NordREG
Nordic Energy Regulators

Congestion Management Guidelines

Compliance report

Report 8/2007

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Preface

The Task 8 in NordREG work programme for 2007, is ”Implementation of Congestion Management Guidelines”. The aim of this work t is to establish a common Nordic regulatory opinion on congestion management and find a harmonised way of applying congestion management guidelines within the Nordic electricity markets. The work will start by compliance reporting of Congestion Management Guidelines under Regulation 1228/2003 which were amended at the beginning of December 2006.

As foreseen in the work programme 2007 the work will continue in order to establish a common understanding how to monitor the implementation of the CM Guidelines and other relevant issues for co-operation among Nordic regulators in the context of the CM Guidelines.

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Executive summary

Congestion management guidelines under Regulation 1228/2003 were amended in the beginning of December 2006. This first Nordic compliance report evaluates the current status of compliance and sets out the further work to TSOs and regulators for ensuring full compliance with the CM guidelines. Furthermore, compliance across the Northern Europe region should be enhanced in further work.

Congestion management methods, co-ordination and timetable for market operations

The congestion management method applied to allocate all interconnector capacity in the Nordic market, i.e. implicit auction, fulfils the requirements set in the CM guidelines.

Remaining transmission capacity after day-ahead allocation is set for intra-day and balancing markets. Furthermore, in case of limiting cross-border capacity due to TSOs internal congestions, the CM guidelines set pre-conditions for allowing limitations in interconnector capacity. In such situations compliance with the CM guidelines can be ensured by describing transparently the reasons for limitations and their effects. Procedures to ensure this transparency must be further developed by the Nordic TSOs.

In order to avoid long lasting limitations in cross-border transmission capacity due to either insufficient cross-border infrastructure or internal congestions more attention should be paid in the future to the joint Nordic network planning and where also the lead time required for building and construction authorisations and permissions should be taken into account in order to deliver timely expansions in the cross-border interconnectors and internal networks.

Generally, the current procedures meet the requirements for co-ordination and also the timetable for market operations if the Nordic market is considered. However, there is a question, whether the requirements for co-ordination and information exchange between TSOs should be more advanced to ensure the security of the Nordic power system and enhance the efficient functioning of the Nordic market.

According to the CM guidelines the national regulatory authorities shall regularly evaluate CM methods. This kind of evaluation has to be realised at least together between national regulators on both sides of the interconnector, preferably together with all Nordic regulators. A common process for this regular evaluation will be considered by the regulators.

Transparency

The Nordic TSOs have published general information on CM methods, calculation of interconnector transmission capacity, and operational and planning security standards. Furthermore, the Nordic TSOs publish transparently most of the cross-border information both ex-ante and ex-post. Recently ex-ante information on planned outages and ex-post information of outages (planned and unplanned) of generators has been changed to include units larger than 100 MW to comply with the CM guidelines. Moreover, the

Nordic TSOs have published realised actual values soon after real time and at the latest on the following day.

The Nordic TSOs publish information either on their own website or the Nord Pool website or on both. However, the minimum requirement of two years is not yet fulfilled at Nord Pool's public website although the same information may already exist for the two past years on the TSOs website. The roles of various information publishing platforms (including in the future TSOs website, the Nord Pool website and the ETSOVista website) and data consistency among these platforms should be further developed.

The Nordic TSOs already exchange power system data to enable load flow calculations. However, it might be advisable to enhance the data exchange procedures and make it more regularly (e.g. daily) and automated to ensure maximising the transmission capacity.

The Nordic regulators have not yet reviewed fully the transparency requirements and their compliance with the CM guidelines. These reviews shall be conducted during the further work among Nordic regulators. Furthermore, more harmonised requirements as regards transparency within Northern Europe region are also studied within the ERGEG's Northern Europe Regional Initiative Implementation Group on transparency.

Use of congestion income

In year 2005 the Nordic TSOs decided to use congestion income to five prioritised investments in the Nordic grid. In the 2007 agreement TSOs have agreed on criteria for sharing the congestion income in longer time perspective (until end of 2011). However, the Nordic TSOs have not yet submitted their proposal for the procedure for the distribution of the CM revenues or criteria to share the congestion income among TSOs for review to regulators.

National regulators have been requested by ERGEG (as responsible for collection of national benchmarking reports) to include in the annual benchmarking report to the Commission the amounts of congestion revenues collected as requested in the CM guidelines.

1 Background

NordREG work programme 2007 includes Task 8 “Implementation of Congestion Management Guidelines” under the strategic priority “Regulation of the TSOs” and its objective to promote adequate transmission capacity and efficient market-based congestion management methods.

Congestion management has a great impact on the efficient functioning of the Nordic electricity markets. A common coordinated congestion management method is important in order to achieve a further integration of the Nordic electricity market, as well as the interaction with other European markets.

Congestion Management Guidelines under Regulation 1228/2003 were amended in the beginning of December 2006. The aim of Task 8 under NordREG work programme 2007 is to establish a common Nordic regulatory opinion on congestion management and find a harmonised way of applying congestion management guidelines within the Nordic electricity markets. The project will utilise the work made during year 2006 within NordREG of the present congestion management principles.

During the year 2007 the NordREG Congestion Management Working Group will work on following issues:

- Compliance reporting of the CM Guidelines
- Establish a common understanding how to monitor the implementation of the CM Guidelines
- Procedures how CM methods are published
- Co-operation among Nordic regulators in the context of the CM Guidelines
- Regulators’ role in the development of CM methods

NordREG has worked from year 2005 on establishing a common Nordic regulatory opinion on congestion management. The first report on this topic published in June 2007 “Congestion Management in the Nordic Region – A common regulatory opinion on congestion management” summarises the discussion regarding congestion management in the Nordic region in light of the new EU Congestion Management Guidelines. The report also identifies the issues NordREG have to deal with in order to introduce harmonised implementation of Congestion Management Guidelines across the Nordic market.

In the June 2007 report NordREG has identified problems in the Nordic countries. The new congestion management guidelines imply additional responsibilities for the regulatory authorities to monitor methods and practices. Therefore, all the regulatory authorities need to build new competences in addition to the need of more transparent data and knowledge of the procedures of the TSOs and Nord Pool. However, this does not take away the TSOs responsibility for monitoring and transparency regarding the operational issues.

According to the June 2007 report it is important in future discussions of congestion management that competition issues are taken into account. Competition aspects are important and have to be taken into account when defining bidding areas in the Nordic market. Another issue that could affect the optimal number of bidding areas is the

competition on the retail market. A common coordinated congestion management method would enhance competition.

Furthermore, the roles of the regulatory authorities in the Nordic countries with regard to capacity allocation and congestion management vary. The opening of electricity markets and the vision of an integrated European market for electricity has led to a process where the roles of the regulatory authorities need to be more harmonised. Thus, NordREG needs to develop a common practical interpretation of the congestion management guidelines taking the interface with central Europe into account. The June 2007 report mapped issues that need special regulatory attention, such as the role of regulatory authorities, processes and tools for monitoring giving input to this NordREG task on implementation of Congestion Management Guidelines.

This report concentrates on compliance reporting of Congestion Management guidelines (hereafter CM guidelines). In the following the CM guidelines are referred chapter by chapter and their present implementation status is considered within the Nordic market. It is the first compliance report on amended CM guidelines on the Nordic level. Therefore, further work for monitoring process is also foreseen.

The CM guidelines set up requirements for TSOs on managing congestions, co-ordination, transparency and use of congestion income. Furthermore, the CM guidelines require that competent regulators oversee TSOs actions. Obligations to market participants are also included in topics having relevance to congestion management.

In this report the compliance is evaluated only on interconnectors among the Nordic countries, i.e. the interconnectors between Finland-Sweden, Finland-Norway, Sweden-Denmark, Sweden-Norway, Denmark-Norway. Interconnectors ending in non-Nordic countries, i.e. Sweden-Poland, Sweden-Germany, Denmark-Germany, Finland-Russia are not considered. This approach makes it easier to come up with this complex issue of congestion management and concentrate first on implementation in the Nordic electricity market, while the lessons learnt in this exercise can be used as a starting point for the next step that needs to take a broader view. For the integration and co-ordination between the Nordic market as a part of Northern Europe (including also Germany and Poland) defined in the CM Guidelines, the interconnectors to central Europe are vital and they have to be taken into account when compliance within Northern Europe region is considered. This requires co-operation between all regulators within the region, i.e. Denmark, Norway, Sweden, Finland, Germany and Poland. Furthermore, there are also existing or planned interconnectors between Finland and Estonia and Norway and the Netherlands that need to be taken into consideration in this wider context.

Thus, in this report only requirements having relevance to Nordic interconnectors are dealt with. This implies that e.g. issues for explicit auctions, transmission capacity nominations or co-ordination for longer than day-ahead timeframes are excluded in considerations. Nordic electricity markets have well developed forward financial markets and according to Article 2.8 of the CM Guidelines all interconnector capacity may be allocated through implicit auctions in regions where forward financial markets are well developed. Furthermore, article 3.3 states that regions referred in article 2.8 may allocate all interconnection capacity through day-ahead allocation. Thus yearly and monthly allocations are not required on the Nordic market.

In parallel to the compliance evaluation on the Nordic level, ERGEG has produced the first compliance evaluation of Regulation on the European level[1]. This evaluation addresses tarification, inter-TSO compensations and exemptions on interconnectors in addition to congestion management. ERGEG stated that sufficient compliance has been achieved on certain issues. However, ERGEG required further development for full compliance and thus concluded that it will continue the work on the CM guidelines to provide recommendations on interpretations and, where necessary, recommendations on amendments to the CM Guidelines. ERGEG will prepare a second compliance report in year 2008.

2 General provisions

According to the CM guidelines (Article 1.1) TSOs shall endeavour to accept all commercial transactions, including also those for cross-border trade. According to Article 1.2 no restrictions for access to the interconnection shall be set when there is no congestion and thus no permanent allocation procedure is needed for access to a cross-border transmission service.

In the case when power flows caused by commercial transactions exceed those for secure network operation, TSOs shall relieve congestions to maintain operational security of the grid and ensuring that costs for this remain at economically efficient level. Curative redispatching or counter trading shall be envisaged in case lower cost measures cannot be applied. Congestion management methods, which are applied if structural congestion exists, shall ensure that the physical power flows associated with all allocated capacity comply with network security standards. These methods shall give efficient economic signals to market participants and TSOs, promote competition and be suitable for regional and communitywide application according to Article 1.5. A permanent congestion management procedure, implicit auctions, exists on all Nordic borders. The general view is that this procedure, i.e. implicit auctions, complies with the above mentioned requirements.

Transaction based allocation is not allowed in congestion management according to Article 1.6. Furthermore, TSO can deny request for cross-border transmission service only when security of system is not guaranteed and monetary value of service request is lower than other requests for same transmission services. Within the Nordic market no transaction-based products for cross-border service are anymore applied and market design with implicit auctions secure that requirements in Article 1.6 are met.

Article 1.7 requires that TSOs shall be guided by principles of cost-effectiveness and minimisation of negative impacts on the Internal Electricity Market when defining appropriate network areas where to apply congestion management. TSOs may not limit interconnection capacity in order to solve congestion inside their control area, except for reasons of operational security and reasons of cost-effectiveness and minimisation of negative impacts on the Internal Electricity Market. If such a situation occurs, this shall be described and transparently presented to all the users by TSOs and such situation may be tolerated only until a long-term solution is found. Furthermore, the methodology and

[1] See ERGEG website: www.ergeg.org

projects for achieving the long-term solution shall be described and transparently presented to all the users by the TSOs.

The CM Guidelines set preconditions, i.e. operational security, cost-effectiveness and minimisations on negative impacts on integrated market, for limiting interconnector capacity due to the internal congestions within TSO control area. In such situations compliance with the CM guidelines can be ensured by describing transparently (e.g. in the public domain of Nord Pool Spot) the reasons for limitations and their effects on operational security, costs and the integrated Nordic market. Procedures to ensure this transparency must be further developed in the Nordic market by TSOs and monitored by the regulators to ensure compliance with CM guidelines. Long-term solutions for several congestions have been introduced, when Nordel published their five priority project plan[2]. The realisation of these investments takes, however, some years and until then the situation may be tolerated according to the CM guidelines. Though, it is not specified for how long this short-term solution can be tolerated in order to be compliant with the CM guidelines. The joint network planning within Nordel is important. Equally important is an efficient process for authorisations and permits in order to avoid long lasting limitations in cross-border transmission capacity. Article 1.9 of the CM guidelines set date (1 January 2008) for establishing mechanisms for intra-day congestion management of interconnection capacity in a coordinated way and under secure operational conditions to maximise opportunities for trade and to provide for cross-border balancing. An intra-day congestion management mechanism is already presently applied on the borders between Sweden – Finland, Sweden – Denmark East and Sweden – Denmark West and intra-day market, Elbas, covers Finland, Sweden and Denmark.

According to the Guidelines Article 1.10 the national regulatory authorities shall regularly evaluate CM methods. The evaluation shall include consultation of all market players and dedicated studies. The evaluation has not yet been performed by the national regulators. This kind of evaluation has to be realised at least together between national regulators on both sides of the interconnector, preferably together with all Nordic regulators. A common process for this regular evaluation within the article 1.10 should be considered among the regulators. Some studies to be used in this evaluation have already been executed by Nordic Council of Ministers, Nordel, NordREG and Swedish authorities (e.g. POMPE project).

3 Congestion management methods

According to the CM guidelines Article 2.1 CM methods shall be market-based. Explicit and implicit auctions are allowed for this purpose and both methods can co-exist on an interconnector. However, for intra-day trade continuous trading may be used.

Article 2.2 states that both long- and short-term transmission capacity allocations may be allowed depending on competition conditions. Article 2.3 states that each allocation procedure shall allocate a prescribed fraction of available interconnection capacity plus

[2] More information on Nordel website: www.nordel.org

any remaining capacity not previously allocated and any capacity released by capacity holders from previous allocations. According to Article 2.6 TSOs shall define an appropriate structure for the allocation of capacity between different timeframes. This may include an option for reserving a minimum percentage of interconnection capacity for daily and intra-day allocation. When proposing the allocation structure, the TSOs shall take into account:

- characteristics of market
- operational conditions, such as the implication of netting firmly declared schedules
- the level of harmonisation of the percentage and timeframes adopted for the different capacity allocation mechanisms in place

In the Nordic market all interconnection capacity may be allocated through implicit auctions according to the article 2.8. Thus capacity allocations required in the Nordic market are only for day-ahead and intra-day timeframe.

Congestion in the Nordic area is managed by market splitting, counter trading and reduction of cross-border trading capacities. Market splitting is used between countries, between north, middle and south Norway and between Eastern and Western Denmark. Congestion inside an Elspot bidding area is managed by reduction of cross-border trading capacities in the operational planning phase and by counter trading in the operational phase.

All cross-border transmission capacities in the Nord Pool area are allocated via day-ahead implicit auctions complying generally with the CM guidelines. Furthermore, remaining transmission capacity from day-ahead allocation is allocated for intra-day and balancing markets.

When there is expected congestion within an Elspot area the TSO in question must make sure that the safety rules will not be violated during the operating hour. If it is feasible for the TSO to plan for counter trading, more trading capacity can be allocated. In some areas there may not be enough production capacity in the system to deal with possible congestions and thus, counter trading may not be possible if needed in the timeframe of between 38 h and real time. If counter trading would not be feasible, the trading capacity on interconnectors to and from the area in question will have to be reduced.

Article 2.4 requires that TSOs shall optimise the degree to which transmission capacity is firm and a reasonable fraction of capacity may be offered to the market at a reduced degree of firmness, but the exact conditions for transport over interconnectors shall at all times be made known to market participants.

The Nordic TSOs announce transmission capacity for the day-ahead market before gate closure (at 9.30 o'clock). All economic transactions agreed on the day-ahead spot market will be effectuated. Possible situations with upcoming congestions within this time span of 38 hours will be handled by the TSOs through counter trading. Upcoming congestion (after the day-ahead announced transmission capacity) may be the result of fault(s) on transmission lines or on production or consumption facilities or it could be the result of wrong forecasts of flows. This means that the TSOs relieve remaining congestions by counter trading during the operational phase to maintain the transmission capacity on the

interconnectors. Presently reduced degree of firmness on transmission capacity is not applied at Nordic interconnectors.

According to the CM guidelines Article 2.13 the financial consequences of failure to honour obligations associated with the allocation of capacity shall be attributed to those who are responsible for such a failure. Where market participants fail to use the capacity that they have committed to use, they shall lose the rights to such capacity and pay a cost-reflective charge. Any cost-reflective charges for the non-use of capacity shall be justified and proportionate. Likewise, if a TSO does not fulfil its obligation, it shall be liable to compensate the market participant for the loss of capacity rights. No consequential losses shall be taken into account for this purpose. The key concepts and methods for the determination of liabilities that accrue upon failure to honour obligations shall be set out in advance in respect of the financial consequences.

No financial obligations described in Article 2.13 are set for market participants in Nordic market due to the applied auction mechanism, i.e. implicit auctions. Nordic TSOs fulfil their obligations set in Article 2.13 by using counter trading to secure the announced transmission capacity. Liabilities for market participants are set in terms and conditions and in agreements between power exchange Nord Pool and market participants, Nord Pool and TSOs.

The CM guidelines (Article 2.6) require that the allocation structure for different timeframes shall be subject to review by regulators (either ex-ante or ex-post review). Regulators have not yet made review of the allocation structure in Nordic market but the general view is that the structure generally complies with the CM Guidelines. In the future a more enhanced allocation structure might introduce more efficiency to the Nordic market. Timeframes should also be reviewed when compliance for allocation structure on interconnectors to non-Nordic countries are considered. Furthermore, the requirement for regular evaluation of congestion management methods is set in Article 1.10.

The CM guidelines (Article 2.13) require that the key concepts and methods for the determination of liabilities that accrue upon failure to honour obligations shall be set out in advance (for market actors and for TSOs) in respect of the financial consequences and shall be subject to review by the relevant regulators. The Nordic market design, i.e. implicit auctions and counter trading in case of transmission capacity problems, imply that market rules set by Nord Pool define the obligations for market participants. However, this issue should be further elaborated by the regulators.

4 Co-ordination

Co-ordination in all aspects of congestion management between TSOs involved is a prerequisite for well functioning regional and European markets. If actions conducted by TSO(s) have effect on other TSOs' networks, unilateral or bilateral actions are restricted.

The CM guidelines require in Article 3.1 that capacity allocation is coordinated and implemented using common allocation procedures among those TSOs having mutual affect on their grids. Furthermore, regulatory authorities and TSOs shall ensure that no congestion management procedures with significant effects on physical electric power flows in other networks are devised unilaterally.

The Nordic TSOs cooperate and coordinate Nordic transmission capacity allocations in order to arrive at power flows throughout the complete system that do not overload the grid. Despite the working system at the outset, NordREG has proposed to look further into the consequences of changes in capacity allocation procedures and congestion management methods[3]. There is a growing concern that physical facts in the Nordic grid should be better represented when prices and flows are determined. NordREG's proposal is more or less in accordance with the thoughts presented by Ea Energy Analyses in a report to the Nordic Electricity Market Group, Nordic Council of Ministers – "Steps for improved congestion management and cost allocation for transit"[4].

Furthermore, in balancing the network within a control area TSOs shall take into account the effects on neighbouring control areas.

A common coordinated congestion management method and procedure for the allocation of capacity to the market at least yearly, monthly and day-ahead shall be applied by not later than 1 January 2007 between the countries in Northern Europe including Denmark, Sweden, Finland, Germany and Poland. However, in regions where forward financial electricity markets are well developed, i.e. Nordic electricity market, all interconnection capacity may be allocated through implicit auction. In the Nordic market a coordinated procedure for the allocation of transmission capacity is already in place and capacity on interconnectors is allocated day-ahead timeframe through implicit auctions.

However, coordination within congestion management should include also Germany and Poland as they belong to the Northern Europe region and the congestion management methods on the interconnectors from Nordic countries to the continental Europe are not yet fully in line with the CM guidelines. This requires further work which has been launched within ERGEG's Northern ERI[5].

As mentioned above, NordREG aims at looking further[3] whether the actual congestion methods used provide sufficiently high levels of efficiency and security of supply.

Furthermore, compatible congestion management procedures shall be defined in all seven regions, including Northern Europe region, with a view to forming a truly integrated IEM and market actors shall not be confronted with incompatible regional systems. There are normally a large number of congested interconnections within the European transmission grid, and it is not possible to build away all congestions. However, the existence of transmission congestion should by no means prevent the construction of a well-functioning and competitive pan-European electricity market. The key point is to find efficient and not only compatible congestion management methods.

Article 3.5 in the CM guidelines requires that coordination between TSOs within the region shall include, in particular:

- use of common transmission model
- allocation and nomination of capacity

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[3] NordREG report, 2007. "Congestion management in the Nordic region – A common regulatory opinion on congestion management ". Available at website www.nordicenergyregulators.org.
[4] available at Norden website: www.norden.org
[5] More information at website: www.ergeg.org

- identical obligations on capacity holders to provide information on their intended use of capacity, i.e. nomination of capacity (explicit auctions)
- identical timeframes and closing times
- identical structure for the allocation of capacity among different timeframes and in terms of blocks of capacity sold
- consistent contractual framework with market participants
- verification of flows to comply with the network security requirements for operational planning and for real-time operation
- accounting and settlement of congestion management actions

Generally the current procedures and methods within Nordic market meet the requirements set in Article 3.5. However, there is a question, whether the requirements for coordination should be more advanced in the future to enhance more efficiently the functioning of the Nordic market.

Present scheme with Nordic TSOs to calculate and nominate transmission capacities in advance before the power exchange's calculation of market clearing prices has some weaknesses. The current representation of the physical network in the market splitting model is very simplified. This often leads to a need for the TSOs to restrict the capacity on interconnectors given to the market due to the uncertainty regarding the physical flow that will result from the anticipated trade in the following day. It may therefore contribute to a less efficient utilisation of interconnector capacity than would be possible with a more accurate model. As the number of interconnectors increases as well as the trade, this problem can be expected to increase. In the long run, therefore, new models need to be developed. Solution to this problem requires that capacities and market clearing prices (which determine supply and demand all over the network) should be carried out simultaneously. Thus the present procedure with sequential capacity and price definition is at the risk of leading to inefficiencies and decreased security of supply as referred in NordREG report on congestion management[3].

Moreover, coordination shall also include the exchange of information between TSOs. The nature, time and frequency of information exchange shall be compatible with the activities stated in Article 3.5 and the functioning of the electricity markets. This information exchange shall in particular enable the TSOs to make the best possible forecast of the global grid situation in order to assess the flows in their networks and the available interconnection capacities. Any TSO collecting information on behalf of other TSOs shall give back to the participating TSO the results of the collection of data.

Nordic TSOs have defined the information exchange in Nordic Grid Code 2007 and this current practice complies generally with requirements in the CM guidelines. However, information exchange should be enhanced in the future to ensure the security of the Nordic power system and the efficient functioning of Nordic market.

As already stated above the CM guidelines require that regulatory authorities together with TSOs shall ensure that no congestion management procedure with significant effects on physical electric power flows in other networks is devised unilaterally. Generally the non-unilateral development of CM procedures is secured by Nordic cooperation of TSOs within Nordel. Nordic regulators also through NordREG aim at minimising unilateral development.

5 Timetable for market operations

The CM guidelines in Article 4.1 require that the allocation of the available transmission capacity shall take place sufficiently in advance and prior to each allocation the involved TSOs shall jointly publish the capacity to be allocated, taking into account capacity released from firm transmission rights, netting nominations and reduction or unavailability of capacity. Successive intra-day allocations of available transmission capacity for day D shall take place on days D-1 and D, after the issuing of the indicated or actual day-ahead production schedules according to Article 4.3.

Only day-ahead and intra-day market exists in Nordic countries. Announcement of available transmission capacity for day-ahead market is made by Nordic TSOs at the latest at 9,30 o'clock in the morning, whereas day-ahead market has gate closure at 12 o'clock. Available transmission capacity for intra-day market is published in the afternoon when allocation for day-ahead market has been settled. Regulators' view is that this procedure complies with requirements in the CM guidelines within Nordic countries.

Article 4.4 in the CM guidelines states that when preparing day-ahead grid operation, the involved TSOs shall exchange information, including their forecast grid topology, the availability and forecasted production of generation units, and load flows in order to optimise the use of the overall network through operational measures in compliance with the rules for secure grid operation. Generally this requirement is fulfilled by Nordic TSOs through operational agreement within Nordic Grid Code 2007, where the extent of information exchange is defined before, during and after the hour of operation. However, information exchange may be enhanced in the future to ensure security of Nordic power system and efficient functioning of Nordic market.

6 Transparency

According to Article 5.1 of the CM guidelines TSOs are responsible to publish all relevant information related to network availability, network access and network use. This information shall include also the report on

- where and why congestions exists,
- methods applied to manage the congestion
- plans for future management of the congestion

Nordic TSOs have published some of the required information e.g. where congestions exist, general principles to manage congestions and investment plans to decrease congestions. However, the information published should be more in detail. NordREG aims in the future at defining common Nordic criteria for publishing the relevant information related to network availability, network access and network use. Furthermore, coordination in publishing within Nordic market should be ensured in the future.

Accordingly Article 5.2 requires that TSOs shall publish a general description of CM methods applied under different circumstances for maximising the capacity available to the market, and a general scheme for the calculation of the interconnection capacity for different timeframes, based on the electrical and physical realities of the network. Article

5.3 states that TSOs shall also describe in detail and make publicly available the following procedures:

- CM and capacity allocation procedures applied,
- times and procedures for applying capacity
- description of products offered
- obligations and rights (incl. liabilities accrued upon failure to honour obligations) of TSOs and party obtaining the capacity

Operational and planning security standards are vital elements for the congestion management and TSOs are obliged to publish these standards according to Article 5.4 of the CM Guidelines.

The Nordic TSOs have published general information on CM methods, calculation of interconnector transmission capacity, and operational and planning security standards in the Nordic Grid Code (latest version from year 2007) and in a document called "Principles for determining the transfer capacity in the Nordic power market" (published 5 July 2006). However, sufficiency of these publications to comply with transparency requirements in the CM guidelines shall be checked by regulators as required by the CM guidelines.

Article 5.5 of the CM guidelines sets minimum requirements for publishing cross-border information continuously, both forecasts and realised values. These include

- long-term evolution of transmission infrastructure
- year-, month-, week-ahead forecasts of transmission capacity and available day-ahead and intra-day transmission capacity
- transmission capacity already allocated as well as an indication of prices paid
- transmission capacity used immediately after nomination
- realised commercial and physical flows with effects of any corrective actions to solve network/system problems
- ex.-ante information on planned outages and ex-post information on planned and unplanned outages of generators larger than 100 MW

According to Article 5.7 TSO shall publish the relevant information on forecast demand and on generation according to the timeframes referred above e.g. year-, month-, week- and day-ahead and intra-day. All relevant information shall be available for the market in due time.

Nordic TSOs publish already most of the cross-border information both ex-ante and ex-post required by Article 5.5 in the CM guidelines. Recently ex-ante information on planned outages and ex-post information of outages (planned and unplanned) of generators has been changed from larger than 200 MW to include larger than 100 MW to comply with the CM guidelines. However, the requirements in Article 5.5 and 5.7 should be studied further to introduce joint implementation for publishing across Nordic market and define the relevant information on forecast demand and on generation in different timeframes in Nordic market. Moreover, it should be guaranteed that all TSOs publish annually the long-term evolution of the transmission infrastructure and its impact on cross-border transmission capacity.

When forecasts are published, the realised actual values for the forecast information shall be published at the latest on the following day; preferably the publishing should occur in the time period following that to which the forecast applies. Generally, Nordic TSOs have published realised actual values quite soon after the real time and at the latest on the following day. However, transparency requirements from Article 5.5 and 5.7 may require that in the future the amount of both ex-ante and ex-post published information may increase.

According to Article 5.9 TSOs shall make all information published freely available in an easily accessible form. Information with a minimum of two past years shall be made available. Nordic TSOs publish freely available information either on their own website or the Nord Pool website. However, the minimum requirement of two years is not yet fulfilled at Nord Pool's public website although same information may already exist in history for two years on the TSO's website. TSOs should make best efforts to guarantee that market actors can find the relevant information either on TSOs' websites or on Nordpool's website (or on both websites) and this information should be consistent on these websites. The roles of various information publishing platforms (including in the future TSO's website, Nord Pool website and ETSOVista website) and data consistency among these platforms should be further developed.

Furthermore, according to Article 5.10 TSOs shall exchange regularly a set of sufficiently accurate network and load flow data in order to enable load flow calculations for each TSO in their relevant area. Nordic TSOs exchange power system data to enable load flow calculations. However, it might be advisable to further enhance the data exchange procedures and make it more regular (e.g. daily) and automated to make efforts to ensure maximising the transmission capacity. The following issues within transparency shall be subject to review by regulatory authorities:

- a general scheme for the calculation of the interconnection capacity for the different timeframes, based upon the electrical and physical realities of the network
- operational and planning security standards
- way of publishing information required in Article 5.5

Nordic regulators have not yet reviewed fully the above issues and their compliance with the CM guidelines. These reviews are planned to be conducted during the further work among Nordic regulators. More harmonised requirements as regards transparency within Northern Europe region are studied within the ERGEG's Northern Europe Regional Initiative Implementation Group on transparency.

7 Use of congestion income

According to Article 6.1 the CM guidelines require that CM procedures may generate revenue only in the event of congestion. Furthermore, CM procedures shall neither distort the allocation process in favour of any party requesting capacity or energy nor provide a disincentive to reduce congestion.

Article 6.3 requires that the congestion income shall be shared among the TSOs involved according to criteria agreed between the TSOs involved. According Article 6.4 TSOs shall clearly establish beforehand the use they will make of any congestion income they

may obtain and report on the actual use of this income. Furthermore, according to Article 6.6 the use of congestion income for investment to maintain or increase interconnection capacity shall preferably be assigned to specific predefined projects which contribute to relieving the existing associated congestion and which may also be implemented within a reasonable time, particularly as regards the authorisation process.

Market splitting applied in Nordic market as CM procedure generates revenue through price area difference when congestions occur. Generally, the procedure is in compliance with the CM guidelines. However, if not properly treated in regulatory framework the income from market splitting may introduce disincentives to TSOs to reduce congestion. For this reason these revenues have been 'earmarked' and can be used only in three purposes predefined in Regulation 1228/2003 (i.e. according to Article 6.6: a) guaranteeing the actual availability of the allocated capacity, b) network investments maintaining or increasing interconnection capacity, c) as an income to be taken into account by regulatory authorities when approving the methodology for calculating network tariffs, and/or in assessing whether tariffs should be modified).

The price differences with market splitting accounting for an income is collected by Nord Pool Spot and transferred to TSOs based on predefined criteria set in an agreement between TSOs and Nord Pool Spot. In year 2005 TSOs decided to use congestion income to five prioritised investments in the Nordic countries[6]. The latest agreement between Nordic TSOs to divide congestion income is from spring 2007 and it covers time period from 1.9.2006 to 31.12.2011.

To comply with the CM guidelines Nordic TSOs shall

- agree on criteria for sharing the congestion income in longer time perspective
- clearly establish beforehand the use of congestion income
- report on the actual use of the income

The procedure for the distribution of CM revenues shall be subject to review by regulatory authorities. Also the criteria to share the congestion income among the TSOs involved shall be reviewed by the respective regulators.

In the 2007 agreement TSOs have agreed on criteria for sharing the congestion income in longer time perspective (until end of 2011). However, Nordic TSOs have not yet submitted their proposal for the procedure for the distribution of CM revenues for review to regulators. Furthermore, criteria to share the congestion income among TSOs have not yet been submitted for review to regulators[7].

Article 6.2 requires that regulators shall be transparent regarding the use of revenues resulting from the allocation of interconnection capacity. Article 6.5 requires that annually by 31 July regulators shall publish a report setting out the amount of revenue collected for the 12-month period up to 30 June of the same year and the use made of these revenues together with verification that use of congestion income complies with Regulation 1228/2003 and the CM guidelines and that the total amount of congestion

[6] Nordel reports on five prioritised investment projects at Nordel website: www.nordel.org
[7] The Nordic TSOs submitted the agreement to distribute the congestion revenue to the Nordic regulators by the end of October 2007.

income resulting from the allocation of interconnection capacity has been devoted to one or more of the following purposes (ref. Article 6.6 in Regulation)

- guaranteeing the actual availability of the allocated capacity
- network investments maintaining or increasing interconnection capacity
- as an income to be taken into account by regulatory authorities when approving the methodology for calculating network tariffs, and/or in assessing whether tariffs should be modified

Nordic regulators have been requested by ERGEG as responsible for collection of national benchmarking reports to include in the annual benchmarking report to the Commission the amounts of congestion revenues collected as requested in the CM guidelines. However, according to CM guidelines reporting should be further developed to include compliance verification according to section 6 and annual reporting period from 1 July to 30 June and also information on costs of counter trading.

8 Conclusions

Congestion management guidelines under Regulation 1228/2003 were amended in the beginning of December 2006. This first Nordic compliance report evaluates the current status of compliance and sets out the further work to TSOs and regulators for ensuring full compliance with the CM guidelines. Furthermore, compliance across the Northern Europe region should be enhanced in further work.

Congestion management methods, co-ordination and timetable for market operations

The congestion management method applied to allocate all interconnector capacity in the Nordic market, i.e. implicit auction, fulfils the requirements set in the CM guidelines.

Remaining transmission capacity after day-ahead allocation is set for intra-day and balancing markets. Furthermore, in case of limiting cross-border capacity due to TSOs internal congestions, the CM guidelines set pre-conditions for allowing limitations in interconnector capacity. In such situations compliance with the CM guidelines can be ensured by describing transparently in the public domain of the website of Nord Pool Spot the reasons for limitations and their effects. Procedures to ensure this transparency must be further developed by the Nordic TSOs.

In order to avoid such long lasting limitations in cross-border transmission capacity due to either insufficient cross-border infrastructure or internal congestions more attention should be paid in the future to the joint Nordic network planning and where also the lead time required for building and construction authorisations and permissions should be taken into account in order to deliver timely expansions in the cross-border interconnectors and internal networks.

Generally, the current procedures meet the requirements for co-ordination and also the timetable for market operations if the Nordic market is considered. However, there is a question, whether the requirements for co-ordination and information exchange between TSOs should be more advanced to ensure the security of the Nordic power system and enhance the efficient functioning of the Nordic market.

According to the CM guidelines the national regulatory authorities shall regularly evaluate CM methods. This kind of evaluation has to be realised at least between national regulators on both sides of the interconnector, preferably together with all Nordic regulators. A common process for this regular evaluation will be considered by the regulators.

Transparency

The Nordic TSOs have published general information on CM methods, calculation of interconnector transmission capacity, and operational and planning security standards. Furthermore, the Nordic TSOs publish transparently most of the cross-border information both ex-ante and ex-post. Recently ex-ante information on planned outages and ex-post information of outages (planned and unplanned) of generators has been changed to include units larger than 100 MW to comply with the CM guidelines. Moreover, the Nordic TSOs have published realised actual values soon after real time and at the latest on the following day.

The Nordic TSOs publish information either on their own website or the Nord Pool website or on both. However, the minimum requirement of two years is not yet fulfilled in Nord Pool's public website although the same information may already exist for the two past years on the TSO website. The roles of various information publishing platforms (including in the future TSO website, the Nord Pool website and the ETSOVista website) and data consistency among these platforms should be further developed.

The Nordic TSOs already exchange power system data to enable load flow calculations. However, it might be advisable to enhance the data exchange procedures and make it more regularly (e.g. daily) and automated to ensure maximising of the transmission capacity.

The Nordic regulators have not yet reviewed fully the transparency requirements and their compliance with the CM guidelines. These reviews shall be conducted during the further work among Nordic regulators. Furthermore, more harmonised requirements as regards transparency within Northern Europe region are also studied within the ERGEG's Northern Europe Regional Initiative Implementation Group on transparency.

Use of congestion income

In the 2007 agreement TSOs have agreed on criteria for sharing the congestion income in longer time perspective (until end of 2011). However, the Nordic TSOs have not yet submitted their proposal for the procedure for the distribution of CM revenues or criteria to share the congestion income among TSOs for review to regulators.

National regulators have been requested by ERGEG (as responsible for collection of national benchmarking reports) to include in the annual benchmarking report to the Commission the amounts of congestion revenues collected as requested in the CM guidelines. However, according to CM guidelines reporting should be further developed to include compliance evaluation, annual income reporting of period from 1 July to 30 June and also information on costs of counter trading.

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