

## APPENDIX C – FIVE KEY ARGUMENTS FOR OWNERSHIP UNBUNDLING

### A. INCREASING COMPETITION

**An unbundled energy market will, by providing non-discriminatory network access, encourage more competition in generation and trade, which will result in the despatch of the most efficient production. This reduces cost and is also beneficial in environmental terms because it makes it easier for renewable energy generators to access the network.**

#### **Cases:**

Last year, Germany introduced a legal provision specifically targeted at new electricity generators. Experience has made the German government improve the legal basis for the connection of new generation capacity.

The main conclusion was that a lack of transparency and the latitude that TSOs have in managing the grid increased risks for independent generators to an extent that new investment was compromised.

One aspect of the new provisions is that network companies have to publish actual and forecasted congestions in their grid. The ordinance also has detailed provisions on connection tariffs to facilitate new investment to help facilitate new investment.

A study by Copenhagen Economics showed that higher levels of unbundling lead to lower electricity prices (*Copenhagen Economics, Market Opening in Network Industries, 2005*)

### B. AVOIDING CONFLICTS OF INTEREST

**Only by completely separating ownership and control of networks is it possible to guarantee that network investment to reduce congestion and enhance security of supply will be determined by the needs of the market rather than its impact on the profits of integrated energy businesses.**

#### **Cases:**

A recent example from Italy clearly shows the conflict of interest that occurs due to integration. Italian wholesale spot prices averaged at 74.75 €/MWh in 2006, whereas the German prices were at 50.79 €/MWh. Any increase in interconnection allows further imports to Italy and reduces wholesale market prices. Production amounts to some 300 TWh, of which 35 TWh are produced in oil power stations. The biggest producer has the highest share in all relevant technologies and produced some 100 TWh in 2005 of which 50 TWh were base load production. If the average wholesale price were reduced by 10 €/MWh this producer would lose up to 1 Bln €/yr in turnover. Probably some of the gas and most of the oil capacity would not run at all, so that profit loss would be between 500 Mio € and 900 Mio €/yr.

A study by Alesina et al. found that investments in the electricity and gas sector increases as the level of unbundling rises. (Alesina, A., et al., *Economic impact of regulatory reforms in the electricity supply industry: a panel data analysis for OECD Countries*, *Energy Policy*, 32(6)2004, pp.823-832)

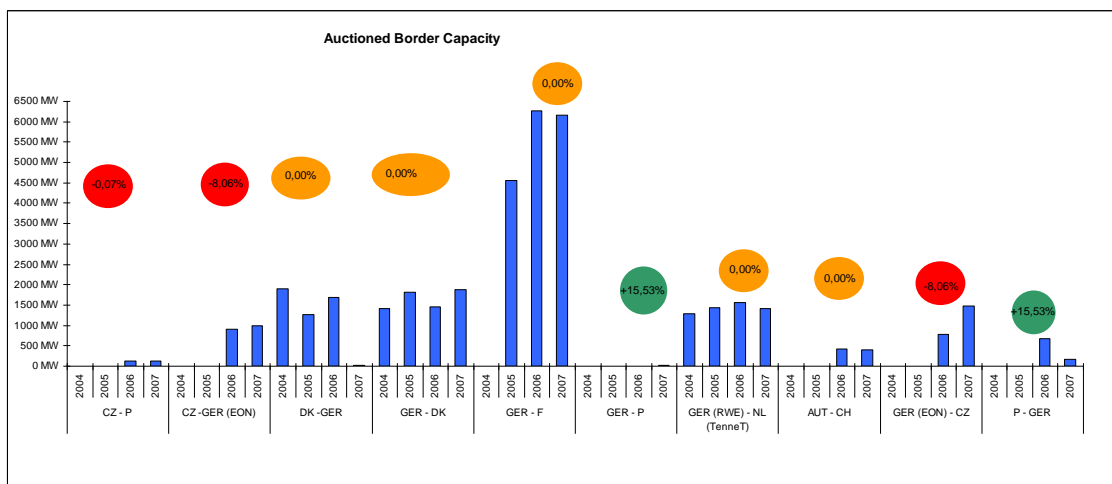
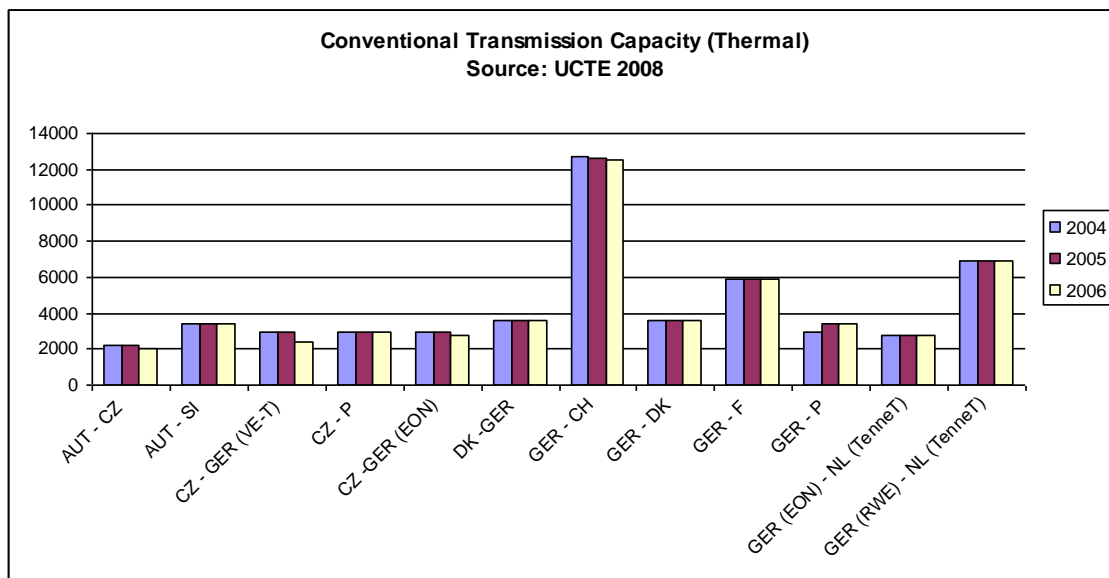
### C. MAXIMISING NETWORK EFFICIENCY

Only with full ownership unbundling is it possible to give the TSO incentives to operate the network at maximum efficiency and therefore at the lowest possible marginal cost. With bundled networks there is always the risk of integrated companies using network control to maximise short term profits.

#### Cases:

During recent years there have been allegations that integrated electricity companies are not investing in interconnection capacity and that integrated companies are earning substantial congestion rents.

The following two graphs shows that for several important interconnections neither the level of physical capacity nor the capacity available to the market has increased during recent years.



At the same time prices paid at auction for these capacities have been very high (e.g. prices at borders PI-Ger and Cz-Ger being on average 67 €/MWh and 33 €/MWh respectively). Postponing investment has two advantages for incumbents:

- a. Wholesale prices are stabilized at higher levels than would be the case with full interconnection. This allows especially marginal power capacity to be kept in production instead of becoming stranded investment.
- b. Returns from auctions are typically split between both TSOs on both sides of a congestion. The sum of auction returns at the borders (Dk, NI, D, F, AUT, PL, CZ) has been more than 1 Bln Euros in 2004-2007, which would be sufficient to build some 300 km of 400 kV lines.

This means that the integrated incumbent is able to operate its capacity as if the local market was not connected to other markets. In fact, congested interconnection is even better than no interconnection for companies in high price areas.

The advantage of market integration feeds itself through to customers only via reduced network tariffs if and to the extent that congestion rents are used to reduce transmission tariffs.

The OECD concluded that ownership unbundling sharpens the focus of network management on the network without the need for compromising with the other needs of an integrated holding. (*OECD, The benefits and costs of structural separation, January 10, 2003.*)

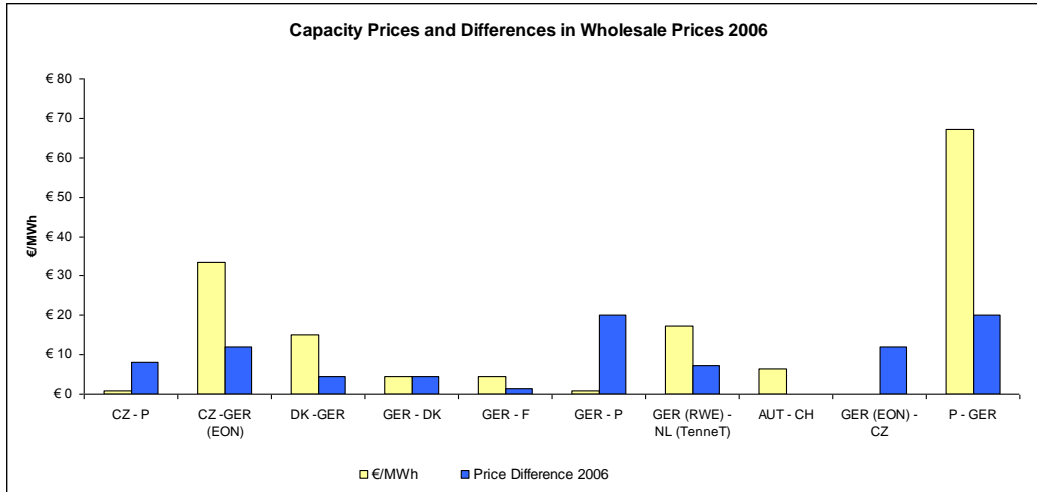
#### **D. MORE EFFICIENT REGULATION**

**Bundled networks or commercially or politically controlled ISOs will always require maximum oversight by the regulators to ensure (a) third party access is being provided to independent generators and (b) network investment is targeted to where it is most needed to reduce congestion. With independent TSOs the incidence and cost of regulation are minimal.**

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For example, as the following chart shows market participants value most the interconnection from the Czech Republic and Poland to Germany. However no new investment is planned at these borders, instead interconnection at other borders, such as the Dutch-German border, will be reinforced.



A study by Davies et al. concluded that competitors have difficulties obtaining market share when there is common ownership, despite considerable intervention by the regulator. Unbundling would, therefore, improve the effectiveness of regulation. (Davies, S. et al., *Does ownership unbundling matter? Evidence form UK energy markets, Intereconomics, Nov/Dec. 2007*).

Mulder et al. concluded that ownership unbundling would create annual benefits of several tens of millions of euros due to more efficient network management. (Mulder, M. et al, *Costs and benefits of vertical separation of the energy-distribution industry: the Dutch case, Competition and Regulation in Network Industries, 1(2)2006, pp. 197-230*)

## E. BENEFITS FOR INCUMBENTS

**There is evidence to support the view that state (taxpayers) and/or private shareholders in independent businesses would benefit from the sale of TSO network assets which would allow managers to focus investment on non-regulated sectors (e.g. production and retail distribution) where rates of return on capital are much higher.**

### Cases:

Meggison et al. found that privatisation generally has an increasing effect on productivity and efficiency. (Meggison et al., *From state to market: a survey of empirical studies on privatisation, Journal of Economic Literature, 39(2)2001*).

“To illustrate the share value evolution at the example of British Gas: On 14 February 1997, immediately before the demerger of Centrica, British Gas shares closed at a price of 247.5p. If you had bought 100 shares at that price and had subsequently reinvested all the dividends and returns of capital you would now hold 126 BG Group shares, worth 739p each, 125 Centrica shares, worth 373.5p each and now 60 National Grid shares, worth 795.5p each. Thus an investment of £100 would now be worth £756.05. On the same basis the £100 invested in the FTSE 100 would be worth £197.45.”

“In Spain stock prices for Iberdrola, Endesa and Union Fenosa, which sold their electricity network assets at the end of 2002, and TSO Red Electrica de Espana (REE) increased by up to 600% (for the period November 2002 to April 2007), compared to an increase of the Spanish stock market index IBEX 35 of 68% over the same period.”

“In the case of Italy, the share price of the incumbent electricity company ENEL was in the period from June 2004 to March 2007 developed similar to the evolution of the general stock market index even though during this period, ENEL gradually divested its network company Terna to a remaining shareholding of presently 5% (sale of 50% of Trna in July 2004, 13.86% in March 2005 and 29.99% in September 2005). During the same period, Terna outperformed the Italian stock market.”

“Comparing credit ratings of vertically integrated companies without network assets, no significant or systematic differences can be observed.” *(please refer to table below for Standard & Poor's, except for Rede Eléctrica Nacional (REN) rated by Companhia Portuguesa de Rating)*

*Above quotes referenced from: European Commission, Commission staff working document accompanying the legislative package on the internal market for electricity and gas (2007)*

### Credit ratings of large European energy companies (S&P ratings)

	18.6. 2007	1.1. 2007	1.1. 2006	1.1. 2005	1.1. 2004	1.1. 2003	1.1. 2002	1.1. 2001	1.1. 2000
<b>ownership unbundled TSOs</b>									
Enagas	AA-	AA-	AA-	AA-	A+	A+	NR	NR	NR
N.V. Nederlandse Gasunie	AA+	AA+	AA+	NR	NR	NR	NR	NR	NR
National Grid PLC	A	A	A	A	A	A	A	NR	NR
Terna SpA	AA-	AA-	AA-	AA-	NR	NR	NR	NR	NR
Red Electrica de Espana (REE)	AA-	AA-	AA-	AA-	AA-	AA-	AA-	AA-	NR

<b>Companies without transmission network</b>									
Centrica PLC	A	A	A	A	A	A	A	A	A
Endesa S.A.	A	A	A	A	A	A	A	A+	A+
Enel Spa	A	A+	A+	A+	A+	A+	A+	A+	NR
Energias de Portugal S.A.	A	A	A	A	A	A+	AA-	AA	AA
Essent N.V.	A+	A+	A+	A+	A+	A+	A+	NR	NR
Gas Natural	A+	A+	A+	A+	A+	A+	A+	AA-	AA-
Iberdrola S.A.	A	A	A+	A+	A+	A+	A+	AA-	AA-
Union Fenosa SA	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	A	A+	NR

<b>Vertically integrated companies</b>									
EDF S.A.	AA-	AA-	AA-	AA-	AA-	AA	AA+	AA+	AA+
EnBW AG	A-	A-	A-	A-	A	A+	A+	A+	NR
E.ON AG	A/A-1	AA-	AA-	AA-	AA-	AA-	AA	AA	AA
Gaz de France SA	AA-	AA-	AA-	AA	AA	AAA	AAA	AAA	AAA
Public Power Corp. SA (Greece)	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+
RWE AG	A+	A+	A+	A+	A+	A+	AA-	AA-	NR
Scottish Power	A-	A-	A-	A-	A-	A-	A-	A	A
Scottish and Southern Energy	A+	A+	A+	AA-	AA-	AA-	AA-	A+	A+
Vattenfall AB	A-	A-	A-	A-	A-	A-	A-	A+	AA-

Sources: Standard & Poor's, except for Rede Eléctrica Nacional (REN) rated by Companhia Portuguesa de Rating, S.A.; NR = not rated

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