

Nordic NRAs proposal for NC FCA improvements

27th of Nov 2014

The Nordic NRAs refer to the previous dialogue with the European Commission/DG ENER in the work with the Network Code on Forward Capacity Allocation (NC FCA), and hereby present a common position paper. The paper addresses our main concerns related to the NC, specifically related to the chosen path to make Long Term Transmission Rights the preferred instrument of intervention even in situations where other instruments could provide a better solution.

1 INTRODUCTION

Regulation (EC) No 714/2009, Art 1a) states that the aim of the Regulation is, among others: “*setting fair rules for cross-border exchanges in electricity, thus enhancing competition within the internal market in electricity, taking into account the particular characteristics of national and regional markets*”.

In ACER’s Framework Guideline on Capacity Allocation and Congestion Management for Electricity (FG CACM), an Initial Impact Assessment (IIA) was presented. In this document, ACER describes the overarching objective of the CACM framework being (3.1): “*to ensure optimal use of the transmission network for cross-border trade, in support of the creation of one truly integrated, competitive and efficient European Internal Electricity Market.*”¹ The Nordic NRAs want to underline the importance of well-functioning day-ahead markets with implicit auction as a tool to achieve optimal use of the transmission network for cross-border trade.

As regards the objective to achieve an efficient forward market, the IIA states (3.1):

“The rules and regulations of the future CACM framework should also ensure reliable, fair and competitive price signals and liquidity of the forward electricity market. One important prerequisite for this is the liquidity and proper functioning of the day-ahead market in the EU. Moreover, access of market participants and actors to all relevant information necessary for efficient price formation and trade on a regional and European basis and for effective functioning of the market shall be ensured for the forward market as well.”

The Nordic NRAs strongly support any development in this direction, and want to underline the importance of efficient, well-functioning electricity markets with a high degree of transparency,

1

liquidity, low barriers to entry and confidence among market participants. However, we are of the opinion that the overall objective is not clearly reflected in the current version of the network code. In our view, achievement of a clearly defined objective should be the primary focus of the code and the choice of instruments/measures for reaching the objective should be subordinated.

2 INTENTION, OBJECTIVE AND INTERVENTION INSTRUMENTS

The objective and instruments in the network code should be based on the intention and text of the cross border regulation EC 714/2009² and the FG CACM³.

2.1 THE OBJECTIVE OF MARKET INTERVENTIONS

The objective of capacity allocation methods for the forward market is described in FG CACM 4.1:

“The objective of long-term transmission rights, physical or financial, is to provide market participants with long-term hedging solutions against congestion costs and the day-ahead congestion pricing, compatible with zone delimitation.

The CACM Network Code(s) shall foresee that the options for enabling risk hedging for cross-border trading are Financial Transmission Rights (FTR) or Physical Transmission Rights (PTR) with Use-It-Or-Sell-It (UIOSI), unless appropriate cross-border financial hedging is offered in liquid financial markets on both side of an interconnector.”

Our interpretation of this intention is that hedging opportunities for market participants shall be available and efficient regardless of Bidding Zone borders. The objective is hedging opportunities and not regulation of market design. Further, it is clearly stated that FTRs or PTRs should only be issued in case of lack of appropriate cross-border hedging opportunities in liquid financial markets.

In the latest proposal for NC FCA of 2nd April 2014 it is stated in Art 34⁴:

“Each Transmission System Operator shall issue Long Term Transmission Rights unless National Regulatory Authorities competent on the relevant Bidding Zone Border (s) have issued a decision that the Transmission System Operator shall not issue Long Term Transmission Rights pursuant to paragraph 3 of this Article”.

In our opinion, the current text in the code is not in line with the intention and text in the cross border regulation EC 714/2009 and the FG CACM, as the burden of proof has shifted. If a NRA should decide that the respective TSO should not issue LTTRs, the burden of proof lies within the NRA to perform an assessment of whether Forward financial electricity markets are well developed and have shown their efficiency (in addition to a consultation with Market Participants). Hence, the default solution in the code is for the NRAs to introduce LTTR, otherwise an exemption is needed.

² Regulation (EC) No 714/2009 on conditions for access to the network for cross-border exchanges in electricity

³ [http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Framework_Guidelines/FG%20on%20Capacity%20Allocation/FG-2011-E-002%20\(Final\).pdf](http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Framework_Guidelines/FG%20on%20Capacity%20Allocation/FG-2011-E-002%20(Final).pdf)

⁴ https://www.entsoe.eu/Documents/Network%20codes%20documents/NC%20FCA/140402_NC%20FCA%20Resubmission.pdf

We would like to emphasize that an evaluation of instruments to be used should be based on their ability to serve the objective. This link is not clear in the current version of the code. The code automatically calls for LTTR and a possible new market design in case of inefficient or insufficient hedging opportunities. The current version of the code presents no criteria to evaluate whether LTTR is the right intervention instrument. Such evaluation should be the responsibility of the competent NRA of the identified Bidding Zone with insufficient hedging opportunities. If LTTRs are introduced, it seems that no further action ever needs to be taken by the NRA, even if market participants still suffer from insufficient hedging opportunities.

In the opinion of the Nordic regulators, LTTRs should not be the goal in itself, but rather one of several possible instruments used for reaching the goal. Market Participants' needs and the benefit of the instrument to the market should be the basis for the evaluation of the instrument's ability to reach the objective.

2.2 EQUAL STANDING OF INTERVENTION INSTRUMENTS

Equal standing of LTTR and well developed financial markets is described in EC 714/2009 Annex 1 2.8:

"In regions where forward financial electricity markets are well developed and have shown their efficiency, all interconnection capacity may be allocated through implicit auctioning."

The text is adapted in FG CACM 4.1 and reads:

"The CACM Network Code(s) shall foresee that the options for enabling risk hedging for cross border trading are Financial Transmission Rights (FTR) or Physical Transmission Rights (PTR) with Use-It-Or-Sell-It (UIOSI), unless appropriate cross-border financial hedging is offered in liquid financial markets on both side of an interconnector."

Our interpretation to this intention is that mandatory TSO issued LTTR should be considered as an instrument to facilitate non-efficient markets. The final objective of such facilitation is an efficient market where participants can find appropriate hedging opportunities. When the final objective is reached, one should consider to remove the market stimuli.

2.3 INCREASED SOCIAL WELFARE SHOULD BE PRIORITIZED

With the introduction of LTTRs as an instrument, there is a probability for the TSO to experience a reduced congestion income as a function of mandatory hedging. The expected net benefit of LTTR should be positive to defend the introduction. For this to be true, one must assume that the increased benefit for the Market Participants, due to (presumably) reduced cost of hedging, will exceed the cost for "society" with the introduction of LTTRs. In case of an expected net negative benefit of the introduction of LTTR, other options for reaching the objective should be considered to achieve the objective. In our view, the introduction of LTTRs does not necessarily lead to a net benefit for the market. We would also like to refer to requirement in ENTSO-Es proposal for NC CACM of increased social welfare as a consequence of structural reforms⁵.

⁵ ENTSO-Es NC CACM of Sept 2012, p.4: *"A core element of this network code is the concept of social welfare. All provisions on systemic changes in the electricity wholesale market structure and functioning require social welfare to be increased as a consequence of such structural reforms."*

Throughout the process resulting in the NC FCA and CACM, no evidence or studies have been presented to prove that LTTRs are more efficient hedging instruments than contracts in financial forward markets. In ACER's IIA it is stated (p.56):

“A market in financial derivatives organised by third parties can offer cross-border hedging possibilities for market participants. CfD (Contract for Differences) is an example of such a product. Within regions where forward financial markets are well developed and have shown their efficiency, the introduction of PTRs and FTRs shall not be necessary. Financial derivatives not linked to transmission capacity can be considered as an adequate alternative, and be introduced or continued to be used. This is also clearly stated in Regulation (EC) 714/2009”.

Further, there is a large uncertainty as regards the legal and financial consequences of implementing LTTRs, also expressed in the IIA:

“As financial products are new to most of the energy markets in the European Union it is still not fully clear whether FTRs are linked to financial or legal side effects that have not been identified and assessed yet.”

Given that there are transaction costs related to the implementation of a new system and the lack of evidence that LTTRs is a superior hedging instrument compared with financial derivatives, it is hard to see a justification of having the introduction of LTTRs as a “default” in the code. The current financial Nordic power market has proven to contribute to sound and transparent prices, where the forward market with the system price as a reference price is characterized with a high liquidity and confidence among the market participants. Further, the rules in the financial forward market are commonly known for all market players, and there are systems established for market surveillance that is complying with the legal provisions related to financial trade. This organization is, by the Nordic NRAs, regarded to facilitate easy market entrance for new participants.

An introduction of LTTRs in the whole Nordic market may lead to less trade in the financial market and more bilateral trade between the TSO and the market participants. The Nordic NRAs have a concern that this could lead to a substitution effect and split the liquidity in both markets. If FTRs will be used to hedge the spread between two bidding areas, there will be less need for financial products (EPADs) as these are competing instruments. Hence, the liquidity in the forward markets could possibly decline.

2.4 CHOICE OF INSTRUMENT DEPENDING ON MARKET DESIGN AND MARKET PARTICIPANTS' RISK

Market Participants are exposed to the Bidding Zone risk of their hedging object (generation /consumption). The hedge instrument needed to cover such risk depends on market design and the participants' choice to use the market with the highest efficiency (lowest hedging cost). The market with the highest efficiency could be an unconstrained price market (system price), the local Bidding Zone or a

An assessment applying a methodology for quantifying social welfare is hence needed for drawing conclusions on social welfare implications. Social welfare is not a unique concept, as any quantification always comprises ideological assumptions on the creation and distribution of benefits for society. Due to this characteristic, it is necessary to require transparency on the implicit assumption of the methodology for quantifying social welfare.”

https://www.entsoe.eu/fileadmin/user_upload/_library/resources/CACM/120927_CACM_Network_Code_FINAL.pdf

neighboring Bidding Zone. It is important to bear in mind that the Exchanges are free to introduce new financial instruments if there is a demand for it. In addition, there are opportunities with regard to the establishment of “market makers” that can be explored if a bidding zone fails to have sufficient liquidity. Incentives and terms for the establishment of “market makers” can be agreed with the Exchanges⁶.

Examples of different hedging opportunities:

- The LTTRs as described in the current NC FCA from Bidding Zone to Bidding Zone would not give Market Participants a hedge in relation to the efficient unconstrained price market (UCPM). Introduction of LTTR in such markets will directly undermine and compete with the efficient market.
- Single EPADs linked to the unconstrained price can give Market Participants a hedge in the case of an efficient unconstrained price market.
- Pairs of EPADs linked to the unconstrained price can give Market Participants a synthetic fully firm LTTR in case a Bidding Zone to Bidding Zone hedge is needed.
- Single EPADs can be introduced from bidding Zone to Bidding Zone if needed. Such an instrument will be the equivalent to a fully firm LTTR obligation

As a general rule in competition and free markets theory, few and homogeneous products leads to less market fragmentation and more competition. The number of different types of products introduced in a market should in our view be kept to a minimum as long as the needs of market participants are being met.

3 PROPOSAL FOR SOLUTION TO REACH THE OBJECTIVE

The risk of implementing wrong instruments in the wrong markets with unwanted and unforeseen consequences should be the responsibility of competent NRAs of the identified non- efficient Bidding Zone to avoid. Therefore, several other options to reach the objective should exist.

Definition of the objective should be based on FG CACM, but not be instrument specific:

“provide market participants with long-term hedging solutions against congestion costs and the day-ahead congestion pricing, compatible with zone delimitation.”

Instrument-neutral criteria for the objective should be an evaluation of current hedging instrument(s) available for Market Participants under existing market design. The evaluation should be based on the availability of qualified hedging instruments and the efficiency of these instruments measured by hedging cost (based on spread). The criteria are described in ACERs recommendation on the NC FCA of 22nd of May 2014 in Article 35(5) a) and b)⁷. The description is based on the Nordic proposal of 18.12.2013 (Appendix 1) and can be described as a two-step process:

⁶ Today, Nasdaq OMX has agreements with several market makers in the EPAD market on lower fees for trade etc.

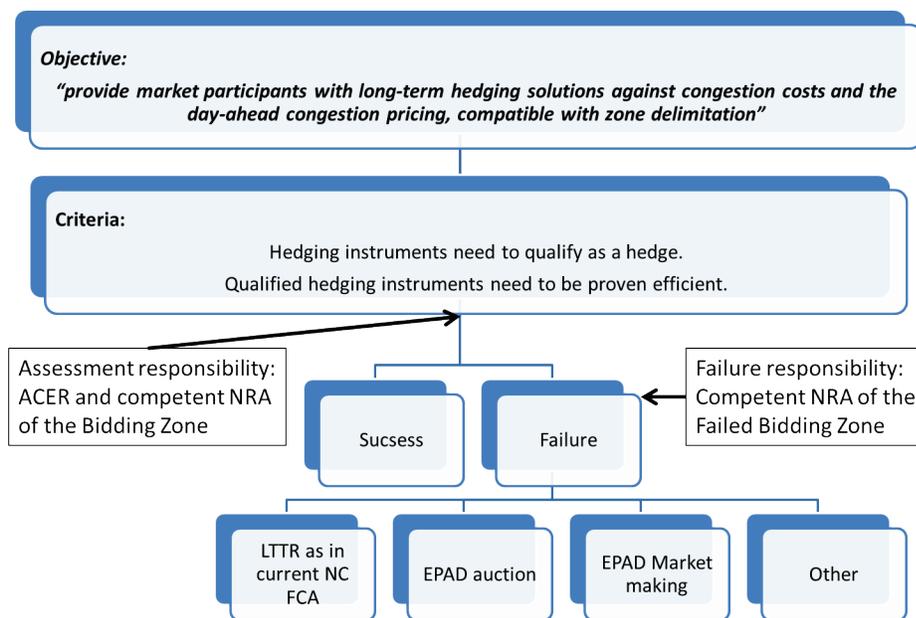
⁷ ACER: “Recommendation of the Agency for the cooperation of Energy Regulators No 02/2014 of 22 May 2014 on the Network Code on Forward Capacity Allocation”

1. Hedging instruments need to qualify as a hedge⁸.
2. Qualified hedging instruments need to be proven efficient⁹.

All hedging objects are allocated in a specific Bidding Zone. Therefore, hedging opportunities should be evaluated Bidding Zone by Bidding Zone. If a Bidding Zone is evaluated to have insufficient hedging opportunities, the responsibility of finding an appropriate intervention instrument should be addressed to the competent NRA.

Intervention instruments for improving hedging opportunities could, but do not necessarily have to, be based on cross-border hedging instruments (e.g. Bidding Zone forwards is a hedge against congestion cost). Hence, the instruments to achieve the objective should be optional. One of the options could be LTR as described in current NC FCA, other options could be financial instruments, e.g. EPADs in combination with forward contracts, etc.

Proposal for new NC FCA structure:



Based on a clear objective with quantified criteria, the task of planning how to reach the objective should be on the responsibility of the competent NRA of the identified Bidding Zone with non-efficient hedging opportunities.

If the intervention instruments involved in the plan include cross-border instruments putting a burden on TSO or Market Participants in neighboring Bidding Zone, competent NRAs on both sides of the border should be involved. If the instruments involved in the plan has a direct impact on physical flow in the Capacity Calculation Region, all competent NRAs of that region should be involved in the decision. NRAs

⁸ FCA NC A34 P4 Criteria Proposal DG Energy; Guideline Article 34 Nordic Proposal: Interpretation of Article 34 (5 a)

⁹ FCA NC A34 P4 Criteria Proposal DG Energy; Guideline Article 34 Nordic Proposal: Interpretation of Article 34 (5 b)

of the Capacity Calculation Region should be entitled to issue their opinion on the plan. The opinion should be based on the plan's ability to reach the objective and its criteria.

4 CONCLUDING REMARKS

In the latest NC FCA proposal, issuing LTTR is the only NRA commitment in markets with non-efficient hedging opportunities, without a demand for a feasibility study showing the suitability of LTTR as an intervention instrument for the specific market. An exclusive commitment to LTTR could lead to unwanted and unforeseen consequences in some markets and prove to be insufficient in other markets.

For the Nordic electricity market, the Nordic NRAs share a concern that a potential introduction of LTTRs across the whole Nordic region could be detrimental to efficiently developing the Nordic market due to a splitting of liquidity in the existing financial market. We want to emphasize the need for further development of the existing financial market and improvements related to liquidity, potential barriers etc. Hence, we are of the opinion that the network code should not have LTTRs as the default solution, but should allow for measures that reaches the objective of the regulation. We propose a structural rewrite of the code, which will allow a stronger commitment for all NRAs to achieve the final goal of having a well-functioning and efficient EU internal energy market (IEM).

5 APPENDIX 1: PROPOSAL FROM THE NORDIC NRAS FROM DEC 2013

I. Introduction

The NRA's of the Nordic countries Norway, Sweden, Finland and Denmark (NVE, Norway; EMV, Finland; DERA, Denmark; EI, Sweden) met the European Commission in the beginning of November 2013. The purpose of the meeting was to discuss and understand where each party is coming from on the issue of long term cross border trading and the instruments needed to do that.

The NRA's were challenged by the Commission to take active part in the further development of the NC FCA, which the Commission said that they were planning to complete with more detailed instructions on and criteria for assessing hedging opportunities and the functionality of financial markets.

In our work to improve the criteria, we have chosen to make use of the international accounting standard IAS39, which (among other things) deals with defining which instruments that constitute an efficient hedge for a certain position, as well as the so-called "Richard Roll's model", which is an instrument to assess market efficiency by studying implicit bid-ask-spreads. Both of these pieces of work represent well established standards and clear criterion for the assessment, which we believe will give European NRA's the confidence to also make decisions on it.

Our proposal is therefore to include these two measures in the methodology to be outlined in Article 34 of NC NCA.

Our proposal will be merged into ACER EWG documents and presented for the members on the ACER EWG meeting 9. January 2014

Since we have performed our work with a tight schedule, there are most certainly areas where our proposal could be further improved. Therefore, we look forward to having a well-informed and constructive continued discussion on the matter.

II. NC FCA Article 34 Nordic NRA Proposal

NC FCA Article 34 (4) and (5) amended to read:

4. *The decision in paragraph 3 of this Article shall be based on an assessment, which shall include at least:*
 - a) *a consultation with Market Participants about their needs for cross zonal risk hedging opportunities on the concerned Bidding Zone Border(s) not older than xx months ; and*
 - b) *an evaluation performed in a coordinated manner on whether Forward financial electricity markets are well developed and have shown their efficiency relative to needs of hedging opportunities. Such evaluation shall be based on transparent criteria pursuant to paragraph 5 and shall not be older than four years*
5. *The criteria for the evaluation mentioned in point (b) in paragraph 4 of this Article shall include at least an assessment of:*
 - a) *Availability of relevant hedging opportunities for the Bidding zone*
 - i) *The forward markets available to Market Participants is to be considered to deliver relevant hedge opportunities if a prospective regression test of Bidding Zone Day Ahead price and Underlying Day*

Ahead price of the hedging product gives a satisfactory result in accordance with the International Accounting Standard 39 (IAS 39) adopted with the Commission Regulation (EC) No 1126/2008.

- b) *Efficiency of relevant financial hedging products offered on forward markets*
- i) *Bid-ask spread efficiency for each product compared to its corresponding implicit spread. In case the hedging product consist of a combination of products the equivalent spread shall be computed (e.g. SE3 price = System price + Stockholm EPAD Price or DK1 price = PHELIX price + TR DE-D1 price).*
 - ii) *Traded volume for each product referred in 5 b) i).*

III. Guideline Article 34 Nordic Proposal

3.1. Interpretation of Article 34 (5 a)

IAS Quantitative test of relevant hedge opportunities criteria is based on Commission Regulation (EC) No 1126/2008 International Accounting Standard 39 (IAS 39):

Definitions provided in IAS 39:

- A **hedged item** is an asset, liability, firm commitment, highly probable forecast transaction or net investment in a foreign operation that (a) exposes the entity to risk of changes in fair value or future cash flows and (b) is designated as being hedged.
- A **hedging instrument** is a designated derivative or (for a hedge of the risk of changes in foreign currency exchange rates only) a designated non-derivate financial asset or non-derivative financial liability whose fair value or cash flows are expected to offset changes in the fair value or cash flows of a designated hedge item.
- **Hedge effectiveness** is the degree to which changes in fair value or cash flows of the hedged item that are attributable to a hedged risk are offset by changes in the fair value or cash flows of the hedging instrument.

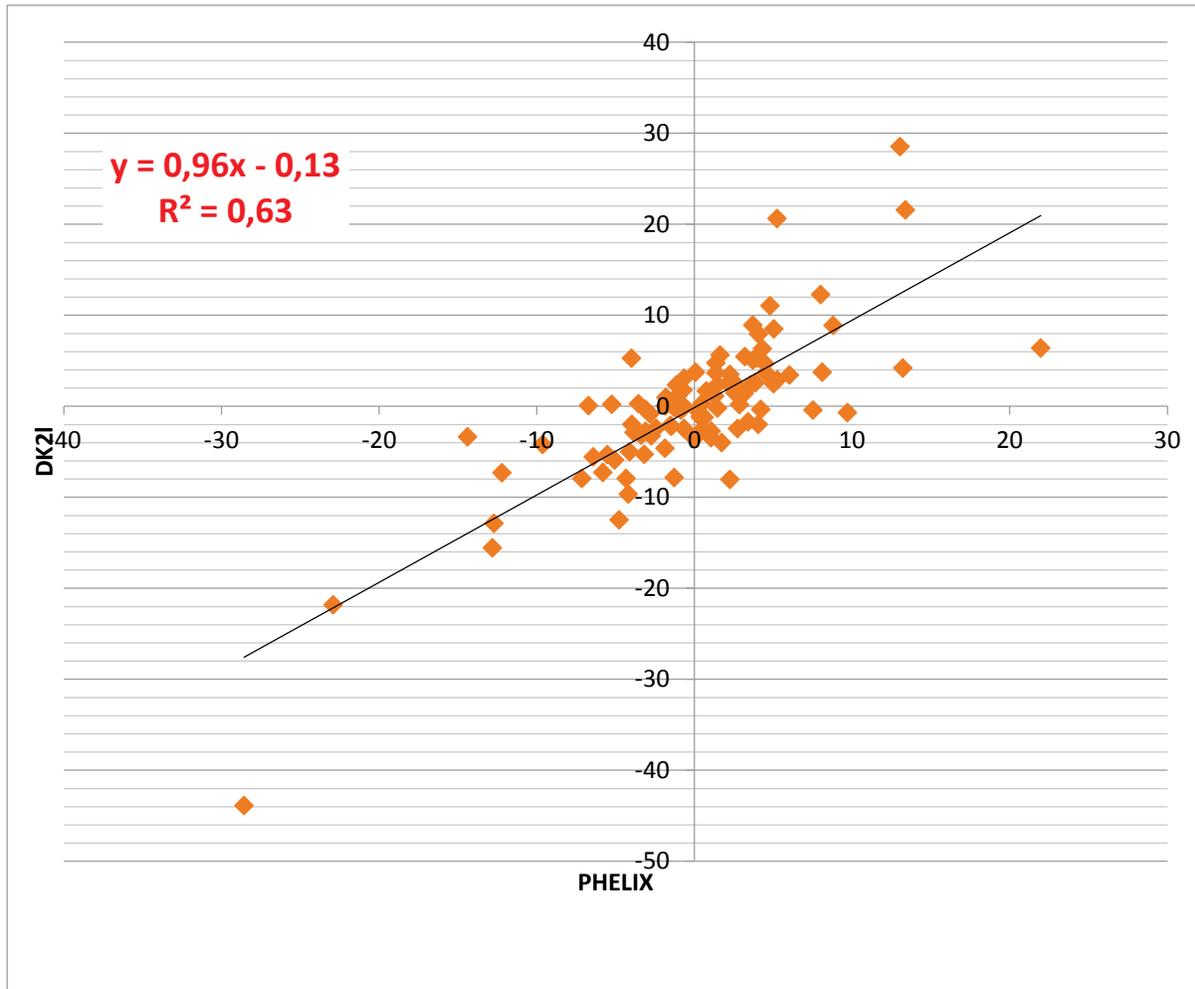
Hedging efficiency criteria for each individual Bidding Zone are set according to EC 1126/2008 IAS 39 AG100. A linear regression model is used for prospective efficiency testing:

- a) Linear regression $Y = aX + b + r$
- b) Hedged Item (Y) = Bidding Zone Day Ahead price change
- c) Hedged Instrument (X) = Hedging Product Underlying Day Ahead price change
- d) Resolution = Weekly average
- e) Time frame = Rolling 104 Weeks
- f) Constraint 1: a = Between 0,8 – 1,25
- g) Constraint 2: R-squared = Correlation $(Y:X)^2 \geq 0,8$

Quantitative limits for Constraint 1 (f) and Constraint 2 (g) is based on IAS 39 AG105 and US GAAP FAS 133 and reflects common international auditor practice.

The hedging instrument will be identified as a relevant hedge opportunity if Constraint 1 and 2 are satisfied.

Example: Prospective efficiency testing DK2 vs. PHELIX



- Slope $a = 0,96$, Constraint 1 ok ($\geq 0,8$ and $\leq 1,25$)
- $R^2 = 0,63$, Constraint 2 **not** ok ($\geq 0,8$)

The regression test on Day Ahead Prices between DK2 and PHELIX fails. Hedging Instruments with PHELIX as Underlying Day Ahead price is not an efficient hedge for DK2 Hedging items.

3.2. Interpretation of Article 34 (5 b)

An efficient market (as defined by Eugene F Fama (1970)), is one where all pertinent information is available to all participants at the same time, and where prices respond immediately to available information. Fama (1991) suggests that prices adjust efficiently to firm-specific information. He further states that the market efficiency is coupled with the price discovery mechanism and they are in that sense inseparable and thus have to be analysed jointly.

Two optional methodologies have been suggested for measuring the efficiency. Fama (1970) used the return of market participants as a way to assess the efficiency of the markets. Using this methodology

asks for access to company internal information on returns of different business units, that the companies often regard as confidential. An alternative method, proposed by Roll (1984) is based on measuring generally publicly available market spreads. In this method the actual market spreads shall be evaluated by a calculated implicit spread abbreviated from the work of Richard Roll “A Simple Implicit Measure of the Effective Bid-Ask Spread in an Efficient Market” in “The Journal of Finance, Vol. XXXIX. NO. 4, September 1984.

<http://www.bauer.uh.edu/rsusmel/phd/roll1984.pdf>

A challenge using Roll's measure is that the sample auto covariance is frequently positive, rendering the estimate incalculable. To overcome this challenge - the approach of Harris (1990) converting all positive numbers to negative (absolute value) is adopted.

Where:

Bidding Zone Hedging Product (BZHP)

- a) Minimum Spread % = 5%
- b) BZHP Close = Official closing price or last traded BZHP
- c) BZHP Spread = BZHP Ask – BZHP Bid
- d) BZHP Spread % = BZHP Spread / BZHP Close
- e) BZHP Short term change = 5 days rolling change in BZ Close (approx. weekly)
- f) BZHP Long term change = 21 days rolling change in BZ Close (approx. monthly)
- g) BZHP Implicit spread = $2 \times \text{Square root (Absolute value (Covariance (BZHP Short term change and BZHP Long term change))}$
- h) BZHP Implicit spread % = Maximum (Minimum Spread % or BZHP Implicit spread/ BZHP Close)

The minimum threshold value is set because Market Participants can under certain circumstances (e.g. low volatility) lack the motivation to tighten up spreads. A parallel to option pricing where option price will tend to stop at a relevant asymptotic value even if theoretical implicit price is lower.

Example: The product is 1. Position Quarter System price at NasdaqOMX (October 2005 – December 2013). The history is spread adjusted so it does not reflect actual price levels (Spread on right axis and Price on right axis).