



BritNed Development Ltd

*Application for EU exemption*

12 June 2006

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## **EXECUTIVE SUMMARY**

This document sets out BritNed Development Limited's ("BritNed") request for an exemption from Article 6(6) of EC Regulation 1228/2003/EC (the "Regulation") and the relevant provisions in GB and Dutch law implementing Articles 20 and 23 of the Electricity Directive 2003/54/EC<sup>1</sup> in relation to the proposed interconnection of the Dutch and GB electricity transmission systems by a DC cable built, owned and operated by BritNed.

BritNed seeks to be exempt from the above articles for a period of 25 years. This reflects the forecast discounted payback period and the overall risk associated with a high degree of uncertainty of revenues over the life of the assets.

BritNed is a joint venture between National Grid International Ltd ("NGIL"), a 100% owned subsidiary of National Grid plc, and NLink International B.V. ("NLink"), a 100% owned subsidiary of TenneT Holding B.V. BritNed is a separate legal entity from the owners of the two transmission system operators ("TSOs") that the proposed interconnector will connect.

The construction of the BritNed interconnector supports fully the EU's policy to increase electricity interconnection across the EU. As such, it will contribute towards both the UK and the Netherlands meeting the policy requirements set out by the European Commission at the Barcelona summit in 2002. A policy that was reconfirmed as recently as February 2006 by the European Commission.

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<sup>1</sup> BritNed seeks exemption from standard conditions 9, 10, 11 and 12 of the Electricity Interconnector License in accordance with standard condition 12(3). In the Netherlands, the Electricity Directive 2003/54/EC has been implemented in Article 24 up to Article 42 of the Electricity Act 1998. BritNed seeks exemption from relevant obligations from these articles in accordance with Article 86(c) of the Electricity Act 1998.

Increased interconnection between these two member states will:

- widen the pool of generation available in each market, shifting the supply curve to the benefit of consumers in each country, albeit not simultaneously;
- introduce greater diversity of supply;
- deepen the pool of potential providers of balancing and reserve services to the TSOs; and
- enable more efficient use of generation in each country thereby helping reduce harmful emissions.

The BritNed interconnector will compete as a substitute to more indirect routes (such as the Anglo-French interconnector) available for electricity generated in GB to be transmitted for delivery to the Netherlands and vice versa. Consequently, the extent of BritNed's use will be determined by market participants.

BritNed has reached the critical point in the phase of the project during which it is studying the feasibility of the construction of the proposed interconnector and aims to take an investment decision around December 2006. Depending on the Dutch process for consent and the project being awarded exemptions in line with the request set out in this application from both the Dutch and UK regulatory authorities, construction of the interconnector is programmed to start during the spring of 2007. The BritNed interconnector is expected to come into operation in the middle of 2010.

BritNed proposes that access to the interconnector is provided using a blend of implicit auctions at the day-ahead stage and short-term explicit auctions of physical capacity rights. The implicit auction system (day ahead) will also be used to implement "Use It Or Lose It". Furthermore, BritNed will comply with any future guidelines as to how "Use It Or Lose It" (UIOLI) / "Use It Or Sell It" (UIOSI) should best be achieved.

BritNed's motivation in seeking an exemption is solely to ensure the risk/reward balance remains aligned over the duration of the exemption. It is not seeking to institute an access regime materially different to that required under the RTPA regime contemplated by Article 6(6) of EC Regulation 1228/2003 ("the Regulation") and the relevant provisions in GB and Dutch law implementing Articles 20 and 23 of the Electricity Directive 2003/54/EC Regulation, except that tariffs or methodologies would not need to be approved ex-ante in any formal sense and future capacity expansion of the interconnector will be at BritNed's discretion rather than potentially being directed by the regulator. In all other respects the access arrangements would resemble that of an RTPA access regime.

Investors in BritNed need the assurance that they will not just face the downside risks to project returns but will also benefit fully from the potential upside. If the interconnector was subject to Article 6(6) of the Regulation and the relevant provisions in GB and Dutch law implementing Articles 20 and 23 of the Electricity Directive 2003/54/EC, there would be a danger that, if the interconnector is commercially successful, the returns to investors would be capped, if not entirely removed. However, if it is unsuccessful there is no mechanism for compensating investors.

The licensing framework arising out of the application of GB law prevents BritNed's costs from being socialised yet can give rise to the regulator being able to demand that the interconnector operator effect capacity expansions at its direction. This gives the potential for the authorities to cap upside but not downside risks of the project and creates an asymmetry of risk which reduces expected returns to below the level that would be acceptable to the investors. Consequently, unless an exemption is received from the UK regulatory authorities and ratified by the European Commission, then BritNed will not construct the proposed interconnector. An exemption in the same form and of the same scope as that granted by the UK regulatory authorities is required from the Dutch regulatory authorities.

Section 3 sets out a detailed assessment of BritNed's proposed interconnector against the six conditions set out in EC Regulation 1228/2003 (duplicated in standard condition 9

of the GB interconnector licence). BritNed believes the evidence presented in this exemption request demonstrates how BritNed and its proposed interconnector meets the criteria for an exemption to be granted.

In conclusion, the creation of BritNed's proposed interconnector represents a major step in moving towards a more interconnected European electricity transmission system, with the associated benefits of wider access to generation markets and security of supply. The presence of the proposed interconnector will bring considerable benefits to British and Dutch consumers alike, as well as their respective network operators. In particular, consumers will benefit from a truly flexible and open access arrangement for users of the interconnector without being exposed to the investment costs or ongoing business risks they would be exposed to if the costs of the interconnector were socialised. As such, BritNed's proposed interconnector will further enhance the proper functioning of the energy markets in the UK and the Netherlands. Equally, the respective network operators will benefit from the opportunity to secure balancing services from a deeper pool of providers.

## 1. BACKGROUND / OVERVIEW

### 1.1 Project Description

BritNed proposes to build a high voltage DC electricity cable between the Isle of Grain in Britain and Maasvlakte in the Netherlands. BritNed Development Ltd is a joint venture company whose shareholders are National Grid International Ltd ("NGIL"), a 100% owned subsidiary of National Grid plc, and NLink International B.V. ("NLink"), a 100% owned subsidiary of TenneT Holding B.V. BritNed is a fully separate legal entity which is independent from both organisations' TSO activities. This is further illustrated in section 3.

A feasibility study, carried out in the first phase of the project, established that the technically feasible capacity for the interconnector is in the range of 700 – 1320 MW under the assumptions made. No final decision has yet been made on the capacity of BritNed.

BritNed will not trade electricity itself: it intends only to build, own and operate the interconnector, the capacity of which will be made available to the British and Dutch markets using a blend of implicit and explicit auctions. It will be these markets that ultimately decide in which direction power should flow.

#### **Technical description**

BritNed will use a High Voltage Direct Current ("HVDC") cable. The interconnector will comprise either a single or pair of HVDC cables (if a pair, installed side by side) capable of carrying current in both directions, although not simultaneously. The cable's voltage may be up to 500 kV.

The cables BritNed intends to use do not contain oil in the insulating layer and consequently there can be no prospect of environmental damage arising from unforeseen oil leaks. Instead the cable will contain copper conductors and a solid

insulation. The conductor and insulation will be protected by layers of metal and plastic, including steel “armour” wires.

BritNed’s proposed interconnector will consist of the following elements:

- a) a converter station at Maasvlakte (Rotterdam harbour), directly connected to the existing 380 kV substation at the site. The converter station converts between the alternating current (AC) used on the Dutch grid and the HVDC used in the BritNed cable;
- b) an onshore cable section at Maasvlakte;
- c) a crossing of the beach at Maasvlakte;
- d) an offshore submarine cable crossing the North Sea. This will be buried at least one metre beneath the seabed to protect it from damage;
- e) a crossing of the mudflats near the Isle of Grain, Kent. At the point where it comes ashore, the cable will be installed by directional drilling to minimise its environmental impact;
- f) an onshore cable section between the landfall point and the British converter station;
- g) the British converter station, located south-east of the existing Grain power station. This will convert between the HVDC used on the interconnector and the AC used in Great Britain; and
- h) onshore AC cables between the converter station and the existing 400 kV substation at Grain.

BritNed’s interconnector will not require the construction of any overhead lines or electricity transmission towers.

Appendix 1 provides the map of the interconnector line. Appendix 2 provides the site plans at Grain and Maasvlakte.

### **Benefits of BritNed**

The creation of BritNed's interconnector will enable electricity to be traded between Britain and the Netherlands directly without the need to cross other countries' borders or make use of other countries' transmission systems. This will increase competition, diversity and reliability of power supplies. For this reason, the European Commission has declared BritNed's proposed interconnector a Priority Project.<sup>2</sup>

The BritNed interconnector will provide the following benefits:

- *Increased Competition*: the interconnector will make wholesale electricity markets more competitive by providing a direct route through which British power stations can send power to Dutch consumers and vice versa.
- *Security and Diversity of Supply*: the interconnector will have a positive impact on Security of Supply. It is an additional source of power for Great Britain. It is also an additional source of power for the Netherlands when the Netherlands needs power.

BritNed's interconnector will provide a qualitatively better contribution to security of supply than the equivalent size of a single power station. This is for three reasons:

- firstly, cables have much higher reliability than power stations. As a result, an interconnector is less likely to give rise to a sudden loss of power given the source of the power flow across it derives from a non-homogenous pool of generation;
- secondly, the interconnector is less likely to be affected by a "common mode" failure (e.g. a technical failure affecting a gas grid or industrial action); and
- finally, the interconnector is continuously in operation and, given a suitable instruction, can very rapidly change the direction and volume of flow. By contrast, backup power stations are frequently "cold" and can take hours to start

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<sup>2</sup> TEN-E Priority Projects Brochure page 19

up. BritNed's interconnector would therefore give rise to a deepening of the pool of fast response services available to TSOs on either end of the interconnector.

Also, in an emergency, where power cuts are a possibility, the operators of the British and Dutch transmission systems (National Grid Electricity Transmission plc and TenneT TSO B.V.) can use BritNed's capacity to support each other. Appropriate mechanisms would have to be put in place by the TSOs at both ends and BritNed is committed to facilitating these arrangements if required by either of the TSOs that operate the systems connected by the interconnector..

- *Balancing*: transmission system operators need to ensure that electricity supply and electricity demand are exactly equal on a minute-by-minute basis. They do this by requiring power stations to hold back part of their capacity, so that the stations can provide increased output at a moment's notice. This reduces efficiency and increases pollutant emissions per unit of output. The British and Dutch operators can use BritNed's transient overload capacity<sup>3</sup> to share some of these "balancing reserves".
- *Environment*: a study performed by ILEX shows that the interconnector will tend to reinforce government measures to reduce pollution. This happens because the power stations that find export markets tend to be younger, more efficient and cleaner, whilst those that are displaced by imports are those that are older, less efficient and more polluting.
- The interconnector should also help Britain and the Netherlands to accommodate more wind power and other "intermittent renewables". This is because the interconnector allows wind farms to take advantage of differences in weather between Britain and Continental Europe: surplus power generated on windy days can be exported, while imports can be used to top-up supplies on relatively calm days. The mechanisms for day and intra-day trading support this. Finally, as

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<sup>3</sup> Transient overload capacity is the ability to operate the interconnector for short periods, e.g. 4 hours, in excess of its nominal continuous rating by taking advantage for the thermal characteristics of the plant and the in-built redundancy of the cooling systems.

highlighted above, more efficient balancing reserve services can be procured, thereby helping to keep emissions as low as possible.

### **Permits & Licenses**

#### **Netherlands**

BritNed has filed a request with the Dutch government for the Structural Plan for Electricity Supply to be modified to include the project. This will be done through a decision of the Dutch government and parliament. Linked to this, BritNed has prepared applications for public works act permits, environmental permits and building permits. An Environmental Impact Assessment (EIA) has been carried out as part of this procedure.

#### **Britain**

The onshore works on the British side require planning permission from Medway Council. The landfall and the offshore cables will require permits from the Department of Transport, DEFRA, Environment Agency, Port of London and Medway Port. Permit permission is expected around June 2006. Draft planning conditions have already been issued.

Appendix 3 provides an overview of the permits and licenses required.

### **Current stage of the project**

BritNed has reached the critical point of the feasibility phase and aims to take an investment decision around December 2006. Depending on the Dutch consent process and the outcome of this request for exemption from both the UK and Dutch regulatory authorities, the construction could start as early as spring 2007.

Besides the exemption application, key next steps for 2006 are:

- following the OJEU Notice<sup>4</sup>, release the construction tender documentation (completed 7 April);
- negotiate the construction contract and select a preferred supplier;
- develop further the implicit and explicit capacity auction agreements and procedures; and
- encourage and support progress on Dutch permits and licenses.

That said, the investment would not go ahead without the exemption requested herein being granted.

## 1.2 Proposed access regime

BritNed's primary access mechanisms will be a blend of implicit auctions at the day-ahead stage (herein referred to as "E2E") and short-term explicit auctions of physical capacity rights. Both methods have been recognised by the European Commission as transparent and non-discriminatory market-based capacity allocations methodologies. In the draft Congestion Management Guidelines amending the Annex to Regulation (EC) No 1228/2003, the Commission proposed that capacity on interconnectors shall be allocated only by means of explicit or implicit auctions, or a mixture of both<sup>5</sup>. The allocation of capacity between various types of auction will be adjusted in response to market demand. The day-ahead implicit auction system will also be used to implement "Use It Or Lose It (UIOLI)".

Mechanisms for intra-day trading and TSO-to-TSO trading are also proposed (subject to TSO agreement).

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<sup>4</sup> Published on 25 November 2005 Number 2005/S-227-224435

<sup>5</sup> Committee meeting 25 January 2006.

**Exchange-to-Exchange (“E2E” or Implicit Auctions)**

Exchange to exchange trading (“E2E”) is also known as “implicit auctioning”, “market coupling” and “market splitting”.

E2E enables the automatic trading of power between two auction-type exchanges in two countries connected by the interconnector. The exchange operator selected by BritNed is the APX Group (“APX”). APX was successful in securing this role following a notice published by BritNed in the Official Journal of the European Union<sup>6</sup>. The APX day-ahead market in Amsterdam provides a suitable auction-type exchange on the Dutch side. No suitable exchange currently exists on the British side, but APX expects to have established a suitable auction mechanism in a British exchange in the next few years.

The algorithm used by the power exchanges can be thought of as checking the power exchanges’ respective prices for power delivered in the same hour in the following day. The algorithm then buys power in the exchange with lower prices and sells it in the exchange with higher prices. This will increase prices in the sending exchange and lowers them in the receiving exchange. As long as the price difference remains, the algorithm will continue buying more power in the cheaper exchange, shipping it to the more expensive exchange and selling it there. This goes on until either the algorithm has used all the interconnector capacity available to it, or until the prices in the two exchanges have converged.

BritNed will provide APX with the following information simultaneous with the submission of bids and offers to APX by market participants:

- i) the Britain-to-Netherlands and Netherlands-to-Britain capacities available to APX in each hour of the following day;
- ii) the interconnector’s maximum hour-to-hour change in APX-nominated flows; and
- iii) an estimate of trading costs (e.g. interconnector losses and any relevant tariffs) in each direction for each hour of the following day.

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<sup>6</sup> Published on 25 November 2005 Number 2005/S-227-224435. A description of the selection criteria is provided in Appendix 4.

The algorithm operates subject to constraints. In particular BritNed will introduce three constraints:

1. the exchange-to-exchange flows nominated on the interconnector must be less than or equal to the capacity that BritNed has made available to APX;
2. the change in hour-to-hour APX nominations must not exceed limits set by BritNed; and
3. no trade should be carried out by APX unless the price difference between markets is sufficient to pay for the estimated trading costs.

APX nominates flows to BritNed at the same time that it accepts bids and offers from buyers and sellers. BritNed cannot reject APX's nominations unless they violate the conditions listed above.

In return for providing APX with capacity rights, BritNed will receive APX's surplus from nominating flows on the interconnector, less the reasonable costs it has incurred and been unable to recover through other mechanisms.

For reasons of network control / security, the TSOs may set limits on the rate at which interconnector flows can change. This means that the trades carried out in one hour can affect the trades that are possible in the next hour.

Interconnector trades will inevitably result in a (small) proportion of energy losses and tariffs will be levied on the trades to cover these. This means that a certain minimum price difference is necessary before trading can occur and the algorithm will therefore not reduce price differences between markets to zero

APX's British and Dutch exchanges are expected to form part of a larger group of exchanges coupled through similar "exchange-to-exchange" arrangements. By the time that BritNed commissions the interconnector, for instance, it is fully anticipated that the Dutch exchange will already have an E2E coupling to Nordpool, Powernext and Belpex.

Deciding where power should flow requires a more advanced multi-market coupling algorithm. Multi-market coupling operates by maximising “welfare” (i.e. the benefit that all buyers obtain thanks to the exchange price being lower than the highest price at which they would have bought, plus the benefit that all sellers obtain thanks to the exchange price being higher than the lowest price at which they would have sold).

Appendix 4 provides an assessment of APX’s OJEU response against the criteria set by BritNed. Appendix 5 provides illustrative examples of how E2E works.

### **Short-term explicit auctions**

BritNed would offer capacity rights for various durations. Examples of suitable durations that BritNed might wish to adopt include 1-year (financial-year and/or calendar-year), seasonal (6-monthly), and monthly. At present only short-term contracts with durations no longer than one year are considered.

The auction mechanism would resemble either the system currently used on IFA (Britain-France) or the system currently used for Belgium-Netherlands and Germany-Belgium transfers. If auction bids are inadequate to use all the available capacity, Capacity will be re-offered on different terms (e.g. shorter contract duration) in a subsequent auction, or it will be offered through E2E implicit auctions instead. In addition to the fee set by the auction, BritNed will also pass-through any relevant charges levied by TSOs.

Assuming it is required to do so by the final version of the Congestion Management Guidelines when they are adopted by the European Commission, BritNed will require holders of capacity obtained through explicit auctions to nominate early on the day ahead: “before the day-ahead sessions of the relevant organised markets”.

Capacity not nominated by these capacity holders will then be made available for exchange-to-exchange trading, thus providing a “Use It Or Lose It” mechanism. APX will also be allowed to superimpose flows on the (net) nomination made by capacity holders

in cases where exchange prices show a need for power to flow in the opposite direction. In addition BritNed may offer to pay some part of the E2E surplus to holders of explicit capacity who, through not nominating, have made additional E2E trading possible ("Use It Or Sell It").

In the event that capacity available on BritNed is restricted (for example, due to equipment failure), BritNed will seek to maintain the capacity rights of parties who have obtained capacity through explicit auctions (as exchange-to-exchange capacity is only released at the day-ahead stage and so can be adjusted flexibly in response to changes in available capacity). If there is insufficient capacity to accommodate all holders of explicit capacity rights then these explicit capacity holders will have their rights scaled down pro-rata and will receive compensation based on the amount that they paid in the original auction.

The earliest date on which capacity holders can make nominations is the day prior to delivery. BritNed may offer capacity that is either firm or interruptible following nomination.

### **Other Trading Mechanisms**

#### TSO-to-TSO

Subject to the agreement of the TSOs concerned, BritNed will make provisions for TSO-to-TSO trading. Subject to suitable contractual terms being agreed, BritNed is prepared to provide dedicated capacity rights to TSOs along with the right for TSOs to superimpose their own flows onto the interconnector following gate-closure.

#### Intra-day

Following nomination by APX, all remaining interconnector capacity (other than that reserved for TSO use) would become available for "intra-day trading", which, subject to TSO agreement, can take place in the later hours of the day prior to delivery ("D-1"), as well as during the pre-gate-closure hours of the day of delivery ("D")

In accordance with clause 2.1 of the draft Congestion Management Guidelines [12 May 2006], BritNed intends to provide this through a continuous stream of allocations rather than a few allocations at arbitrary times. Furthermore, BritNed believes that in order to facilitate superposition of flows in intra-day timescales, capacity allocation and flow nomination should be combined (e.g. if a user wants to flow 100MW from GB to NL they will submit a request for the transaction to BritNed and, if the request is accepted, 100MW of capacity will be allocated and a 100MW flow will immediately and automatically be nominated).

In line with clause 2.9 of the draft Congestion Management Guidelines, a (minimum) price for intra-day allocations will be established. BritNed, will develop a mechanism for calculating this minimum price.

Subject to suitable contractual agreements with the exchange(s) concerned, BritNed will seek to ensure that this intra-day trading facility can also be used via power exchanges that trade in intra-day timescales.

#### Other

BritNed will also require special trading arrangements for a number of technical situations. These include the provision of "commissioning power" to test the interconnector before it enters service, the trading out of imbalances should the interconnector "trip" and the time-shifting of APX nominations to accommodate differences between APX's trading periods and the settlement periods in each national system.

### 1.3 Legislative/regulatory context

#### a) EU policy on interconnectors

The construction of BritNed is in line with the EU's policy to increase electricity interconnection across the EU. It will contribute to the UK and the Netherlands meeting the policy requirements set out by the European Commission at the Barcelona summit in 2002.

In 2002<sup>7</sup> the European Commission stated that:

*"In the field of energy the European Council:  
- agrees the target for Member States of a level of electricity interconnections equivalent to at least 10% of their installed production capacity by 2005. Financing requirements should be met mainly by the enterprises involved;"*

This was reiterated by DG COMP in their sector inquiry preliminary results on 16 February 2006<sup>8</sup> where it stated in para 479 that:

*"Since the liberalisation of the energy markets the need for interconnector capacity has increased substantially. This is of particular importance for players who have entered other markets and become active in cross border trade....More interconnection is needed to facilitate companies extending their activities into other regions outside their traditional areas in order to increase competition."*

In para 487 it continues:

*"The Barcelona Council 2002 set a target for (import) interconnector capacity of at least 10% of production capacity per Member State by 2005. Using the Sector Inquiry data the current percentages for some MS have been calculated. The results ..... confirms earlier reporting by the Commission that several countries, such as Italy, Portugal, Spain, Ireland and UK, do not meet the 10% threshold....."*

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<sup>7</sup> [http://ue.eu.int/ueDocs/cms\\_Data/docs/pressData/en/ec/71025.pdf](http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/ec/71025.pdf) para 37

<sup>8</sup> [http://europa.eu.int/comm/competition/antitrust/others/sector\\_inquiries/energy/pr\\_2.pdf](http://europa.eu.int/comm/competition/antitrust/others/sector_inquiries/energy/pr_2.pdf)

DG TREN has stated<sup>9</sup> that a single European energy market requires that energy networks cross national boundaries freely. Successful opening of the internal energy market with the associated benefits of increased competitiveness for European consumers, requires a major increase in interconnections between national networks. DG TREN has published a list of interconnection projects it believes are necessary for the internal market to function as intended. One such project is to interconnect the electricity transmission systems of the United Kingdom and the Netherlands<sup>10</sup>. BritNed is developing such a project consistent with the aspirations of the European Commission.

**b) National regulatory frameworks**

The requirements of the second EU electricity directive (2003/54/EC) (“the Directive”) were enacted into GB law in 2004 as part of the Energy Act 2004 (“Energy Act”) which amended the Electricity Act 1989 (“the Electricity Act”). The Electricity Act now requires that any party that participates in the operation of an interconnector in Great Britain be licensed to do so (and thus become an “Interconnector Licensee”). Furthermore, the Electricity Act also includes provisions (which as of today have not been activated) that prohibit any party that also holds a licence to transmit electricity through wires to substations (“Transmission Licensee”) from also participating in the operation of an interconnector.

The requirements of the second EU electricity directive (2003/54/EC) (“the Directive”) and Regulation No 1228/2003 are also enacted into Dutch law. As opposed to the Electricity Act 1989 in Great Britain, the Dutch Electricity Act 1998 does not require a party that participates in the operation of an interconnector to be separately licensed. According to the Dutch Electricity Act, the Minister of Economic Affairs will decide on an exemption request as embodied in Article 7 of Regulation No 1228/2003. The Board of the Netherlands Competition Authority will advise the Minister on the exemption request.

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<sup>9</sup> TEN-E Priority Projects Brochure

<sup>10</sup> TEN-E Priority Projects Brochure page 19

## 2 EXEMPTION REQUEST

BritNed wishes to obtain an exemption from Article 6(6) of EC Regulation 1228/2003 (“the Regulation”) and the relevant provisions in GB and Dutch law implementing Articles 20 and 23 of the Electricity Directive 2003/54/EC. Accordingly, BritNed seeks exemption from standard conditions 9, 10 and 11 of the Electricity Interconnector Licence applicable in Great Britain in accordance with standard condition 12(3). In the Netherlands, the Electricity Directive 2003/54/EC has been implemented in Article 24 up to Article 42 of the Dutch Electricity Act 1998<sup>11</sup>. BritNed seeks exemption from relevant obligations from these articles in accordance with Article 86(c) of the Dutch Electricity Act 1998.

The Regulation sets out the conditions which must be met for a new DC interconnector to be granted an exemption. The six conditions are:

1. the investment must enhance competition in electricity supply;
2. the level of risk attached to the investment is such that the investment would not take place unless an exemption is granted;

<sup>11</sup> According to the explanatory memorandum to the Electricity Act, the articles 6(6) of the EC Regulation 1228/2003 and 20 and 23 of the Directive 2003/54/EG have been implemented in the Dutch Electricity Act as described in the table below:

EC Regulation/ Directive	Electricity Act 1998
Article 7 EC Regulation 1228/2003	Article 26 and article 86c Electricity Act 1998.
Article 6(6) EC Regulation 1228/2003	Not implemented while directly applicable (parts were already implemented in Electricity Act).
Article 20 Directive 2003/54/EG	20(1) → already implemented in articles 27 up to 40 Electricity Act; 20(2) → article 24(2) Electricity Act.
Article 23(2), (3) and (4) Directive 2003/54/EG	23(2a) → already implemented in articles 27 up to 42 Electricity Act; 23(2b) → article 31(1e) Electricity Act; 23(3) → The Netherlands does not use this option of the Directive; 23(4) → partly implemented in articles 36(2) and (3) of the Electricity Act.

3. the interconnector must be owned by a natural or legal person which is separate at least in terms of its legal form from the system operators in whose systems that interconnector will be built;
4. charges are levied on users of that interconnector;
5. since the partial market opening referred to in Article 19 of Directive 96/92/EC, no part of the capital or operating costs of the interconnector has been recovered from any component of charges made for the use of transmission or distribution systems linked by the interconnector; and
6. the exemption is not to the detriment of competition or the effective functioning of the internal electricity market, or the efficient functioning of the regulated system to which the interconnector is linked.

A detailed assessment of BritNed against those criteria is set out in section 3 below.

BritNed's motivation for obtaining an exemption is related to the commercial risk of the project. The project development costs are significant and the revenues over the period 2010 to 2035 are very uncertain and to proceed on any basis other than a socialised basis, would be too risky unless an exemption by both the UK and Dutch regulatory authorities were to be granted.

The standard conditions of the UK interconnector licence give effect to the requirements of the second EU electricity directive (Directive 2003/54/EC). This requires that access be provided to the interconnector on a regulated third party access ("RTPA") basis unless it is otherwise exempt.

The licence conditions also duplicate the requirements of Article 6(6) of the Regulation which requires revenues derived from the use of an interconnector be used for one or more of three permitted purposes unless otherwise exempt. Revenues can be used for the following purposes:

1. guaranteeing the actual availability of the allocated capacity, either on a physical or contractual basis;

2. network investment in maintaining or increasing interconnection capacities at an efficient level;
3. 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.

Unless exempt, the regulatory Authorities may determine that the access conditions under RTPA should differ from one year to the next at their discretion (under standard condition 10 of the interconnector licence) and may, upon receipt of a complaint, direct that the capacity of the interconnector be expanded (under standard condition 11 of the interconnector licence).

The effect of these conditions creates a risk that future revenues may be derived on an entirely different basis from those anticipated at the commencement of the project and be less than those anticipated to be sufficient to make the project viable. Hence, given these risks, investors in BritNed need the assurance that they will not just face the downside risks to project returns, but will also benefit fully from the potential upside.

If the interconnector were not exempt, in both the Netherlands and the UK, from both Article 6(6) of the Regulation and the relevant national provisions implementing Articles 20 and 23 of the Electricity Directive, there would be a risk that, if it is commercially successful, the returns to investors would be capped, if not entirely removed. However, if it is unsuccessful, there is no concomitant mechanism for compensating investors

It follows that unless the cost of development is able to be borne by parties other than the project developers (typically this is most easily achieved by socialising the cost of the interconnector across consumers), the prospect of an interconnector owner/operator not being able to keep some or all of the income would make the project so risky that no one would make the commercial decision to pursue such a project.

At present in the UK, there is no mechanism to socialise the costs of an interconnector. UK legislation requires that to participate in the operation of an interconnector any

person needs a licence to do so. A holder of an interconnector licence is prohibited from holding a transmission, distribution, supply or generation licence by the Electricity Act.

It follows that a third party would only elect to build an interconnector if it were exempt from the requirements of article 6(6) (condition 9 of the interconnector licence), the RTPA requirements (condition 10 of the interconnector licence) and the ability of the Authority to direct BritNed to expand capacity under certain circumstances (condition 11 of the interconnector licence), so that it was able to receive all of the income from the use of the interconnector by others.

An interconnector must, by definition, span at least two jurisdictions. As proposed, BritNed will earn revenue derived from the use of interconnector capacity.

To be exempt BritNed requires an exemption from the applicable UK legislation and the applicable Dutch legislation. If the exemption was granted the BritNed project would be able to proceed on the basis that it is taking the full risk and would retain the full reward.

**What if no exemptions were available from either the UK or Dutch regulatory Authorities?**

If no exemptions were available then it is critical to determine what extent the costs of the project could be underwritten by consumers at either end of the interconnector. In the UK it is clear that the regulatory framework does not contemplate such an arrangement at present and therefore all of the project risk would require underwriting by Dutch consumers. This may be unacceptable for Dutch consumers and the Dutch regulator given that both the Dutch and GB electricity markets are expected to benefit from the interconnector.

**Could the interconnector be exempt by one regulatory authority and not the other?**

It has been suggested that BritNed could be exempt from Art 6(6) and RTPA requirements in the UK but not in the Netherlands. In the first instance, BritNed has been unable to identify a mechanism by which it could separate its income and costs into two income pots of equal size and two cost pots of equal size, one of each effectively allocated to each connected jurisdiction, with a ringfence between each pair of income and cost pots. Such compartmentalisation would be required to avoid the prospect of the regulator responsible for the part of the interconnector subject to Article 6(6) being able to remove the income derived from the exempt portion of the interconnector (even if it were possible to identify the revenue derived from particular elements of the interconnector). Equally, to the extent that the interconnector is unprofitable it would be necessary to identify the income required from Dutch consumers to cover the portion of the interconnector costs that would be subject to socialisation. Unfortunately, no framework for such arrangements exists at this time.

However, even with the artificial construction contemplated in the paragraph above, no exemption under UK legislation would be possible because at least part of the interconnector would be funded by charges made by the TSO at the Dutch end if there were no income from its use. This would automatically cause BritNed to fail one of the criteria required to be satisfied for an exemption on the UK side to be granted.

In summary, the possible regulatory treatments that would ensure the project goes ahead necessarily require consistent treatment from both the Dutch and UK regulatory authorities i.e. both Dutch and British regulators granting an exemption from RTPA and Art 6(6) or neither regulator granting an exemption. Given that the UK legislation renders the 'no exemption option' too risky for the project to proceed there is only one combination that could possibly result in the project going ahead, this being an exemption from both the Dutch and UK regulatory authorities.

Previous exemptions granted to BBL, National Grid Grain LNG Ltd and the LNG importation facility developers in and around Milford Haven have hitherto contained a series of criteria that set out the basis on which an exemption may be reviewed and ultimately revoked. One such common criteria is the requirement that the actual

circumstances a project finds itself in once up and running should not be materially different to those set out at the time the exemption request was submitted. This provides a framework that should provide comfort to regulatory authorities and the European Commission that the expected returns required for the level of risk envisaged would not give rise to any undue competition concerns. If the actual circumstances were materially different from an original exemption request (which in turn could result in returns materially higher to that presented in an exemption request) then this could be considered grounds for review by the relevant regulatory authorities. Ultimately, this could lead to revocation of an exemption

## **2.1 Exemption duration**

BritNed seeks an exemption of 25 years' duration. As shown in the confidential Appendix 6 this reflects the forecast discounted payback period for the project and the overall risk associated with a high degree of revenue uncertainty for the life of the asset.

### 3 DETAILED ASSESSMENT AGAINST EXEMPTION CONDITIONS

#### 3.1 Condition a)

*The investment must enhance competition in electricity supply*

BritNed has asked Frontier Economics ("Frontier") to carry out an independent competition assessment. Frontier's final report is attached in Appendix 7. The following largely quotes from this report.

Frontier's competition assessment reaches the following key conclusions:

- a) the investment *per se* (regardless of access and ownership issues) would enhance competition;
- b) the intended ownership and a regime of access in accordance with RTPA would not jeopardise the competitive benefits that the investment would bring;
- c) the exemption cannot have a detrimental effect on competition because the access arrangements are such that the competitive conditions in all relevant affected markets, under an exemption, will be identical to those that would have prevailed with the investment under RTPA;
- d) while the operation of the interconnector under an RTPA regime is **not** the relevant comparator for the access arrangements in the absence of an exemption (because without exemption the investment would not take place), competitive conditions with the interconnector operated under an RTPA regime would be better than those with no investment. Hence, competitive conditions under the investment with exemption must be better than with no investment.
- e) as a result, the exemption cannot be detrimental to competition.

These conclusions are supported by Frontier's following analysis:

a) **The investment per se (regardless of access and ownership issues) would enhance competition.**

Given suitable access arrangements and regardless of any issues of ownership, BritNed's interconnector *per se* must enhance competition.

BritNed's interconnector will provide infrastructure that enables British generators to compete more effectively in the Dutch wholesale market, and vice versa.

The same point applies to retailers. The proposed interconnector will enable British retailers potentially to procure generation from The Netherlands and Dutch retailers to procure generation from the UK.

In addition to facilitating static competition, the interconnector will also help to improve dynamic competition by facilitating new entry. With this interconnector, for example, a UK generator wishing to enter the generation market in the Netherlands would be able to build up a customer base served, initially, primarily by its UK generation portfolio (via BritNed's interconnector) before making an investment in a generating plant in the Netherlands.

With suitable institutional arrangements, BritNed's interconnector will also facilitate more competition in the provision of balancing services and ancillary services to the respective transmission system operators (TSOs).

Furthermore, given that the Netherlands is interconnected to other European countries, the increased competition in the Netherlands wholesale market will also create competitive benefits in neighbouring countries<sup>12</sup>.

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<sup>12</sup> In a formal sense this is also true for Eire which is electrically connected to the UK, although prior to the development of any larger East – West interconnector the linkage is weak.

b) **The intended ownership and a regime of access in accordance with RTPA would not jeopardise the competitive benefits that BritNed would bring.**

BritNed's interconnector, with its proposed ownership, would be pro competitive if the access regime is RTPA<sup>13</sup> compliant.

BritNed's proposed two capacity allocation mechanisms are implicit or explicit auctions. Both are market-based allocation mechanisms.

If **implicit auctions** alone are employed then there is no way in which a dominant or potentially dominant market participant can gain control of even a part of the interconnector. The full capacity of the interconnector, made available by the interconnector operator and the TSOs, will always be used if there is any economic value to its use<sup>14</sup>. A dominant player cannot gain control of the interconnector and influence the extent to which it is used. Nor can such a player benefit more from the exercise of market power than it would have done in the absence of the interconnector.

If **explicit auctions** are used, the conclusions are essentially the same.

Although a dominant player can in principle acquire control of a share of the interconnector for a relatively short period, the UIOLI provisions in effect under an RTPA regime will prevent the dominant party from withholding capacity on the interconnector. BritNed will put in place adequate UIOLI mechanisms in line with any regulatory guidelines in this area.

In any event, no (hypothetically) dominant player could persistently gain from acquiring and withholding interconnector capacity. Any sustained attempt by a dominant party to

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<sup>13</sup> Here and in the rest of this report, unless otherwise stated rTPA refers to the access conditions imposed through RTPA and not to the associated conditions concerning the disposition of interconnector revenues.

<sup>14</sup> The interconnector may not be fully used if the prices at each end are equal, but this does not create a competition issue.

exercise incrementally more market power will increase the value of the interconnector usage rights and the dominant party will simply end up paying a higher price to acquire interconnector capacity in each subsequent auction.

Hence, even if one of the markets adjoining the interconnector contained a dominant (or potentially dominant) player, BritNed's proposed provisions for gaining access to its interconnector prevent access to the interconnector creating adverse competition effects.

- c) **The exemption cannot have a detrimental effect on competition because the access arrangements are such that that the competitive conditions in all relevant affected markets, under exemption, will be identical to those that would have prevailed with the investment under RTPA.**

BritNed capacity is offered under an RTPA compliant access regime. It will therefore be pro competitive.

BritNed's access arrangements will meet the criteria laid down for RTPA for the following reasons:

- BritNed is committed to meeting all existing and future RTPA guidelines (see the Frontier report for a more detailed assessment);
- BritNed intends that access to its interconnector should be by means of a blend of implicit and explicit auctions. Both access methods meet ERGEG's RTPA requirements;
- BritNed will implement agreed Use It or Lose It (UIOLI) or Use It or Sell It (UIOSI) provisions; and
- BritNed will, consistent with whatever UIOLI or UIOSI arrangements are agreed, use all reasonable endeavours to facilitate economic intra-day and balancing trades.

In conclusion, while the investment under an RTPA regime is **not** the relevant counterfactual (because without the grant of an exemption the investment would not take place), we have established that competitive conditions with the investment under an

RTPA regime would be better than those with no investment. Hence, competitive conditions under the investment with exemption must be better than with no investment.

### **3.2 Condition b)**

*The level of risk attached to the investment is such that the investment would not take place unless an exemption is granted.*

Traditionally, merchant interconnectors have been built on the back of long-term contracts. "Long-term" in this context typically refers to contracts of sufficient duration to repay commercial debt and compensate investors for the risks they have taken on. Due to the capital-intensive nature of submarine DC interconnectors, this term is usually 25 years or longer. The need to underpin new infrastructure investments with long-term contracts often directly conflicts with policy makers' desire to ensure open and non-discriminatory third party access ("TPA").

BritNed deviates from this traditional approach as its construction is not underpinned by any long-term capacity sales. This investment therefore presents significant construction and operational risks as increased costs do not lead to increased income and reduced availability leads to reduced income. Because of the lack of long-term contracts these risks are entirely borne by BritNed's investors.

In BritNed's case the key risks are as follows:

#### **a) Development risk**

BritNed's development phase has already taken around 5 years and cost around €8m to date (excluding additional support funding from the EC). Its developers need to recover those costs.

**b) Construction risk**

Significant risks will reside with the providers of equity. For example, cable installation contractors will typically require an increase in the contract price if seabed conditions are more difficult than expected. Installation of the cable itself is a related, high risk activity. Other interconnectors developed by BritNed's shareholders around the world and have been exposed to significant construction risks.

**c) Start-up risk**

Commissioning of HVDC interconnectors poses a degree of uncertainty due to the reliance of suitable coincident outage windows being made available by the transmission system operators (TSO's) at each end.

In addition, once connected to the systems of the TSO's at each end, there follows a period of several weeks/months during which tests are performed at ever increasing power transfer levels to confirm control and dynamic stability of the interconnector and the TSO networks under all conceivable operation conditions. Test programs often experience lengthy delays at this stage due to the lack of suitable coincident conditions in the networks of both TSO's such as to permit the required power flows at economic rates.

**d) Operational risk**

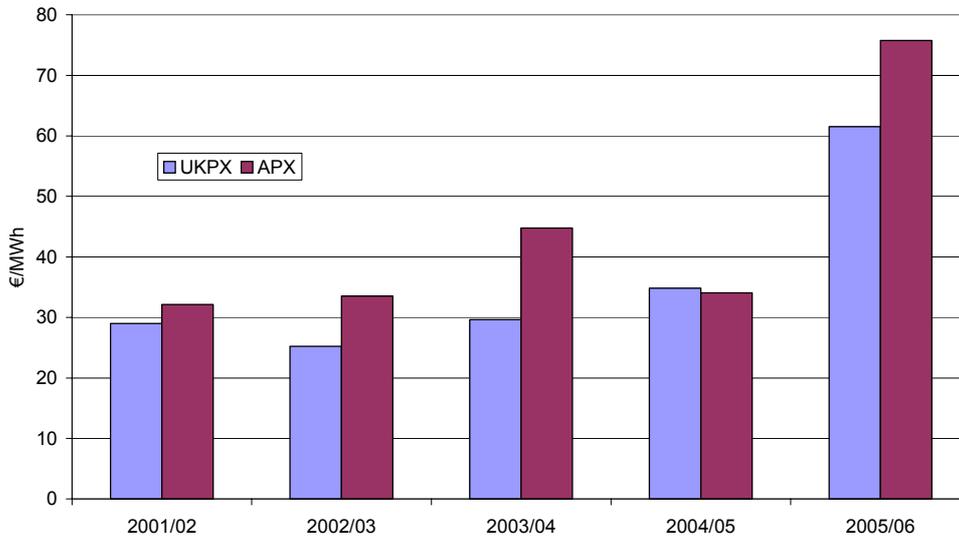
Revenue is not received from interconnector users when an interconnector is unavailable. Although some availability risks are insurable, an increasing number are not. The investors also take the credit risk that customers will continue to have the ability to pay.

**e) Income volatility**

One of the important features of the arbitrage revenues is likely to be their variability between years. The British and Dutch electricity markets have broadly similar characteristics, being thermal systems with a high reliance on fossil fuels and demand profiles that reflect similar heating and lighting requirements. This means that average electricity prices are likely to be reasonably well correlated. Figure 1 bears out this view: during the last five years, the annual average prices in the two markets have followed broadly similar paths. The average values over the entire period have been €36/MWh and €44/MWh in Britain and the Netherlands respectively. In two of the five years (2001/02 and 2004/05), the annual averages have been virtually identical, indicating that there has not been a systematic difference.

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*Figure 1 – Annual average prices in UKPX and APX*



Given this similarity, it is possible that in any given year, arbitrage revenues could be minimal. A large proportion of the value of BritNed is likely to be associated with factors that are difficult to predict for any year in isolation. These factors include the manner in

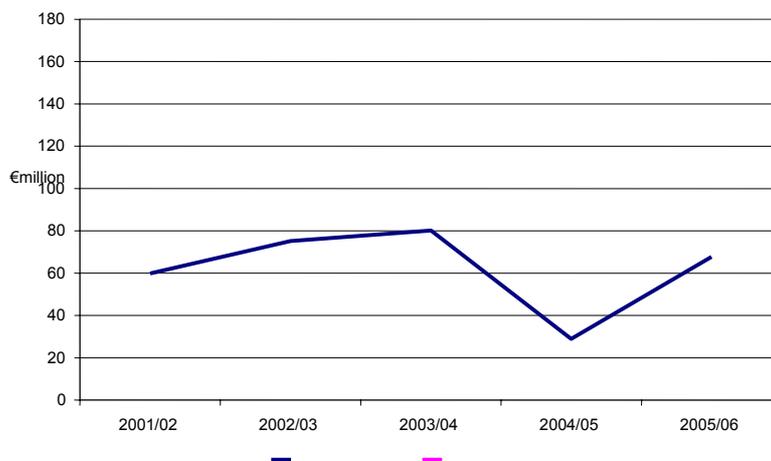
which fixed costs are reflected in hourly prices in the two markets, and price volatility – random fluctuations in hourly prices around the characteristic value for the time of day and season. These factors could be very significant; alternatively, they could be negligible.

In [Figure 2](#), we estimate how much revenue BritNed would have received had it been in operation between 1 April 2001 and 31 March 2006. The revenue is shown for each financial year (April to March). Modelling takes account of the percentage impact that BritNed itself would have, on average, on day-ahead prices in each market. However, a key uncertainty is whether BritNed would have a greater impact (in percentage terms) at peak times.

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*Figure 2 – Annual arbitrage revenues for BritNed*



This wide variation in annual arbitrage potential is set against a backdrop of fairly stable relative prices in the two markets, shown in [Figure 1](#). Annual price differences make up less than half of the total arbitrage revenue in our analysis, once the impact of the interconnector on prices is accounted for.

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BritNed sees no reason to believe that in future annual revenues would be any more stable than in the past. BritNed forecasts, for both markets, that the supply/demand balance will be tighter in the coming decade than it has been in the last decade. This could mean that, if anything, price volatility in the two markets is set to increase compared with the average of the last five years. It is notable that there were more price spikes in 2005/06 (with Dutch prices rising above €2000/MWh on fifty occasions) than in the previous four years.

The long term economics of BritNed's proposed interconnector will therefore depend on a pattern of 'good years' and 'bad years'. It is possible that revenue in the best years could be several times as high as revenue in the worst years. As historical data has shown, it should not be assumed, if BritNed has a good (or bad) year, that this sets the pattern for the future and that the ensuing years will also be good (or bad). It follows that if BritNed were to be regulated in such a way that access to revenues in the "good" years were curtailed, this could jeopardise the economics of BritNed unless there were to be a commensurate willingness to subsidise BritNed whenever revenues fell below a certain level.

**f) Regulatory risk**

As set out Chapter 2 UK legislation requires any interconnector interests of National Grid plc to be legally separate from National Grid Electricity Transmission plc, a holder of a transmission licence in Great Britain. This applies equally to National Grid plc's interests in both the existing interconnector between France and England ("IFA") and the interconnector proposed by BritNed given that BritNed is part owned by National Grid plc, the parent of National Grid Electricity Transmission plc.

This creates practical funding risks for BritNed in that in no way in the UK can BritNed be funded from charges levied by National Grid Electricity Transmission plc to its customers ("socialised costs") as it is prevented from doing so firstly, under the terms of its transmission licence and secondly by the prohibition preventing any participation in the operation of an interconnector set out in the Electricity Act.

Therefore, BritNed is only capable of being funded to the extent that the revenue it expects to earn from its users is sufficient to provide an appropriate return for the risks it accepts in constructing and operating the interconnector.

Notwithstanding funding difficulties created by GB legislation, Article 6(6) of the electricity regulation 1228/2003 (“the Regulation”) that applies directly without the requirement to be transposed into UK law requires that:

*“Any revenues resulting from the allocation of interconnection shall be used for one or more of the following purposes:*

- *guaranteeing the actual availability of the allocated capacity*
- *network investments maintaining or increasing interconnection capacities*
- *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 requirements of Article 6(6) of the Regulation are entirely complimentary and understandable where an interconnector is built and operated by an entity also responsible for the transmission network connected by the interconnector; irrespective if this is an AC interconnector or a DC interconnector.

However, given the licensing constraints in the UK, the application of Article 6(6) of the Regulation in the absence of an exemption would have a potentially deleterious impact on BritNed’s proposed interconnector project. Article 6(6)(c) creates particular concern for BritNed which, under one interpretation, creates the conditions for all of BritNed’s revenues to be sequestrated leaving investors with the downside risk only.

A more favourable interpretation of Article 6(6) indicates that rewards could be capped, albeit the exact level at which this might occur is unknown. Therefore, on balance BritNed believes that the risks arising with the presence of Article 6(6) cannot be consistent with the consequential level of expected returns.

This leaves BritNed with a dilemma that can only be solved if it were to be exempt from the requirements of Article 6(6). Indeed, an exemption is possible and the criteria that need to be satisfied for an exemption to be granted are set out in Article 7 of the Regulation and are restated in standard condition 9 of the Interconnector Licence required in Great Britain if operating an interconnector. An exemption from the requirements of Article 6(6) would enable BritNed to balance the risks it undertakes in building and operating a long lived asset and the potential returns available to it.

Any risk of the revenue not accruing to the project sponsors would be unacceptable to the sponsors. As a result, there would be no investment without an exemption.

Merely being exempt from Article 6(6) does not solve the issues that article 6(6) highlights. This is because the practical effects of article 6(6) can be recreated through the requirement for tariffs or tariff methodologies to be approved ex-ante by the regulator and reviewed periodically as required under standard condition 10 of the interconnector licence. It is possible for a regulator to only approve tariff methodologies or tariffs that in effect reduce the level of expected revenue in the so called "good years". Furthermore standard condition 11 of the interconnector licence also contains provisions for the regulator, following complaints concerning access, to direct that capacity be made available to the complainant. In some circumstances this could result in a direction to expand capacity. Such capacity expansions could result in the collapse of BritNed's future expected revenues and rendering the project not viable.

### 3.3 Condition c)

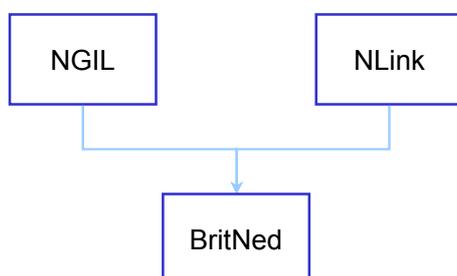
*The interconnector must be owned by a natural or legal person which is separate at least in terms of its legal form from the system operators in whose systems that interconnector will be built*

#### **Legal separation**

The interconnector owner is BritNed Development Limited ("BritNed"). BritNed is a fully separate legal entity which is independent from the TSOs at either end of the interconnector.

The entire share capital of BritNed is owned by National Grid International Ltd ("NGIL") and NLink International B.V. ("NLink"). This is shown in figure 3. NGIL is a wholly owned subsidiary of National Grid plc; NLink is a wholly owned subsidiary of TenneT Holding B.V.

Figure 3: Ownership of BritNed



The Transmission System Operators of the system in which this infrastructure is to be built is National Grid Electricity Transmission plc ("NGET") on the Great Britain side and TenneT TSO B.V. ("TenneT TSO") on the Dutch side. NGIL and NLink, the owners of BritNed, are separated from the TSO companies at either end as shown in figure 4 for NGIL and in figure 5 for NLink. BritNed will be treated in the same way as any other third party by NGET and TenneT TSO.

The final shareholding structure of BritNed remains under review by National Grid and TenneT Holding. However, any change to the current 50/50 joint venture arrangements will not have any impact on the access model used or BritNed’s ability to meet the EC Exemption criteria.

**Financial separation**

BritNed has full financial separation from the other companies within NG and TenneT Holding including the requirement to file separate accounts.

Figure 4: National Grid plc corporate structure

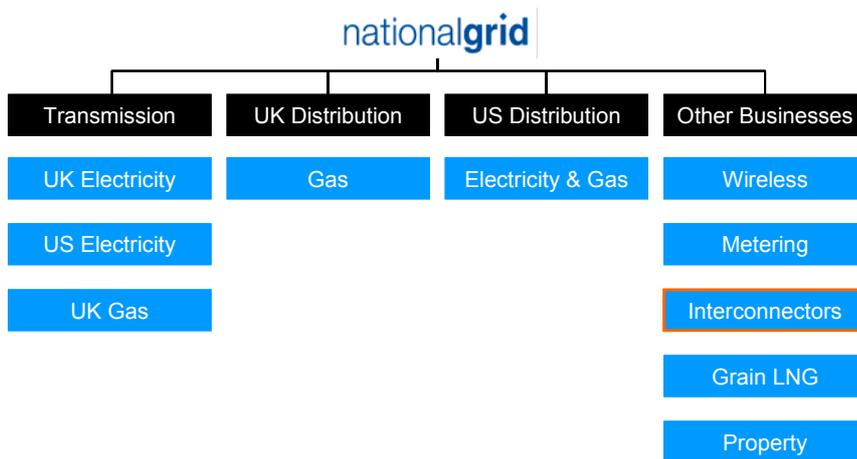
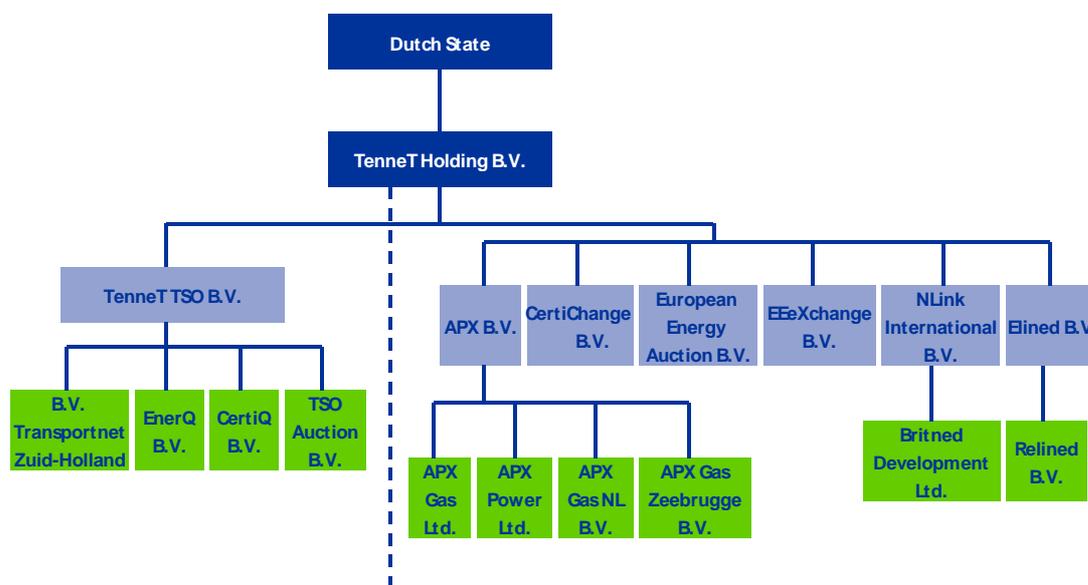


Figure 5: TenneT B.V. group structure<sup>15</sup>



### 3.4 Condition d)

*Charges are levied on users of that interconnector*

BritNed will be exclusively paid for by its users (i.e. participants of the power exchanges under implicit auctioning and interconnector users under short term auctions). All of BritNed's costs (capital investment and operational expenditures) need to be recovered through the auctioning of capacity. This means that none of BritNed's costs will be underwritten through regulated transmission charges.

<sup>15</sup> On 20 December 2005, TenneT has amended its corporate structure by effecting a legal demerger involving an amendment of the articles of association of TenneT, Transmission System Operator B.V. to convert the latter into a holding company named TenneT Holding B.V. and incorporating a new subsidiary named TenneT TSO B.V.; the latter has acquired all assets of the former TenneT, Transmission System Operator B.V. This newly incorporated subsidiary is the designated manager of the national high-voltage grid and the manager of the 150kV grid in the province of South Holland. The holding company structure has been effected inter alia with the aim of achieving a transparent segregation of regulated and non-regulated duties.

### 3.5 Condition e)

*Since the partial market opening referred to in Article 19 of Directive 96/92/EC, no part of the capital or operating costs of the interconnector has been recovered from any component of charges made for the use of transmission or distribution systems linked by the interconnector*

No BritNed costs have been or will be recovered from any (component of) charges made for the use of the systems to be linked by the interconnector. Furthermore, the new GB legislative framework for interconnectors prevents this from ever being a possibility in Great Britain.

### 3.6 Condition f)

*The exemption is not to the detriment of competition or the effective functioning of the internal electricity market, or the efficient functioning of the regulated systems to which the interconnector is linked*

The positive impact of BritNed on wholesale and retail competition in the EU is set out under Condition a).

BritNed will disclose information to the market according to rules based on those implemented by the England to France interconnector ("IFA") (see Appendix 8).

The business model proposed for the BritNed project is fully consistent with all the provisions of the latest draft of the Congestion Management Guidelines. In particular it:

- provides for market based congestion management methods (implicit and explicit auctions) (Art. 20.1);
- is committed to providing effective UIOLI/UIOSI mechanisms in line with regulatory guidelines (Art. 2.5);

- provides for intra-day congestion management (Art. 1.9);
- does not discriminate between agents in explicit and implicit auctions (Art. 2.7);
- where necessary, national regulatory authorities have imposed restrictions to prevent market dominance (Art. 2.10). Dutch law stipulates that at any one time no more than 400 MW of the capacity of all interconnectors can be sold to one party.

BritNed is also fully compliant with the recommendations set out in the joint Frontier Economics and Consentec report entitled “*Analysis of cross-border congestion management methods for the EU internal electricity market*”. This report’s main conclusion recommends a move, across the EU, towards a mixture of implicit and explicit auctions on international interconnectors with a view to relieving congestion and facilitating power trade.

BritNed expects that the system operators could use the interconnector for emergency assistance, for certain ancillary services (such as frequency control), and for balancing. Since the interconnector would provide each system operator with additional options for ancillary services and balancing the result would be an increase in competition for the provision of these services. However such benefits would be subject to appropriate agreements between the system operators, and on the agreement of suitable commercial terms for the use of the interconnector between the system operators and BritNed.

BritNed would be happy to enter into tripartite contractual arrangements on the IFA model with the TSOs at either side of the interconnector to facilitate balancing trades across the interconnector.

Finally, BritNed will not have any detrimental impact on the regulated systems that it interconnects.

In Great Britain NGET is the operator of the regulated system to which the BritNed interconnector will be linked at its British end and also the owner of the regulated system in England and Wales.

NGET is obliged by its Transmission Licence to ensure that the regulated system that it operates meets fixed technical standards for security and power quality. NGET is, therefore, obliged to ensure that no connected party can adversely affect the functioning of the GB regulated transmission system.

NGET does this by preventing parties from connecting to its system until any necessary extensions to its system are completed; by restricting the operation of connected parties until the necessary extensions to its system are completed; by obliging all connected parties to comply with the Grid Code; and by obliging parties to comply with site-specific technical conditions.

In the case of BritNed's interconnector, all of these measures have been put in place. This has been done through the Construction Agreement and Bilateral Connection Agreement between NGET and BritNed, and through the Connection and Use of System Code to which BritNed has acceded.

This ensures that BritNed's operation will not be to the detriment of the efficient functioning of the British regulated electricity transmission system.

In the Netherlands, TenneT TSO is the owner and operator of the high voltage transmission grid to which the BritNed interconnector will be linked at its Dutch end.

BritNed will be subject to similar conditions and obligations as in the UK following the Dutch Electricity Act, the Tariff Code, the Grid Code and the System Code. BritNed will also be subject to a standard connection agreement with TenneT TSO.

The Dutch Electricity Act states that if a third party other than TenneT TSO has constructed an interconnector, this interconnector has to be managed by TenneT TSO (Article 16 of the Dutch Electricity Act).

The conditions and obligations imposed on BritNed ensure that BritNed's operation will not be to the detriment of the efficient functioning of the Dutch regulated electricity transmission system.

#### 4 CONCLUSION

BritNed has requested an exemption from Article 6(6) of the Regulation and the relevant provisions in GB and Dutch law implementing Articles 20 and 23 of the Electricity Directive (2003/54/EC) in respect of its proposal to interconnect the two transmission systems of the Netherlands and Great Britain..

BritNed seeks an exemption for a period of 25 years. This reflects the forecast discounted payback period and the overall risk associated with a high degree of uncertainty of revenues over the life of the assets.

BritNed has demonstrated that the investment enhances competition in electricity supply. As part of satisfying conditions (a) and (f) BritNed has commissioned an independent competition assessment by Frontier Economics. Frontier Economics concludes that:

- BritNed’s interconnector as a physical investment enhances competition;
- Neither BritNed’s proposed ownership nor operation under access terms compliant with RTPA would jeopardise the competition benefits that the interconnector could bring;
- BritNed’s commitment to institute auction access arrangements compatible with RTPA means that exemption from RTPA would not change the competitive outcomes from those that would have ensued if the interconnector were to be operated under RTPA;
- BritNed will comply with evolving guidelines on UIOLI, and intra-day/balancing trade; and
- As a consequence, BritNed itself is pro-competitive and the exemption is not to the detriment of competition.

Frontier Economics’ competition assessment concludes that BritNed’s proposed interconnector, with its proposed access arrangements, meets the two competition tests embodied in Article 7, 1(a) and 1(f), of EC Regulation 1228/2003.

BritNed has also demonstrated the following:

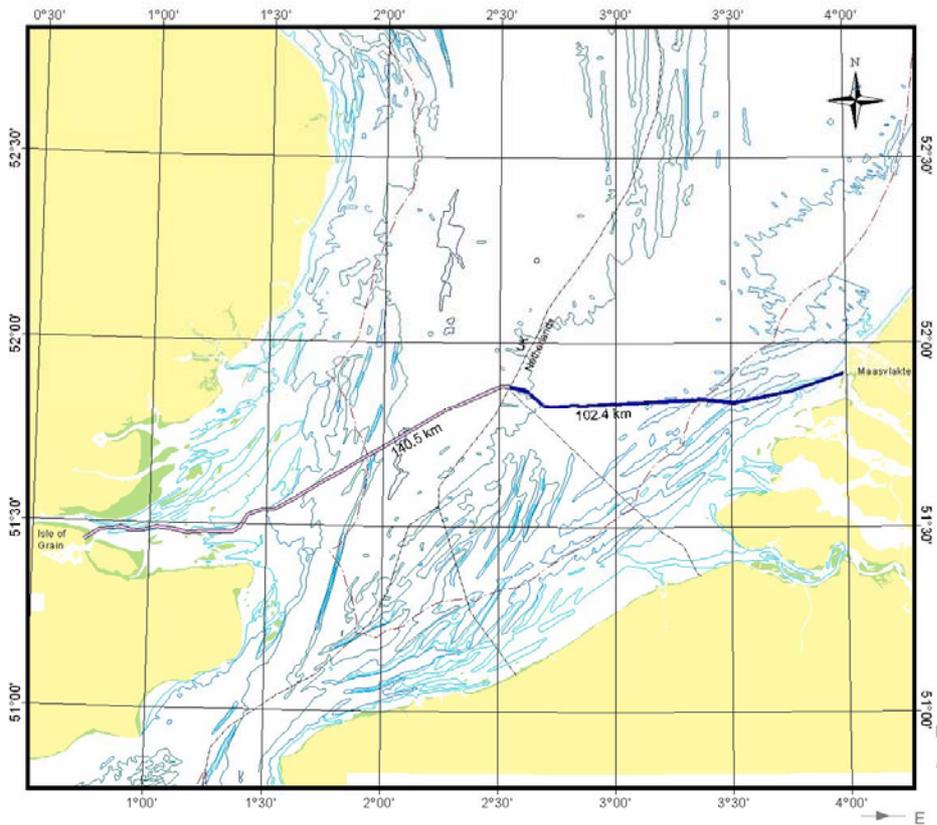
- the level of risk attached to the investment is such that the investment would not take place unless an exemption is granted.;
- it is both financially and legally separate from NGET and TenneT TSO to whose systems the interconnector is to be connected to;
- charges are levied on the users of the interconnector, and none of BritNed's costs will be recovered through regulated transmission charges; and
- The exemption is not to the detriment of competition or the effective functioning of the internal electricity market, or the efficient functioning of the regulated systems to which the interconnector is linked. Frontier Economics demonstrates that the interconnector has a positive impact on wholesale and retail competition in the EU and that BritNed will not negatively affect the regulated systems since it will be subject to the usual safeguards enshrined in the respective connections agreements at either side of the interconnector.

BritNed therefore believes that this exemption request satisfies the conditions which must be met for a new DC interconnector to be granted an exemption.

## **APPENDICES**

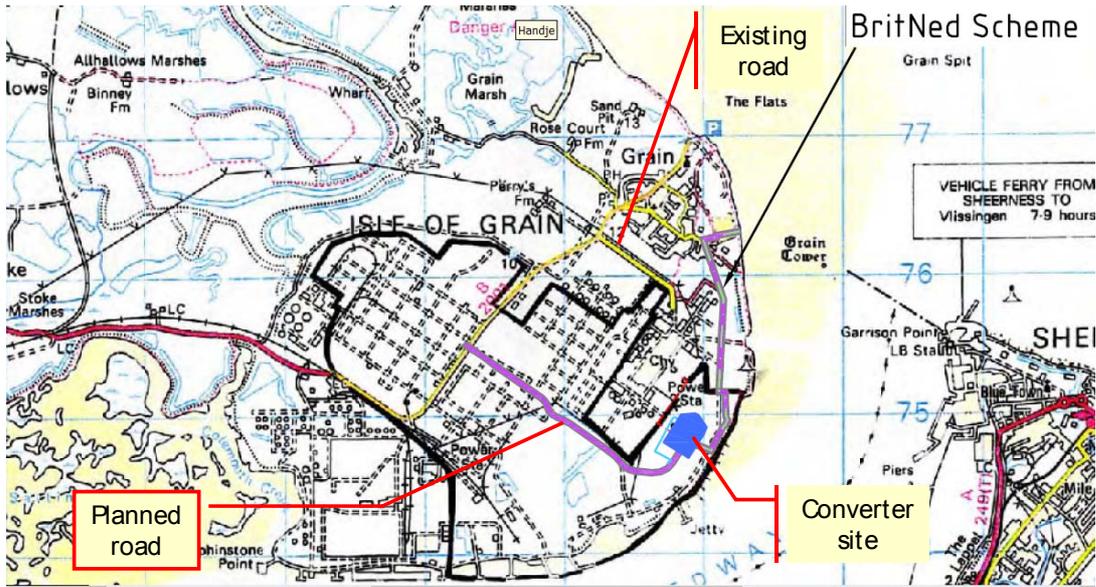
1. Map
2. Site plan
3. Permits and licenses required
4. APX - Assessment of OJEU response against the criteria
5. Illustrative examples of how E2E works
6. Project financial information
7. Competition study
8. IFA publication requirements

**Appendix 1. Map**



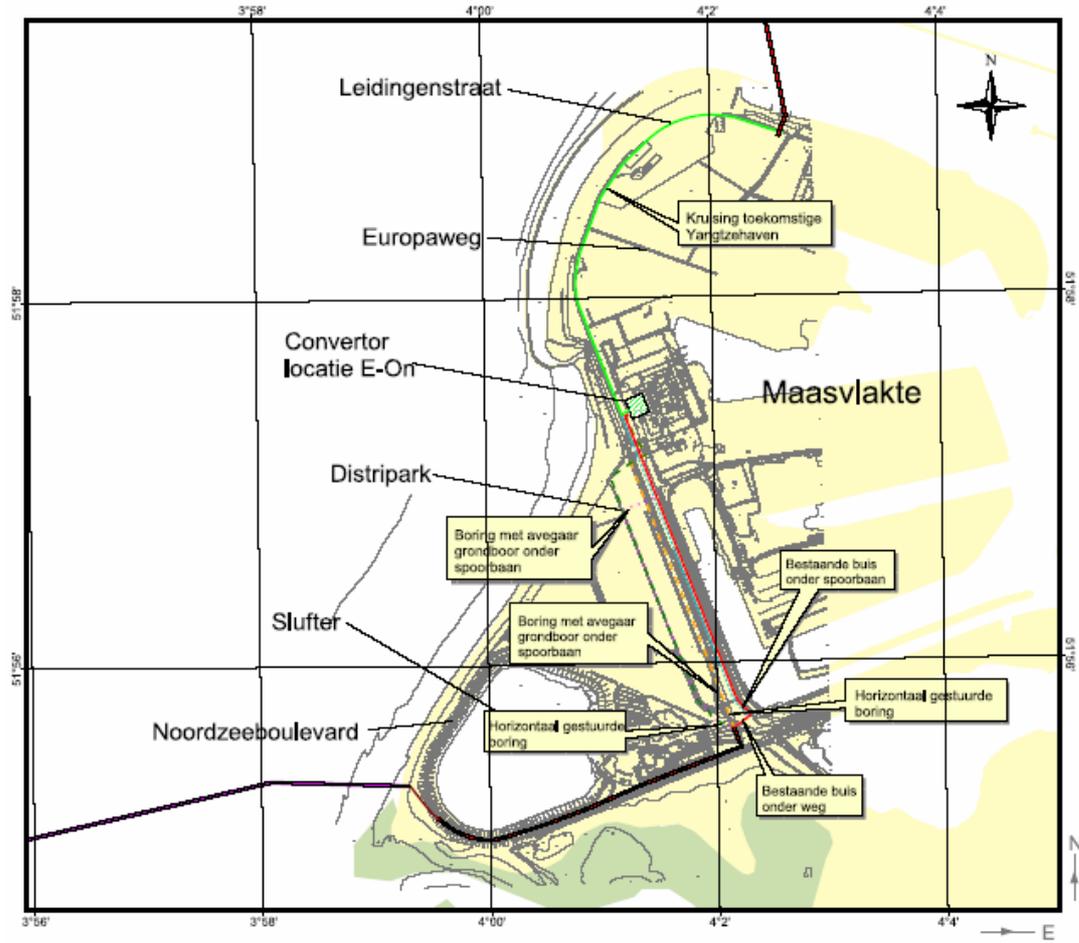
## Appendix 2. Site plan

### Site Grain

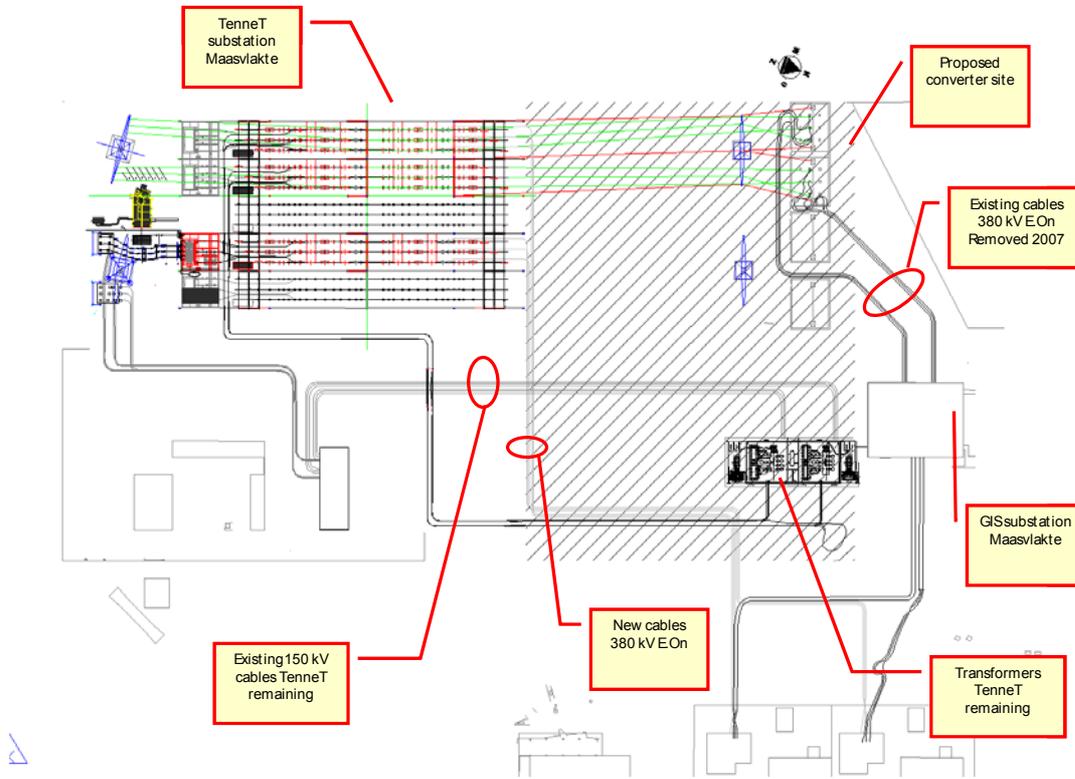


Overview Grain site

Site Maasvlakte



*Cable route from landfall to station*



Site layout BritNed converter station

**Appendix 3. Consents required**UK consents plan (Land and Marine)

Ref	Location	Licensing Authority	Permit	Time to obtain consent	Submit Application	Receive consent	Responsible	Primary / secondary consent
UKL1	Land cable route, converter station, access road.	Medway Council	Planning permission under Town and Country Planning Act 1990	3 months (estimated)	Submitted Jan 2005	Expected Jan 2006 <sup>16</sup>	TEP	Primary consent
UKL2	Scheduled Monument Consent	Department for Culture, Media and Sport	Ancient Monuments and Archaeological Areas Act 1979	3 months	Feb 2006	Expected May 2006	TEP	Secondary consent
UKL3	Construction work within 15m of Medway estuary ( <i>HDD crossing under seawall</i> )		Land drainage consent under (Environment Act 1995 and Water Resources Act 1991).	2 months	Mar 2005	Received July 2005	Metoc	Secondary consent
UKL4	Access road crossing of counter seawall, and installation of floodgates.	Environment Agency	Consent under Section 23 of Land Drainage Act 1991.	2 months	July 2006	Sept 2006 <sup>17</sup>	Contractor	Secondary consent
UKM1	Mean High Water to limit of UK territorial waters.	DfT, Ports Division.	Consent under Section 34 of the Coast Protection Act	10-12 weeks	Submitted Dec 2004	Received October 2005	Metoc	Primary consent

<sup>16</sup> A revision to planning permission may need to be submitted for the small section of the possible new route of the AC land cable route from the converter station to the NGET substation.

<sup>17</sup> Consent in principle for inner seawall crossing and installation of floodgates was received 29<sup>th</sup> June 2005.

Ref	Location	Licensing Authority	Permit	Time to obtain consent	Submit Application	Receive consent	Responsible	Primary / secondary consent
UKM2	Mean High Water to limit of UK territorial waters.	Crown Estate	Lease for use of the seabed under The Crown Estates Act 1961	One year	March 2004	Received July 2005	BritNed	Primary consent
UKM3	Cable/pipeline crossings.	DEFRA	Consent under the Food and Environment Protection Act 1985 (FEPA)	Ten weeks	Submitted Dec 2005	Expected February 2006	Metoc	Secondary consent
UKM4	Installation of conduits	DEFRA	FEPA	Ten weeks	Submitted Dec 2005	Expected February 2006	Metoc	Secondary consent
UKM5	Sandwave presweeping	DEFRA	FEPA	Ten weeks	Submitted Dec 2005	Expected May 2006	Metoc	Secondary consent
UKM6	Oil and gas license blocks/ cables/ pipelines crossed by the cable.	Oil and Gas operators and cable owners	Crossing agreements	Nine months	June 2004	Consents in principle received	Metoc	Secondary consent
UKM7	Medway Port Jurisdiction	Medway Ports	River works license under the Medway Ports Authority Act, 1973	3 months (estimated)	Submitted Dec 2004	Expected March 2006	Metoc	Primary consent
UKM8	Port of London Authority Jurisdiction	Port of London Authority	River Works License under Section 66 of the Port of London Act 1968	3 months	Submitted Dec 2004	Expected March 2006	Metoc	Primary consent

### Note

The licensing/granting authorities for secondary consents are consultees or can make representations in the primary consent process. It is anticipated that any severe obstacles to the secondary consents would be raised as objections to the grant of primary consents.

NL consents plan

Ref	Location	Activity	Licensing Authority	Legislation	Status	Consent received (target date)	Responsible	Primary / secondary consent
N1	12-mile zone – E.on site	Spatial policy decision	Council of Ministers (represented by EZ,VROM)	PKB Part 1	Draft request	1 August 2006	Royal Haskoning	Primary
N2	12-mile zone – E.on site	Spatial policy decision	Council of Ministers (represented by EZ,VROM)	PKB Part 2	To be prepared on the basis of consultations	19 December 2006	Royal Haskoning	Primary
N3	12-mile zone – E.on site	Spatial policy decision	Council of Ministers (represented by EZ,VROM)	PKB Part 3	To be prepared on the basis of consultations	19 December 2006	Royal Haskoning	Primary
N4	12-mile zone – E.on site	Spatial policy decision	Members of the Lower & Upper House	PKB Deel 4	To be prepared on the basis of outcome of parliamentary debate	24 April 2007	Ministries EZ, VROM	Primary
N5	Crossing Sea Defence	Realisation crossing the sea defence, from Ilw to Slufterroad	Rijkswaterstaat Directorate North Sea (in consultation with RWS Directorate South-Holland, District Nieuwe Waterweg)	WBR	Draft request	24 April 2007	Royal Haskoning	Primary
N6	Landroute Slufterroad	Realisation landroute next to Slufterroad	Rijkswaterstaat Directorate North Sea (in consultation with RWS Directorate South-Holland, District Nieuwe Waterweg)	WBR	Draft request	24 April 2007	Royal Haskoning	Primary

Ref	Location	Activity	Licensing Authority	Legislation	Status	Consent received (target date)	Responsible	Primary / secondary consent
N7	Marine Route	Realisation (route and construction) of off shore activities, crossing the sea defence and landroute next to Slufferroad	Rijkswaterstaat Directorate North Sea	WBR	Draft request	24 April 2007	Royal Haskoning	Primary
N8	Converter station	Converter station (Installations and permit decree category 201b): noise, pollution, etc	Provincie Zuid-Holland, represented by Environmental Agency DCMR	Environmental Permit (milieuvergunning)	Irrevocable permit, to be amended on final design	Consent received (Ref: 20051104 Engelse vertaling WM-beschikking (definitief).doc)	TenneT & Omniplan	Primary
N9	Converter station		Municipality of Rotterdam (DS+V, Bouwtoezicht)	Housing Act Building Permit	Request to be prepared on final design	28 December 2006	TenneT & Omniplan	Primary
N10	Cooling Station <sup>18</sup>	Cooling for ducts, if necessary	Municipality of Rotterdam (DS+V, Bouwtoezicht)	Housing Act Building Permit (bouwvergunning)	Request to be prepared on final design	28 December 2006	TenneT & Omniplan	Primary
N11	Route Leidingenstrook	Alignment and construction of on-land cables along Leidingenstrook	Municipality of Rotterdam, Leidingenbureau	Housing Act Construction Permit (aanlegvergunning)	Request submitted	28 December 2006	GasUnie	Primary
N12	Route south of Demarcation Line	Alignment and construction of on-land cables along Slufferroad	Municipality of Westvoorne	Housing Act Construction Permit (aanlegvergunning)	Request to be submitted before Pkb Deel 3	28 December 2006	Haskoning	Primary

<sup>18</sup> Cooling station not likely.

Ref	Location	Activity	Licensing Authority	Legislation	Status	Consent received (target date)	Responsible	Primary / secondary consent
N13	Sea defence crossing	Exemption or revising necessary for crossing the sea defence	Municipality of Rotterdam (dS+V, Bouwtoezicht) en Leidingenbureau	Exemption art. 19 Act on Spatial Planning or revising the current or new spatial plan MV1 or inclusion in the new MV2 spatial plan	To be submitted before Pkb Part 3	28 December 2006	Haskoning	Primary
N14	Converter Station	Withdrawal of ground water connected with construction activities (to combine with construction and building permit) <sup>19</sup>	Provincie Zuid-Holland, represented by Environmental Agency DCMR	Ground water act		28 December 2006	Contractor	Secondary
N15	Converter Station	Discharge of waste water into the surface water <sup>20</sup>	Rijkswaterstaat Directorate North Sea (for discharges in north sea), Rijkswaterstaat Directorate South Holland or Polder/Dike board (for discharges in inner waters)	Surface Water Pollution Act Permit (vergunning op grond van Wet verontreiniging oppervlaktewater)	To be submitted on the basis of the final design (if necessary)	28 December 2006	TenneT/OmniPlan	Secondary

<sup>19</sup> Only needed in case of ground water withdrawal.

<sup>20</sup> Only needed in case of discharge to surface water.

Ref	Location	Activity	Licensing Authority	Legislation	Status	Consent received (target date)	Responsible	Primary / secondary consent
N16	Installation and operation of all activities	Exemption for disturbing protected species during installation and operational phase	Ministry of LNV, LASER	Flora and Fauna Act	Submitted.	31 March 2006	OmniPlan	Secondary
N17	Installation and operation of all activities	Activities (temporary and permanent) in or near Habitat and Bird Directive Areas <sup>21</sup>	Ministry of LNV and/or Province of South Holland	Nature Protection Act	To be submitted before Pkb Part 3	28 July 2006	Haskoning	Primary
N18	Connection to the grid in NL	Field connection	TenneT	National Electricity Act	Letter of intent		BritNed Management	Primary

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<sup>21</sup> In force since October 2005.

**Appendix 4. APX - Assessment of OJEU response against the criteria**Technical Criteria

<p>Tenderers must provide evidence that they have the ability to operate power exchanges in both GB and NL and that (if they do not already operate such exchanges) they have the capability to establish them prior to 1 Jan 2008.</p>	<p>APX already operates exchanges in both countries.</p> <p>The Dutch exchange is already suitable for exchange-to-exchange trading.</p> <p>A suitable GB exchange can be established by reusing existing Dutch software and using existing GB contractual / collateral / banking arrangements. APX claims that it will be capable of introducing such a GB exchange in 2006, and may do so.</p>
<p>Tenderers must provide evidence that such exchanges either already exhibit a sufficient level of liquidity, or will do when BritNed is in service.</p>	<p>APX's Dutch exchange already achieves a substantial degree of liquidity (c. 15% of demand). This will be boosted further by coupling to other exchanges.</p> <p>The British exchange is expected to achieve sufficient liquidity thanks to it being coupled to the (liquid) Dutch exchange.</p>
<p>The tenderer must describe activities, relevant to demonstrating their ability to operate a power exchange, which they have executed in the past five years or which are currently underway.</p>	<p>APX already operates power and gas exchanges in both GB and NL. They are the operator of the Belpex exchange, which is to start operation in 2006.</p>

The tenderer must describe activities, relevant to demonstrating their ability to couple two power exchanges, which they have executed in the past five years or which are currently underway.	APX is currently working on coupling the Dutch power exchange to Nordpool and Belpex/PowerNext.
The tenderer must demonstrate that they have sufficient staff resources for the activities envisaged, including CVs of key personnel.	APX has a total of 80 staff. CVs for the six key staff for this project have been provided.
The tenderer must demonstrate that they have appropriate quality-assurance and business-continuity / disaster-recovery systems.	<p>APX has described its quality assurance processes. These have recently been audited by Elexon's external auditors.</p> <p>APX maintains back-up arrangements at a secure data centre, with real-time replication of data from their primary sites. Redundancy of essential skills is also provided. Business continuity arrangements in GB are regulated by the Financial Services Authority.</p>

#### Legal Criteria

If the tenderer is a consortium then information on the consortium members must be provided.	Not applicable
If the tenderer is a subsidiary company then full details of group structure must be provided.	Provided.

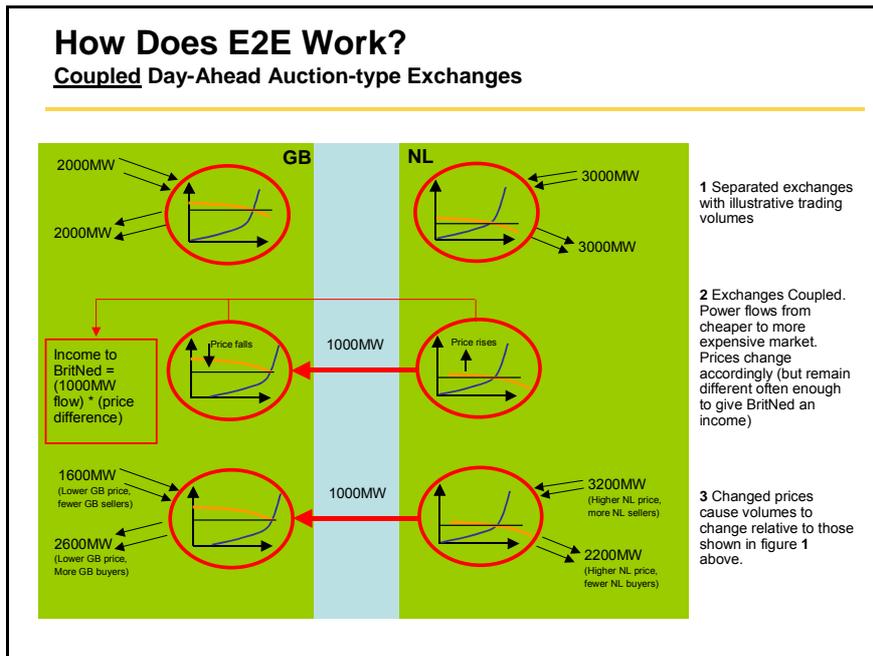
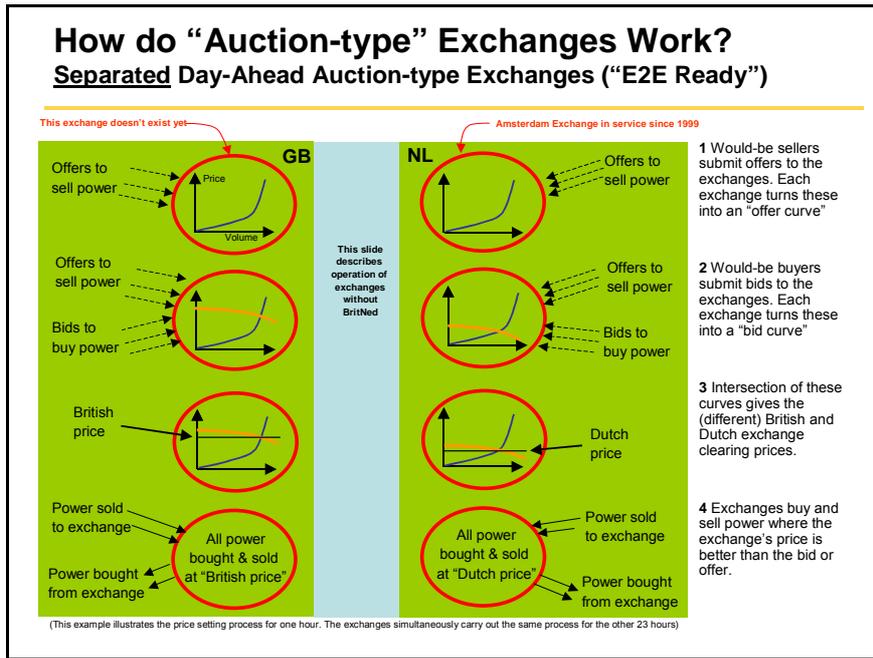
Economic Criteria

<p>The tenderer must show that they are financially sound and capable of undertaking the activities in question for an indefinite period.</p>	<p>Audited accounts for 2002, 2003 and 2004 have been provided by APX.</p> <p>Most recent year (2004) shows cashflow from operations of €3.6m. Operating profit (before amortisation of goodwill) was €2.5m.</p> <p>Sale of APX shares in late 2005 values company at €50m.</p>
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Conclusion

All criteria are met.

Appendix 5. Illustrative example of how E2E works



**Appendix 6. Project financial information (CONFIDENTIAL)**

See separate attachment

**Appendix 7. Competition study by Frontier Economics**

See separate attachment

**Appendix 8. IFA publication requirements**

<b>Data/Information</b>	<b>Activity</b>	<b>Timescales</b>	<b>How</b>
Interconnector Access Rules	Publication of Rules	Continuous	Publication on Website(s) / Individual Email to IC Users
	Rule Change - Consultation	Min Period 10 business days	Circulation of consultation documents incl. draft changes (redline version of Rules) to existing Users by e-mail
	Rule Change Implementation	Min Period 10 business days	Publication on Website(s) / Individual Email to IC Users
	Changes to Operational Access arrangements	Min Period 10 business days	Publication on Website(s) / Individual Email to IC Users
Eligibility Process/Criterion	IFA User Guide	Continuous	Publication on National Grid Website
	IFA Application Form	Continuous	Publication on National Grid Website
	IFA User Agreement	Continuous	Publication on National Grid Website
	GB CUSC Application Form	Continuous	Publication on National Grid Website
	Specimen Letter of Credit	Continuous	Publication on National Grid Website
	Summary Cost Information	Continuous	Publication on National Grid Website
Capacity Auctions	Timetable of Periodic Auctions (except day ahead)	Published Annually - Year Ahead (Updated as Required)	Publication on Website / Individual Email to IC Users
	Auction Specifications	5 Business Days before Auction	Publication on Website / Individual Email to IC Users
	Daily Auction Timetable (Specific Arrangements for Public Holidays)	Published Annually - Year Ahead (Updated as Required)	Publication on Website / Individual Email to IC Users
	Daily Auction Overview	Continuous	Publication on National Grid Website
	All Auction Results (example attached)	Target - Auction Close +4 hrs (Complete Auction Results Archive from March 2001)	Publication on National Grid Website
Operational Data	Planned Interconnector Outages Short Term Planned Outages	Published Annually - Year Ahead As required	Publication on Website / Individual Email to IC Users Publication on Website / Individual Email to IC Users
	Trip / Fault Information incl Curtailment Information	As close to Real time as possible	Email to IC users
	Netted nominations/Day ahead flow profile Intra-day Transfer Limits	D-1 D-1 and Gate +2 hrs	Publication on RTE website Publication on RTE website