

## Electricity transmission charging: assessment of options for change Consultation by Ofgem

*Submission by International Power Plc*

### **(I) About International Power Plc**

International Power Plc (IPR) welcomes the opportunity to contribute to Ofgem's Consultation *Electricity transmission charging: assessment of options for change*.

International Power plc is a leading independent power generation company with active interests in closely linked businesses such as LNG terminals and water desalination. Following the combination with GDF SUEZ Energy Europe and International, International Power plc has strong positions in all of its major regional markets (Latin America, North America, the Middle East, Turkey and Africa, UK-Europe, Asia and Australia). In total, it has 66 GW gross capacity in operation and committed projects for a further 22 GW gross new capacity.

In the UK-Europe region, International Power plc has 13.2 GW capacity in operation and a further 1.3 GW under construction. This includes over 7.3 GW of plant in the UK market made up of a mixed portfolio of conventional plant – coal, gas, CHP, a small diesel plant, and the UK's foremost pumped-storage facility. Several of these assets are owned and operated in partnership with Mitsui & Co. Ltd. IPR's assets represent just under 9% of the UK's installed capacity, making IPR the country's largest independent power producer.

IPR in the UK-Europe region operates about 1100 MW of wind power. The company is keen to develop its renewable portfolio further and is developing a range of projects in the UK as part of this strategy. The company also has a significant Industrial and Commercial retail supply business, and a gas supply business in the UK.

### **(II) Summary key points**

- **Of the three methodologies presented and based on the Redpoint analysis International Power believes that the current charging regime remains the most appropriate methodology – it balances the needs of ensuring security-of-supply while driving down the carbon intensity of electricity by investment in renewable generation, and is also takes into account the overall cost to the consumer.**

- The 'Current ICRP' methodology does have limitations particularly in charging in areas where there is a diversity of fuel sources which are unlikely to run coincidentally and as such require a lower level of transmission investment. However, the proposed 'Improved ICRP' model does not address this defect in a meaningful way – it provides a relative small additional benefit of increased renewable deployment but at significant cost in terms of security-of-supply.
- The 'Socialised' option would ensure that renewable targets were met principally by offshore generation but at a significantly higher cost to the consumer. The 'Socialised' option potentially discourages all other forms of low carbon generation based on the current ROC regime. IPR supports Ofgem's proposal to discount this model.
- IPR believes that the 'Status Quo' is fundamentally the most appropriate charging methodology but that there is merit in moving forward with incremental change to address the following issues in the ICRP methodology - these changes are different from those proposed in 'Improved ICRP':
  - The current methodology does not explicitly recognise the benefits of the need for reduced transmission investment in areas where there is a diversity of fuel source and charges all users based on the marginal transmission. Improvements should be made to the current methodology to recognise this;
  - The proportion of cost of the transmission system borne by generation has been discussed by the industry on a number of occasions over recent years with no firm conclusion. IPR believes that TransmiT should address this issue explicitly rather than continue to keep it under review; and
  - Although transmission charging arrangements vary across Europe the general position is that demand funds the majority of transmission investment. This is at odds with the GB position of a Generation/Demand (G/D) split of 27/73. The uncertainty associated with keeping this position under 'constant' review is not helpful in the current climate where significant changes to the transmission methodology are proposed. We believe that a move to G=0 (either in one or several stages) should be undertaken to improve the competitiveness of GB generation in Europe.

### **(III) General Comments**

1. There are a number of important issues that need to be examined such as the complexity of the options and the uncertainty created by a continued period of change for the industry; the effect of a significant change on the economics and location of reserve plant; and technical issues relating to the design of the 'Improved ICRP' methodology.

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**Complexity and uncertainty***Complexity of improved ICRP*

2. There is clearly a balance to be drawn between the regime complexity and the additional benefits gained from increasing that complexity. In the case of "Improved ICRP" the complexity will increase significantly from the current ICRP which is based on a well understood methodology used in other industries.
3. The "Improved ICRP" methodology effectively combines two independent load flows, taking partial results from each, and combining them. The complexity is further compounded by the tariff section that adjusts MWkm figures by variable amounts to deliver the final result. It is far from clear if the final tariffs achieve the intent of the methodology in terms of numerical values or that the methodology is mathematically rigorous.
4. IPR believes that any methodology that is implemented which is more complex than the current methodology should be independently assessed to ensure that it is mathematically correct and delivers appropriate values in the final tariff.

*Electricity Market Reform capacity mechanism*

5. The Redpoint analysis assumes that security of supply issues will be managed by a Capacity Mechanism (CM) delivered as part of EMR. Thus the analysis has discounted the majority of security-of-supply issues. It is unclear when and in what form a CM will appear and the first payments may not be for a number of years. If significant changes are made to the geographic distribution of TNUoS ahead of the implementation of a CM there is a possibility that the cost of the CM will increase significantly, driven by early closure of marginal plant. IPR believes that further analysis in this area is required.

*Generation/Demand split*

6. One of the benefits of the current holistic view of transmission charging is that it will set the direction for a number of years such that developers and existing generation owners will have reasonable certainty as to the charges they will face over the next few years. Under several of the proposed scenarios there is potential for significant 'windfall' gains and losses to some users.
7. A change in the Generation/Demand (G/D) split is one of the areas where significant change to user's charges will occur. To make efficient locational decisions for new plant and closure decisions for existing plant a good understanding of the future direction of TNUoS charges is required. We believe, therefore, that TransmiT should deliver a firm position on the future direction of the split rather than a decision to keep this aspect of charging under constant review.

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**Effect of Improved ICRP and Socialised charging***Loss of reserve plant near major demand areas*

8. The charges resulting from the 'Improved ICRP' and 'Socialised' models reduce the attractiveness of reserve plant being located near centres of demand - rather they encourage reserve plant to locate in congested parts of the transmission system when compared to the current methodology which charges on a locational capacity basis. This is of significant concern as it will quickly erode the current level of system security. IPR believes it is important to review whether the 'load factor' calculated in these two models should be based on historic output or future anticipated output with an allowance for flexibility.

*Windfall gains/losses for existing plant*

9. The charges resulting from the 'Improved ICRP' and 'Socialised' models will produce 'windfall gains' for some plant types and locations and 'windfall losses' for others. Where 'windfall gains' occur it is unclear how this will affect future actions and will simply result in increased revenue for the operator. Where 'windfall losses' occur the financial position of a project can be undermined. IPR believes there is merit in transitional relief where this would cause hardship.

*Current SQSS methodology has implicit sharing of the network*

10. The current methodology used to design the network is based on the physical needs of the transmission system. The methodology is based on a Cost Benefit Analysis that takes account of plant characteristics and the probability of co-incident generation. This methodology is used to design the system.
11. The charging model is based on the physical system (that has been designed taking account of plant characteristics) and considers incremental growth within that system. The 'Improved ICRP' model and the 'Socialised' model then give a further allowance based on historic load factor. This resulting charge may in some circumstances bear no relationship to the actual transmission reinforcement required. Breaking the link between transmission reinforcement and charging undermines the 'Improved ICRP' and the 'Socialised' model.

**Design of "Improved ICRP"**

12. IPR does not support the 'Improved ICRP' model as it stands but believes that there are improvements that could be made to the existing charging methodology which would help to address a number of issues identified.

*The "Improved ICRP" model use of peak and year round tariffs does not represent the incremental cost of transmission.*

13. IPR does not agree that the split of peak tariff and a year round tariff is appropriate. The mathematical combination of the resulting marginal km we believe bears little, if any, relationship to the design of the system. The SQSS methodology based on multiple peak load flows should be used to determine the incremental cost of transmission. A derivative of the SQSS methodology should be used to validate any charging model.

*Evidence that the load factor reduction is not a proxy for investment*

14. Evidence present at the Technical Working Group meetings clearly shows the relationship between transmission investment and plant load factor is not linear. The relationship needs to take account of the characteristic of the zone - zones that have a high level of flexible thermal plant can absorb far more intermittent plant than other zones before transmission investment is required. The 'Improved ICRP' model should, as a minimum, have load related factors that vary by zone and plant type. In negative charging zones consideration should be given to using the maximum potential load factor, while in positive zones the minimum potential load factor should be used as it is this flexibility that gives rise to a reduced level of transmission.

*The probability of constraints and associated investment should be included in the model.*

15. The issue of zonal constraint charges was addressed in the original DECC Transmission Access Review work, but it is still potentially the case that in circumstances where generation is constrained behind a boundary the generator that is constrained benefits from reduced transmission costs and does not attract any Balancing Services Use of System (BSUoS) charges. This aspect of the charging should be recognised and addressed in the charging model such that in zones where there is a likelihood of constraints a higher load factor should be used (than the forecast one) to recognise that a greater level of transmission investment will be needed. This will require the use of a boundary capacity model to determine appropriate factors.

*Load factor differentials should be constant, irrespective of G/D split*

16. The charging part of the model appears to produce tariff differentials where the difference between load factor elements is dependent upon the G/D split. This means that the lower the G/D split (i.e. the lower the proportion that generation pays), the higher the difference between base load and intermittent tariffs. This should be examined, and if found to be the case, should be addressed to ensure a constant relationship in the tariff model.

**(IV) Response to Specific Questions**

***Question 1: Do respondents consider that we have appropriately identified and where possible quantified the impacts of the Project TransmiT options?***

17. No. Issues associated with the location of reserve plant and the benefits of locating wind generation in areas that also have flexible generation have not been considered. This is an important area which should be addressed. The 'Improved ICRP' model gives an equal benefit to load factor plant irrespective of its type or location. In areas where there is only one type of generation there is unlikely to be any benefit from reduced transmission investment. The methodology will thus attract low load factor (wind) generation to inappropriate locations, increasing the cost of constraints and/or the need for transmission investment to the end consumer.
18. The modeling has not considered the effect on reserve plant and has assumed the Electricity Market Reform (EMR) will solve any security of supply issues.

***Question 2: Do respondents consider that there are additional impacts which we should take into account in the decision making process and, if so, what are these?***

19. The 'Improved ICRP' option would present a strong closure signal for southern based low load factor plant. The modeling assumes that a Capacity Mechanism (as part of EMR) would solve any security-of-supply issues. Given that a Capacity Mechanism is unlikely to be in place in the near future, possibly not before 2020, it would be prudent to perform modeling based to determine what effect this will have.

***Question 3: Do respondents consider that we have appropriately identified the potential interactions of the Project TransmiT options?***

20. Yes, although it is unclear if planning limitations for onshore developments have been factored into the Redpoint modeling.

***Question 4: Do respondents consider that we have appropriately identified the likely impacts or consequences of these interactions?***

21. Yes, likely impacts or consequences of potential interactions have been considered.

For further information please contact:

Simon Lord  
Head of Transmission Services  
International Power Plc  
Senator House  
85 Queen Victoria Street  
London, EC4V 4DP  
Telephone: 07980 793692  
Email address: [simon.lord@jprplc-gdfsuez-ukeu.com](mailto:simon.lord@jprplc-gdfsuez-ukeu.com)

Or

Dr Chris Anastasi  
Head Government Affairs, Policy and Regulation  
International Power Plc  
Senator House  
85 Victoria Street  
London EC4V 4DP  
Telephone: 0207 320 8995  
Email address: [chris.anastasi@jprplc-gdfsuez-ukeu.com](mailto:chris.anastasi@jprplc-gdfsuez-ukeu.com)