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ERGEG Public Consultation on Guidelines of Good Practice for Electricity Balancing Markets Integration (E05-ESO-06-08):

Comments from EnBW Trading GmbH

EnBW Trading appreciates the possibility to comment the ERGEG Public Consultation on Guidelines of Good Practice for Electricity Balancing Markets Integration (E05-ESO-06-08). First, we point out some general aspects of the balancing market. Secondly, we comment on ERGEG's General Considerations and thirdly, we comment on ERGEG's Guidelines.

I. General comments

Taking into account the total amount of balancing capacity in relation to the wholesale power market, the **balancing market seems to be of minor importance**. For example, in Germany the TSOs look for balancing capacity of 3,000 MW in day-ahead auctions – which is not that much compared to the total installed generation of 101,700 MW (power stations of the "general supply" – no industrial and/or wind turbines included).
By comparing the total demand of balancing energy to the traded **volume** in the wholesale market, the **balancing market is a small segment** of the power market: In 2005, the traded volume at the German EEX was 602 TWh in spot and futures markets, if the physically traded volumes in the OTC (=over the counter) markets is included, the total estimated volume in the German wholesale power markets (spot, forwards and futures) is about 3,000 TWh per year. The volume of balancing energy is much less: 3 TWh per year estimated automatically activated reserve energy and 0,5 TWh per year estimated manually activated reserve energy: 3,000 MW multiplied by 10% multiplied by 8,760 hours = 2,9 TWh and 3,000 MW multiplied by 2% multiplied by 8,760 hours = 0,5 TWh). Of course, the reserves are not always activated with 2% (manually) or 10% (automatically) of the total capacity by

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the TSOs. In some hours, they are activated with 100%, but in others with a small percentage only.
Bearing in mind the small volumes of balancing markets compared to wholesale market volumes we suggest the following **roadmap on the way to competitive pan-European wholesale and balancing power markets:**

1. implementation of liquid regional spot markets
2. implementation of liquid forward/futures markets
3. harmonization of market based congestion management methods for cross border capacity on short and long term basis
4. harmonization of cross-border intra day trading procedures (harmonization of gate closure etc.)
5. create a suitable level of market transparency so that individual production/trading positions are anonymously aggregated in a way that new market entrants get sufficient information to have confidence in the market and to avoid that market power is exercised.
6. harmonization of market based procurement of balancing capacity and energy.

Some Regional Markets are on a good path to reach step 4 within the next year – e.g. the NWE (Northwest Europe) market, but others have still not reached step 2 - especially in Southern and Eastern Europe there is still a long way to go. Therefore we appreciate ERGEG's initiative to integrate balancing markets but steps 3 and 4 (harmonized cross-border trade within the EU including the Swiss-Italian border and harmonized intra day scheduling procedures between the TSOs) are milestones to be realized first before integrating the balancing markets.

Especially in times of high demand and only low spare capacity on the production side the balancing markets have a **stabilizing effect for the UCTE network**. Production capacities are withhold from the wholesale market and kept as positive reserve capacity for unpredictable system situations. Concerning positive reserve activation this is important due to so called "fly-up"-situations which occur from time to time at the exchanges. Fly ups are indicators for extreme tight market situations with only a small amount of spare production capacity left. In this context we refer to a recent paper[1], which analyzes the reasons for extreme prices at European power exchanges. The paper describes individual hours where the price exceeded the variable production costs of the most expensive German power plants. On the other hand, negative reserve has a stabilizing effect to the system when exchange prices tend to be zero. Negative capacity is kept as reserve capacity for unpredictable system situations in the opposite direction. In such situations the system is at the limit to take over additional power, e.g. due to additional wind production or unexpected load reductions.

Concerning the design of balancing markets in the future, it is important to have a look at the individual goals that different market actors want to achieve:

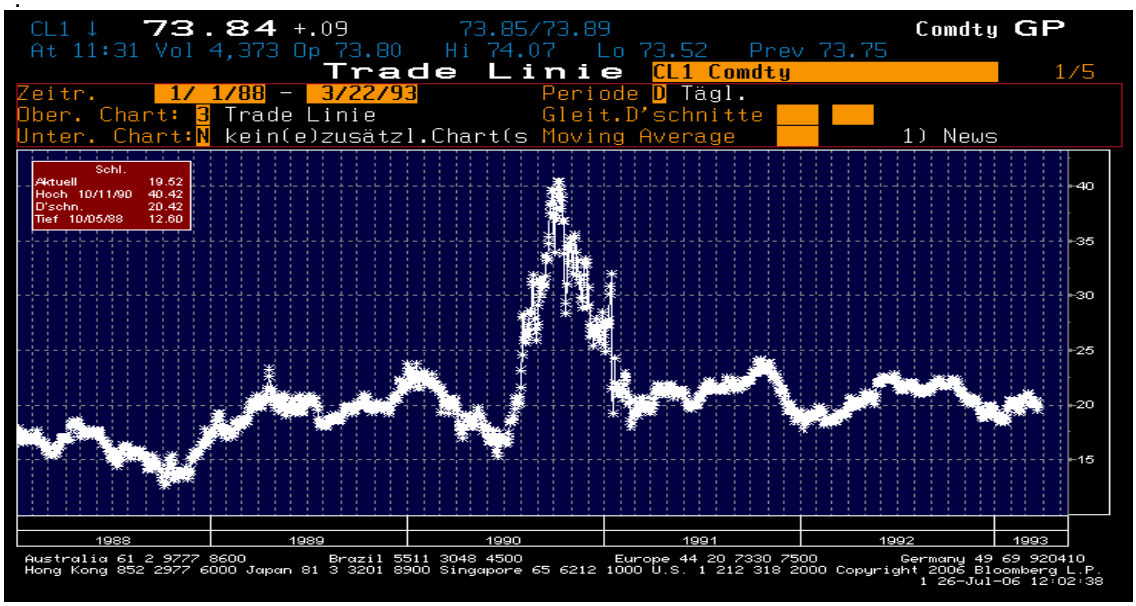
Who?	Which goal?	How to achieve?
All market actors	Stability of the whole system, robust budget planning not just depending on volatility of the spot market	Distribution of buying process by TSOs of balancing reserves along the time axis. **Not: buying of balancing energy just in day-ahead or intra-day markets („best of the rest").**

[1] Lang, Schwarz, Kähler: Analyse von Fly Ups am Spotmarkt der EEX, Energiewirtschaftliche Tagesfragen, Ausgabe 7/2006

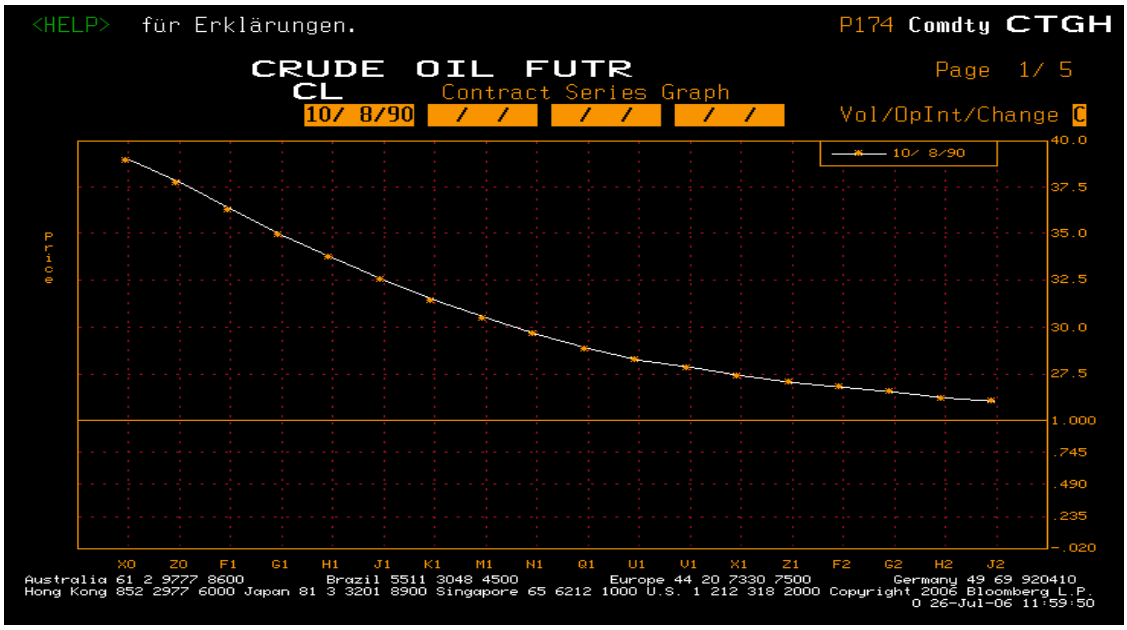
		Percentage of balancing energy to remain in each control / price area due to ensure grid stability in critical situations (e.g. unplanned outages, real wind production deviates from estimated wind production, ..) with regard to unexpected separation of grid areas
Power producers	Optimization of selling strategy of power, flexibility of selling power either to spot/forward markets or to the balancing market, investment signal to invest in power plants suitable for balancing	Long and short term auctions of the TSOs to buy capacity for balancing
Balancing groups	Low financial risk concerning use of balancing energy	Foundation of a competitive balancing market
(almost?) all actors	No signals for arbitrage between balancing and spot markets	Balancing price and exchange spot price coupled by formula or other appropriate pricing structure
All actors	Low transaction costs	High minimum balancing lots, long-term auctions of balancing capacities
Traders	High values of NTC (net transfer capacity) at grid bottlenecks	Preferably no reservation of capacity at congested border for balancing power
All actors	Efficient competitive market for balancing power	European-wide (or at least regional market-wide) standards for qualification to participate in balancing markets, similar IT formats, publication of prices and volumes in due time (close to real-time) by the TSOs

It is obvious that some goals compete with others – explicitly we want to point out the buying process along the time axis: If one goal is to encourage new entrants to join the balancing market (goal has been mentioned by ERGEG in chapter 7 "dealing with market power"), then the **development of a forward market for balancing capacity** is a must.

If we take a look at other commodity markets (oil market, wholesale power market), investment in new production capacity took place only when respective price signals indicated to do so. For example during the Gulf War 1990 the oil price peaked – but only in the spot market. The forward curve remained low – see the following charts:



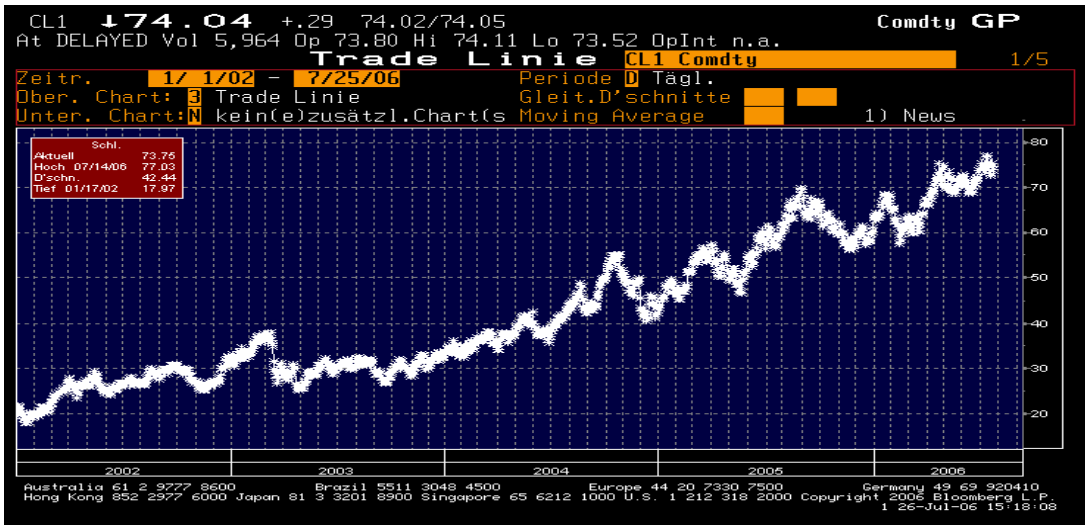
Oil spot market 1988-1993 peaking at Oct 10, 1990 (First Gulf War), source: Bloomberg



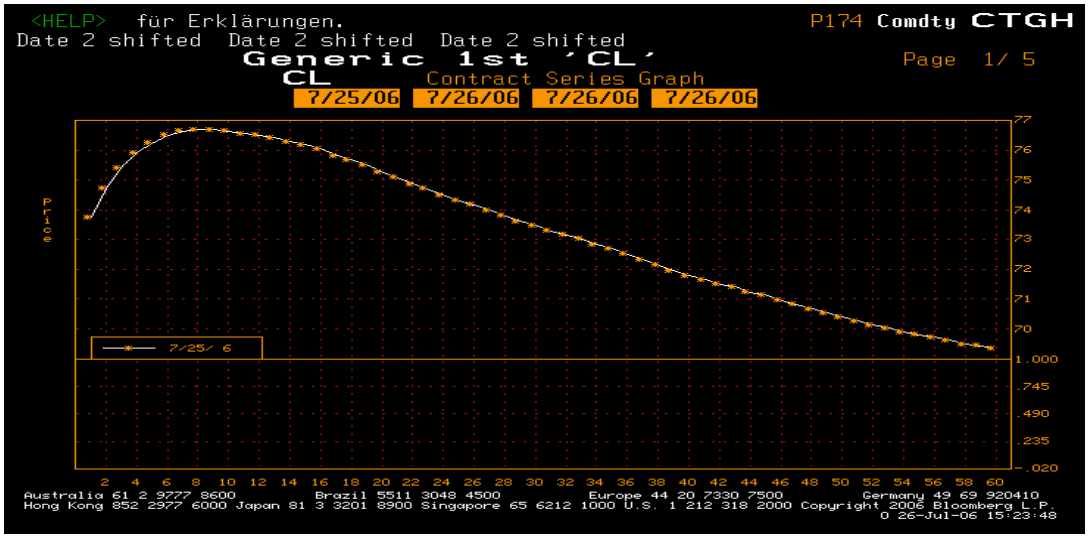
Oil forward curve at Oct 10, 1990: price for delivery 12 months in advance (Nov. 91: 26,5 USD/Barrel) is 32 % below the spot price (Nov 90 : 38,70 USD/Barrel), source: Bloomberg

During the years between 1990-2000 there have been almost no investments in new oil production and refinery capacity because of the fact that the forward price curves did not give any signal that such an investment could be successful in terms of satisfying returns-on-capital.

However, in the years 2002-2006, the situation changed significantly as the following charts indicate:



Crude Oil price (spot) 2002-2006, source: Bloomberg



Oil forward curve at July 25, 2006. price for delivery 12 months in advance (Sep. 07: 76,40 USD/Barrel) 4% above spot price (Sep. 06: 73,75 USD/Barrel), source: Bloomberg

Only since the **rise of forward prices new investments** in terms of the exploration of new oil fields have been reinforced, namely in non-OPEC states such as Canada or Russia.
The compatibility between power and oil markets is obvious: Only since a **liquid forward and futures market sending out** respective **price signals** has been established in Germany, various projects to build new power plants have been initiated. Since the 1990s, this has been the case for subsidised wind or CHP plants only. It has been the specific shape of the power price forward curve in 2004/5 which **encouraged investors** to get involved in building new capacity. Some fly-ups in the spot market happened already during Dec 2001 when a cold spill came over Europe (with EEX day-ahead baseload price peaking at 240 EUR/MWh, the highest until July 27, 2006 (301,5 EUR/MWh)). Such fly-ups in the spot market indicate an extreme shortage of production capacity in the European power market at present but not in the future. So they are not relevant for investors to participate in the market. The conclusion is that if **new production capacity** should **contribute to liquidity in balancing markets**, the creation of **liquid** balancing **forward** markets in the aftermath is mandatory.
Of course, we realize that the ERGEG consultation deals with the balancing market beginning with hour 0-1 of each relevant day. According to that, the **balancing process** is an **intra-day** process. However, the process of TSOs to **acquire balancing capacity** should be a **process along the time**

axis - in order to buy balancing capacity on a yearly/monthly/daily basis. Otherwise in tight markets (summer heat waves, winter cold spells) there is an apparent risk for TSOs not getting enough reserve capacity.

II. Specific comments ERGEG's general considerations

Balancing mechanisms

We want to stress that we fully support ERGEG's view that balancing markets should not be used to exercise market power and that is the reason why we strongly encourage new entrants to join the balancing markets. However, the only way to achieve this is to create forward markets (as well as intra-day) for balancing capacity as mentioned above.
Moreover, we appreciate very much ERGEG's goal to create robust market conditions in a way that market power can not manipulate the market price. However, if a market just relies on intra-day and day-ahead markets, in our eyes it cannot be robust. If forward prices are high, no producer will hold back capacity in order to serve the balancing market and so there will not only be fly-ups in the spot market but also in the balancing markets. These are situations where only a few producers have spare capacity and consequently the risk of exertion of market power has to be considered. If at least a part of balancing capacity is acquired in advance on forward markets by the TSOs, then this risk is reduced.

Market transparency

We fully support transparent markets – as an example we want to point out that the German balancing market is in our eyes the most transparent across Europe – there are no secrets concerning prices for balancing energy (volumes and prices) **and** balancing **capacity** (also volumes and prices). We encourage other TSO to join the German way to create transparency and thus to encourage new entrants to join balancing markets.

Guidelines of Good Practice

We fully support the ultimate aim of ERGEG to integrate balancing markets in order to minimise costs and improve security of supply. However, these goals compete with each other. Security of supply can only be achieved if TSOs buy balancing capacity not only on a day-ahead or intra-day basis ("best of the rest"-principle) but also in advance (diversified procurement strategy, hedging of risk). The minimization of costs can be achieved by creating liquid intra day markets – but it will only work if the market is well supplied - more and more situations in the past and at present indicate that this is not the case (fly-ups) – and therefore the reliance on spot markets (day-ahead and intra day) only is not the appropriate way to achieve this goal.

Integration of balancing markets

We support the harmonization and standardization of market features, timescales, IT-formats on a pan-European basis or at least on the basis of Regional Markets in order to have no obstacles for cross-border delivery of energy.

III. Specific comments on ERGEG's Guidelines for Good Practice for Balancing Markets Integration

General Principles

We strongly support ERGEG's vision of creating clear and transparent balancing markets and look forward to such markets not only in Germany but also in other European markets as well.

Security of Grid Operation

We welcome all efforts to reduce costs of balancing capacity and energy including load participation if the load reduction can be activated by the TSOs in due time in order to maintain security of grid operation.

We also support the reduction of barriers for new market entrants who want to invest and to take risk. However, the minimum offer size as mentioned by ERGEG can not be reduced to almost zero (say 5 MW or so) for technical reasons because then the contribution of such small units to the balancing market can not be measured (or the investment to do so is in no adequate relation to the added value).

Acquisition of transmission capacity for balancing purposes

We strongly support ERGEG's view that system security depends on the availability of sufficient balancing power and energy within each control area/price area.
In this context we want to stress **that capacity at congested borders** should not be withheld by TSOs in order to allow cross border balancing energy flows. We think that scheduled long-term energy transports should always have priority one at congested borders – because market participants usually pay a lot of money in auctions to get such firm capacity. Scheduled energy flows use the congested section of the grid more efficiently than more or less randomly occurring "stochastic" balancing energy flows.

Efficiency and competition

Due to the importance of the balancing market in terms of stability for the network, we strongly support to introduce capacity payments for holding balancing capacity – as the German example shows. Such capacity payments need not necessarily result in high balancing costs – if the mechanism of TSOs to acquire balancing capacity is coupled to the balancing energy price, i.e. the producers should have to submit bids concerning capacity and at the same time concerning energy – and the decision if the bid is taken by the TSO or not should depend on both capacity and energy price bid – thus a competitive market structure is established.

Operation of balancing mechanism and market

As a condition to start with the first cross border intra day energy flows, we suggest not to spend too much time on issues such as "duration/start time/ramping-up time etc." First, the focus should be laid on flexible scheduling procedures (numerous intra day gates for nomination of schedules, minimization of time between gate closure and delivery) before optimizing technical details on the production side.

Transparency and Information Management

We strongly support ERGEG's statement that all information required for effective functioning of balancing markets should be published. Therefore we suggest that TSOs should inform about auction results of buying balancing capacity should be published soon after the auction. Moreover, information on the balancing status of control areas should be published in due time as well as prices for balancing energy. However, individual bids and offers of balancing capacity should be anonymous and/or aggregated appropriately.

IV. Summary of EnBW Trading comment

We would like to point out our roadmap to competitive wholesale and balancing pan-European power markets as mentioned above.
Competitive balancing markets are important and we strongly support ERGEG to achieve this ambitious goal on a pan-European basis. But first it seems to be an important prerequisite to create harmonized day-ahead and intra day scheduling procedures between TSOs (harmonization of gate closures…) and to create competitive balancing markets on a national basis (see the German example) before optimizing different balancing markets on a cross border basis bearing in mind that such markets so far exist in a few EU member states only.

Due to its central position in Europe, we want to point out that the Swiss market should be included in the harmonization process on the way to a pan-European power market. For non EU members the same road map as for other EU member states should be applied, i.e. with first priority implementation of transparent market based cross-border allocation procedures at all borders and ultimately with second priority optimization of intraday and balancing processes. In our view it should not be possible that non EU countries take part in balancing makets of EU-25 countries when the same non EU-Countries do not apply the principle of reciprocity.

So we would strongly recommend ERGEG that countries which are not a member of the EU-25 have to **implement market based mechanisms at all their borders** in accordance with the EU regulation 1228/2003 as a prerequisite **before** they are allowed to **participate in balancing markets** of EU-25 countries. Moreover, EU-25 members should also be able to participate in balancing markets of other countries. If such markets don't exist already, they have to be created in a competitive non-discriminatory way – in other words the **principle of reciprocity** should be applied between the EU-25 and other countries **(harmonization of market conditions)**. So the message is:

1. implementation of liquid wholesale markets (spot **and** forwards / futures),
2. implementation of market based cross-border allocation procedures,
3. implementation of cross border intraday markets by giving priority to scheduled wholesale market transactions.

The implementation order should be: first 1, then 2, then 3, not vice versa and all 3 by applying the principle of reciprocity.

No "cherry-picking" of individual countries/market participants should be allowed (no ring-fencing of own markets and at the same time profit-taking from other markets).

Finally we encourage ERGEG to go the way forward to pan-European power markets even if it is a "bumpy road" and we would appreciate very much if we would be involved in the further development of the consultation process by ERGEG. If you have further questions concerning the EnBW Trading commentary please don't hesitate to ask.

Kind regards,

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