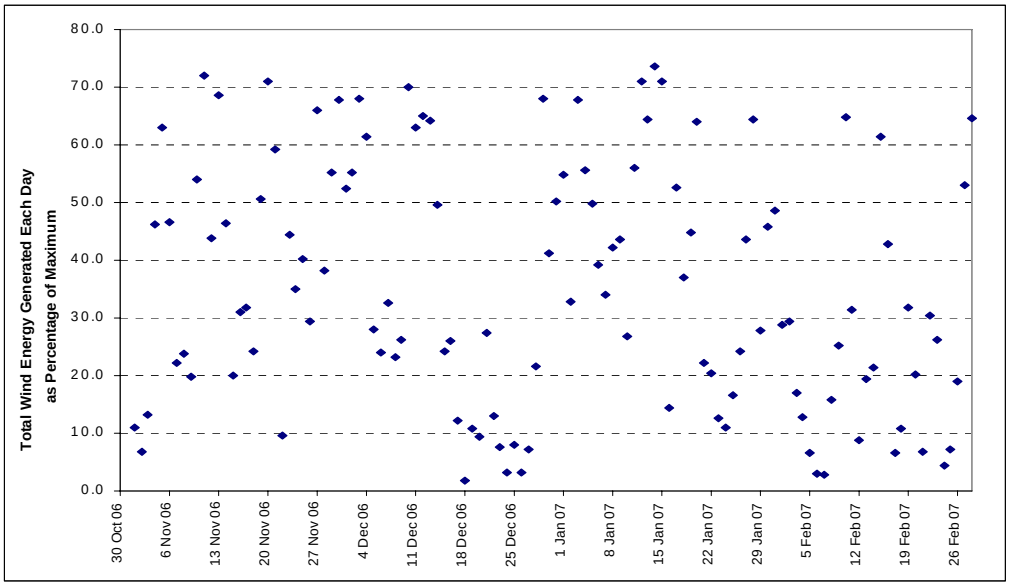
Whilst during winter 2005/6, gas was the marginal fuel and coal was baseload, it seems that during winter 2006/7 there was more competition between coal and gas fired generation. Neither coal nor gas fired generation ran as baseload generation. Overall for each 100 MW increase in demand, gas fired generation tended to increase by around 30 MW and coal-fired by around 70 MW. The increased output from gas-fired generation during winter 2006/7 appears to have been driven by declining gas prices, which made gas increasingly more attractive than coal as a generation fuel. Reduced nuclear availability over the winter was broadly offset by lower electricity demand due to the mild weather.

The key features of average plant availability by generation type over winter 2006/7 are:

- Nuclear availability was around 60%, due to reduced plant availability at Hinkley Point B and Hunterston from late October 2006. For the remaining stations, availability was close to 80%, close to our winter 2006/7 assumption of 85%;
- Coal availability at 87% was just above our modelling assumption of 85%; and
- CCGT availability at 91% was again just above our assumption of 90%.

Wind generation was highly volatile. Though average daily loadfactor at 35% was close to our assumed factor of 36%, the actual loadfactor on any day is very uncertain.

Figure 16: Wind Generation

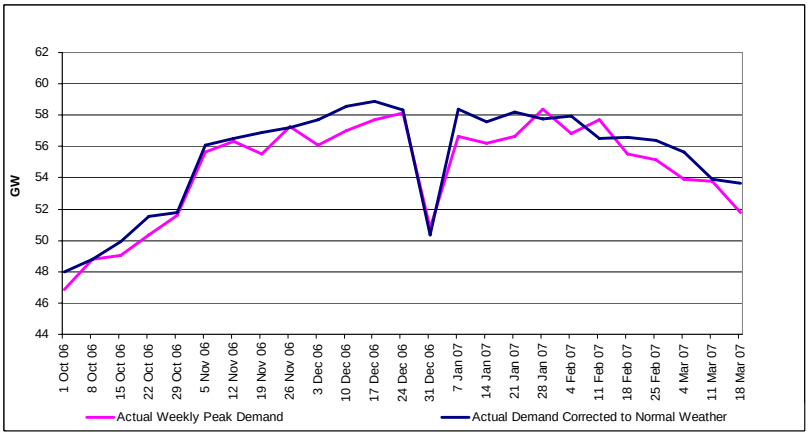


Demand

The highest electricity demand over the winter was 58.4 GW. This peak demand occurred between 17:30 and 18:00 on Tuesday 23rd January 2007. This compares to the highest demand of 60.3 GW over Winter 2005/6. These figures include power station own use and 0.3 GW export to Northern Ireland, but are net of triad avoidance Customer Demand Management.

National Grid has estimated that there was around 0.8 – 1.3 GW of triad avoidance demand management at the peak on potential triad days as large customers reduced demand. On a weather-corrected basis, the ACS peak demand for 2006/7 was 60.8 GW. This is 0.5 GW lower than the comparable 2005/6 outturn, which itself represented no growth upon 2004/5**.** The cause of the demand reduction is currently being analysed. Likely causes include increased demand management due to high end-user electricity prices, increased embedded renewable generation, and continued energy efficiency.

Figure 17: Weekly Peak Demand



Use of Interconnectors

The interconnector from Scotland to Northern Ireland flowed to Northern Ireland fairly consistently for the winter. The interconnector to France was more variable. The figure below shows average daily flow, together with the flow on the day of peak demand.

Figure 18: Interconnector Flows

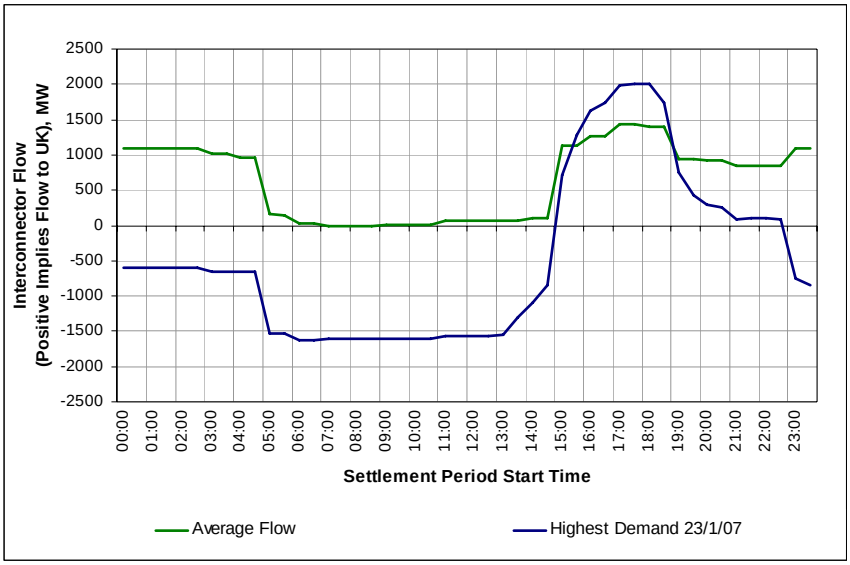


Figure 19: Daily Interconnector Flow Over The Evening Peak

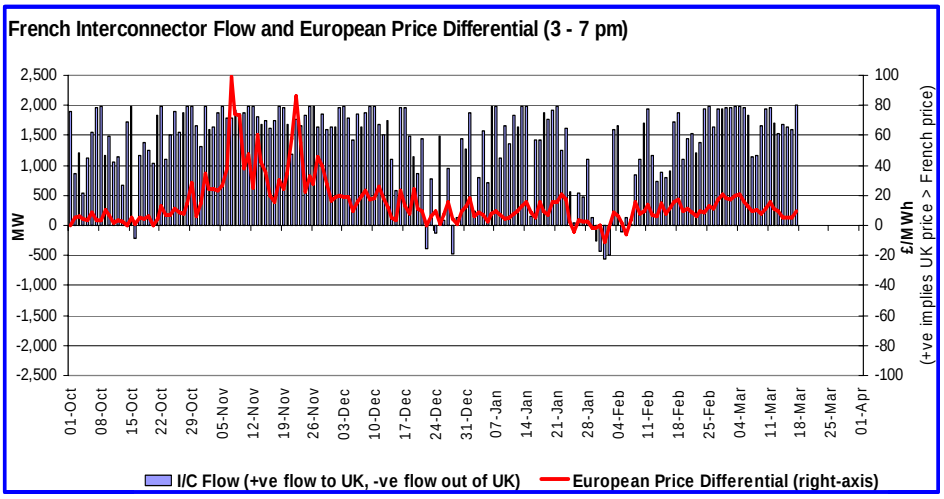
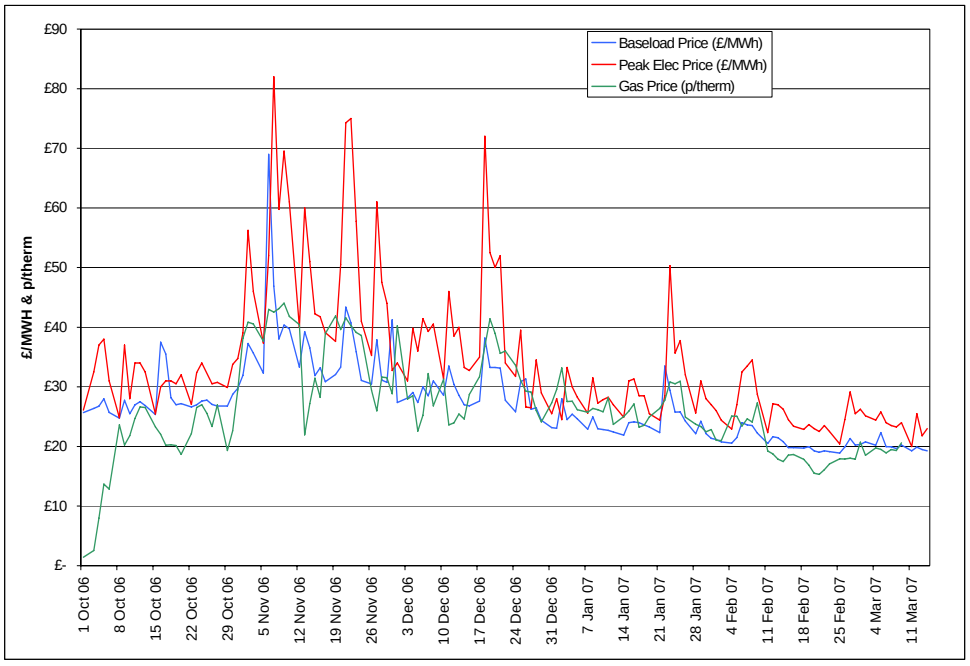


Figure 20: Power and Gas Prices



Lessons Learned

The key lessons learned for the upcoming winter 07/08 are that on a weather-corrected basis, the ACS peak demand for 2006/7 was 60.8 GW. This is 0.5 GW lower than the comparable figure for 2005/06. Likely causes include increased demand management due to high end-user electricity prices, increased embedded renewable generation, and continued energy efficiency. Pending further investigation of the causes of this demand reduction, we have assumed no growth between 2006/7 and 2007/8.

The 2007/8 ACS forecast is therefore 60.8 GW, which includes 0.3 GW flow to Northern Ireland and is after 1.0 GW of triad avoidance demand management.

4.2 Northern Ireland

Winter Forecast

The predictions for the winter on the Northern Irish power system showed very tight margins, which became even tighter when taking into account firm import / export contracts.

Additional imports were considered necessary to meet the load under severe conditions.

Winter Overview

In reality the margins experienced were not as tight as expected. As was the case across most of Europe, the winter was very mild.

Remarkable Events

CPS CCGT capacity 414MW tripped with a turbine blade failure on 15 January and returned on 31 March.

CPS open cycle gas turbine cap. 60MW was unavailable for the complete period due to an alternator rotor earth fault requiring a rewind.

BPS phase 2 Units are a 2 from 3 basis however this facility became unavailable from 17th November due to turbine blade damage. These remaining units suffered multiple boiler tube leaks through the period and these failures coincided on several occasions.

Generation

Figure 21: Actual Fossil Fuel Generation

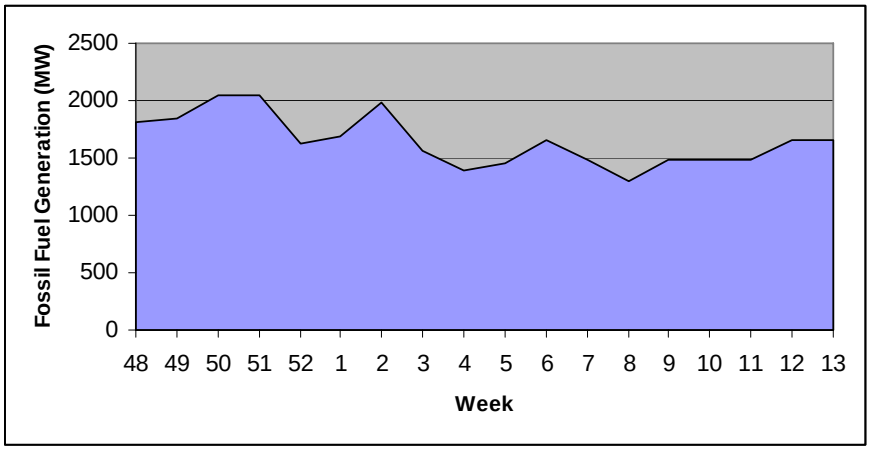
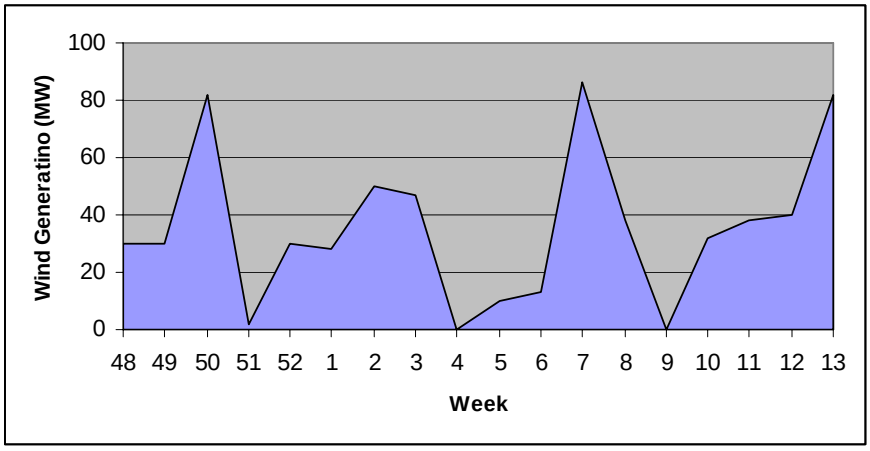
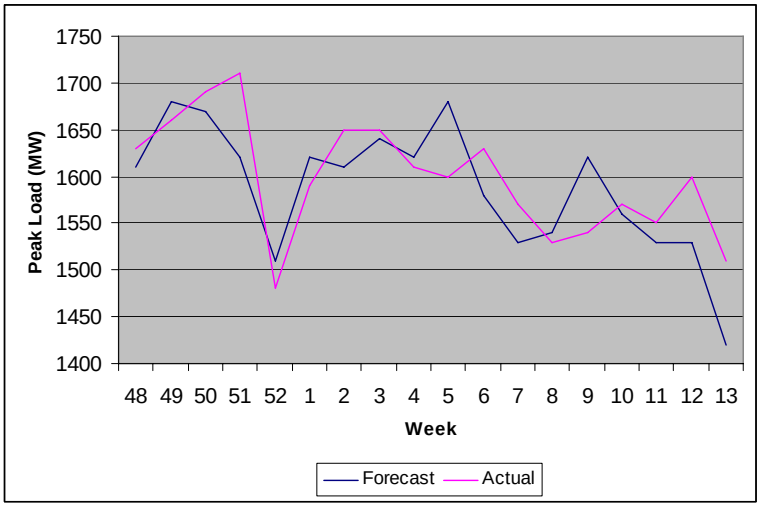


Figure 22: Actual Wind Generation



Load

Figure 23: Peak Load Forecast and Actual

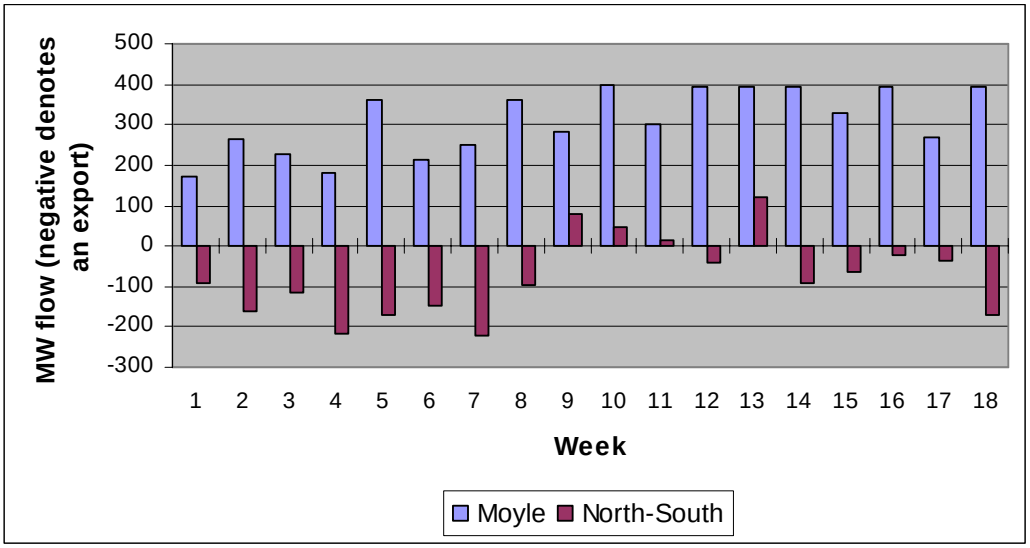


Use of Interconnection

The use of the Moyle interconnector over the winter suggests that the import capacity could be reviewed upwards for next winter.

On the North - South Interconnector the import capacity to NI was increased this year and was used.

Figure 24: Use of Interconnectors (negative flow denotes an export)



4.3 Republic of Ireland

Winter Overview

In the Winter Outlook Report the capacity was considered adequate to meet forecast demand only with dependence on imports and only if outages were within forecasted limits.

The system was operated at all times within acceptable international standards for safety, security and reliability of customer supplies.

Demand

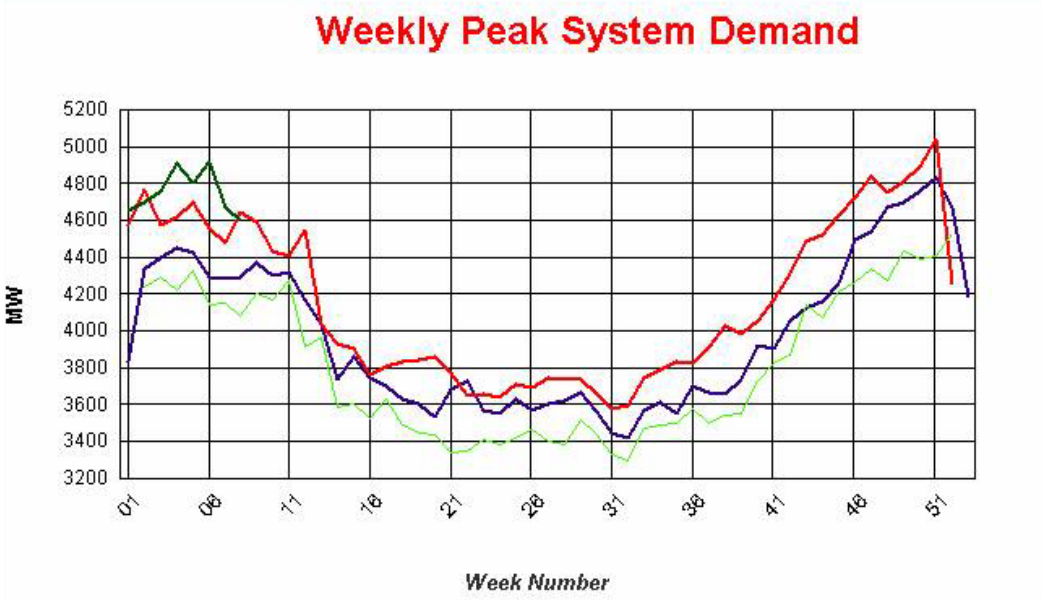
A record winter peak in demand of 5,035 megawatts (MW) was met by the power system.

Peak demand is a key measure for any power system. It indicates the maximum demand on the system for a particular period (e.g. annual or seasonal). The Irish system is a winter peaking system because of the greater heating and lighting requirements in winter.

Winter peak demand 2006 = 5,035 MW

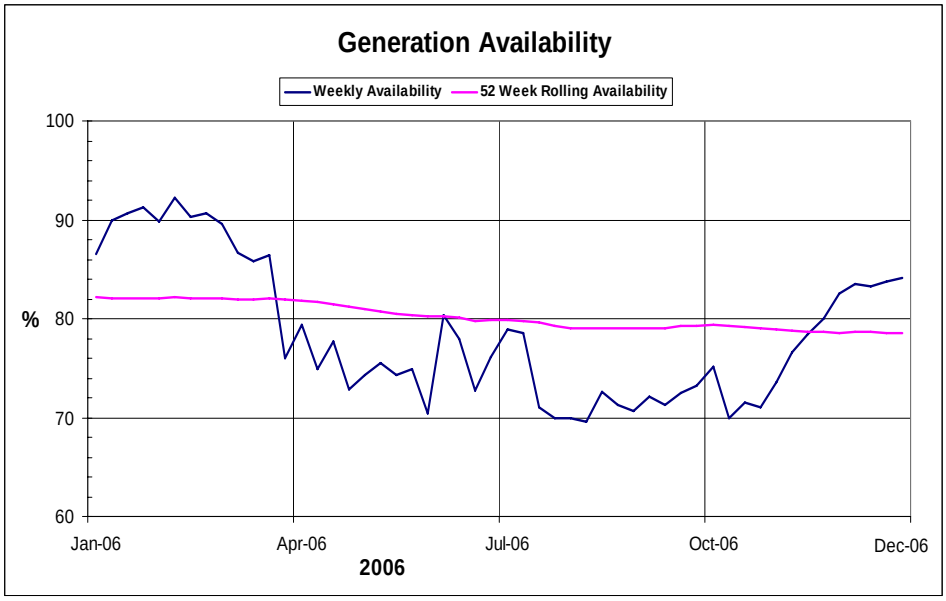
The winter peak occurred on Tuesday, 19th December 2006 at 17:30 hours and was a record for the Irish system.

Figure 25: Weekly Peaks 2004-2006



Generation

Figure 26: Generation Availability



The rolling 52-week average (generation availability) indicates a downward trend through 2006. The rolling 4-week average (of generation availability) shows overall availability drops through the summer as plants are scheduled out for maintenance and then rises through the winter months

Transmission Infrastructure

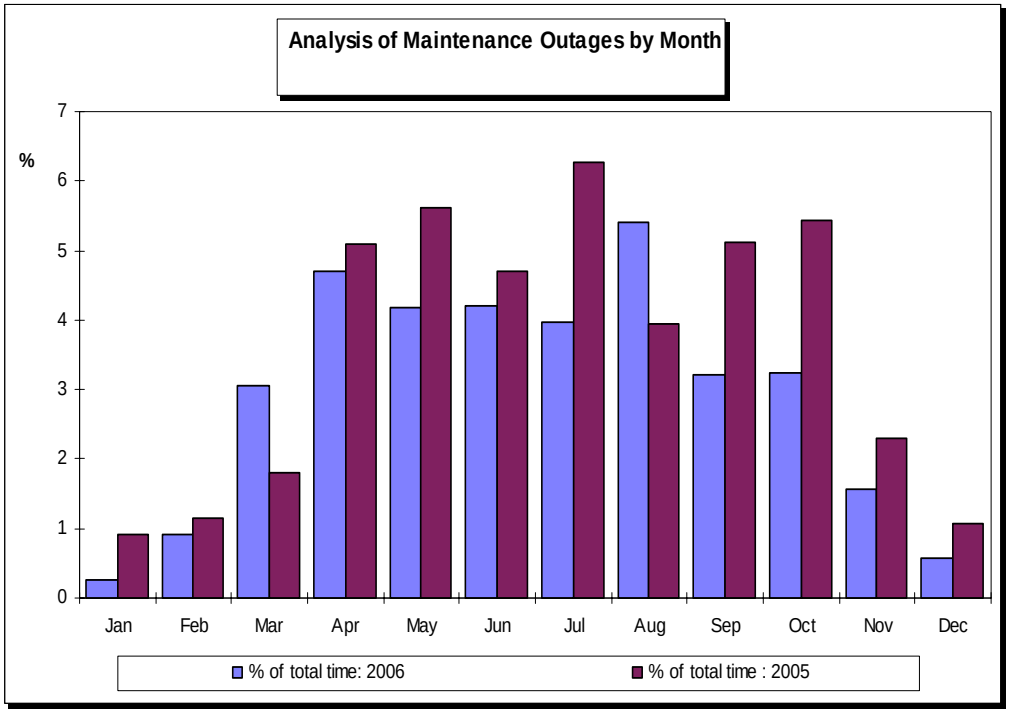
The measure of plant availability used is the kilometre-day in the case of feeders and MVA-days in the case of transformers. These measures weight the availability of plant appropriately according to their importance to the system.

The availability figures vary between the different categories of plant with an average figure of 97.12% and a range of 3.65%. Maximum Availability of 98.35% occurs on the 220kV/110kV transformers while the minimum figure of 94.7% refers to the 400 kV transformers.

Table 5: Transmission Plant Availability 2006

Plant type	Number of items	Feeder length / Transformer Capacity [km]/[MVA]	Availability 2006 [%]	Availability 2005 [%]
110kV Feeders	193	4,150	95.62	96.15
220kV Feeders	50	1,826	97.03	95.53
400kV Feeders	3	439	94.7	93.94
275kV Interconnectors	2	97	98.2	96.5
Total	**248**	**6,512**		
220-110kV Transformers	46	8,814	98.35	98.36
275-220kV Transformers	3	1,200	97.73	95.13
400-220kV Transformers	4	2,050	98.21	91.61

Figure 27: Analysis Of Outages By Month



Remarkable Events

Coolkeeragy CCGT in Derry tripped from 400 MW on November 21.