

GB SQSS & Charging Methodology Interaction

TCMF - Consultation

Background

- ◆ Issue raised via Ofgem Dec 2005
- ◆ GB SQSS specifies a double circuit connection for generation
 - ◆ Single circuit allowed as a design variation at customer request
- ◆ Following implementation of PLUGS - less incentive for customer to request design variation
 - ◆ New OHL Connections > 2km Infrastructure Assets
 - ◆ Cost recovered through TNUoS
 - ◆ Limited longer term financial benefit to User

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- ◆ Applies in several areas:
 - ◆ Highland generation spurs
 - ◆ Scottish Islands
 - ◆ Offshore Wind

 - ◆ Several options considered:
 1. Status Quo
 2. Connection Charging Methodology Change
 3. Nodal Security Factors
 4. New Access Product
 5. Nodal Security Factors for Design Variations

‘Status Quo’

- ◆ Current Methodology with no amendment
- ◆ Accept that the benefits of shallow customer connections outweigh disadvantages of less accurate single circuit cost reflection
- ◆ Customers are protected from investment decisions taken for wider system reasons
- ◆ Reduced incentive for Users to consider design variations following implementation of plugs

Connection Charging Methodology Change

- ◆ Reinstate 'Generation Only Spurs'
- ◆ New connection charges are likely to be greatly increased, as cost of entire spur is picked up
 - ◆ TNUoS will reduce but not by the same magnitude
- ◆ Double circuit connection charge would include substation assets costs
- ◆ A stronger signal produced but far higher connection charges
- ◆ Many historic issues:
 - ◆ Generators exposed to design decisions taken for wider system reasons
 - ◆ Potential barrier to new entrants
 - ◆ High level of charges
 - ◆ Risk of large termination charges

Nodal Security Factors

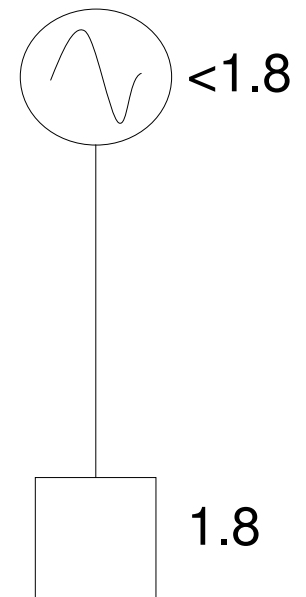
- ◆ Use a Nodal Security Factor rather than a national average
 - ◆ Method 1: TNUoS set for each individual node
 - ◆ Method 2: Zoning performed similar to existing methodology
- ◆ Significant change from existing Charging Methodology & Transport Model
- ◆ Extensive IS and administration efforts
- ◆ Zoning difficult (more zones & less stable)
- ◆ Lower price stability

Access Product

- ◆ Customer design variation currently captured in bilateral agreements - Could be codified within a new access product
 - ◆ Reflect reduced access in TNUoS charge e.g. Multiple by 49/52 to allow for 3 weeks less annual access
- ◆ How do you handle in the transport and tariff model?
- ◆ Incentive to consider design variation not proportional to investment that would be saved

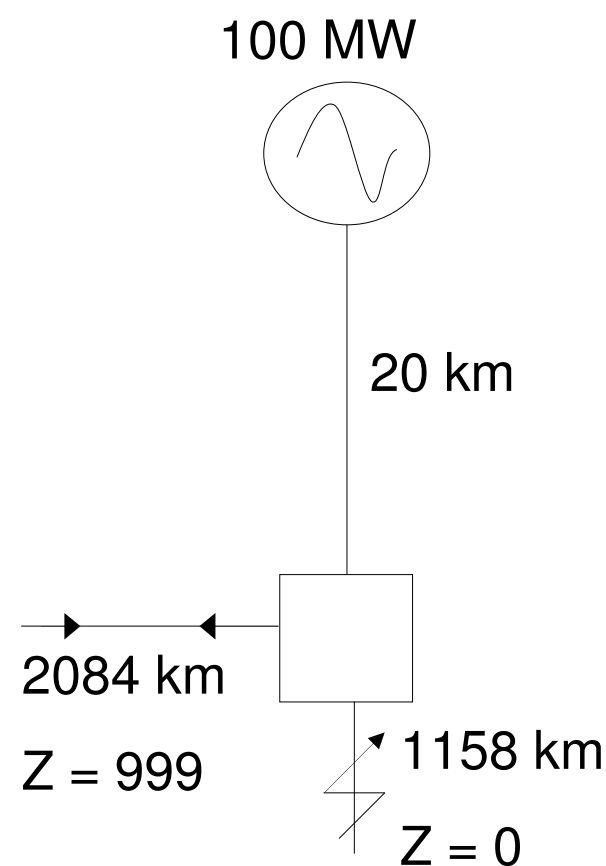
Nodal Security Factors for Design Variations

- ◆ Reflect lower capital costs by discounting with the separately calculated nodal security factor rather than a national average
 - ◆ TNUoS zones calculated using existing methodology
 - ◆ Assumes base substation has a SF of 1.8
 - ◆ Calculate a revised SF for the generation node based upon the design variation
 - ◆ Use revised SF to calculate 'Spur' TNUoS
- ◆ Offshore or island node may generate a separate zone, therefore discounted SF used to define the charge for entire zone



Example 1 – Generation Spur

- ◆ Unadjusted transport zonal weighted marginal km: 1158
- ◆ Nodal SF = $(2084+20)/(1158+20) = 1.786$
- ◆ Nodal TNUoS charge = £20.85
- ◆ Zonal SF = 1.8
- ◆ Discount socialised across ALL generation - £0.00035/ kW
- ◆ Zonal TNUoS charge = £21.11



Example 2 - Island Zonal Security Factor

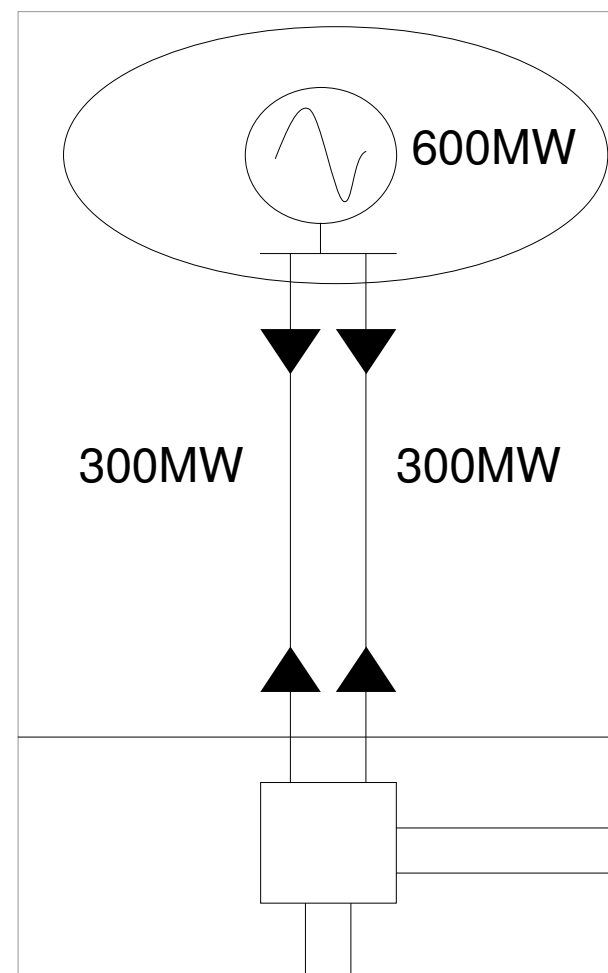
- ◆ Security Factor greatly effected by single cable connection
 - ◆ Orkney: 1.36
 - ◆ Shetland: 1.13
- ◆ Clear signal for single circuit produced without diluting the locational element

	Zonal SF TNUoS Tariff (Existing method) £/ kW
Northern Scotland	20.5 (20.5)
Orkney	34.8 (46.1)
Shetland	69.2 (110.0)

NB. Indicative tariffs do not include any DTI S185 impact

Half Rated Island Cables

- ◆ Current proposal for island connection is two 'half rated' cables
- ◆ Existing methodology gives a Security Factor of 2 for a double cct
 - ◆ Assumes N-d security
- ◆ Incorporates 'capacity' into one off Security Factor calculation justified by:
 - ◆ Materiality
 - ◆ Zero redundancy
- ◆ Circuits added to trip list based on rating



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Option Comparisons

	Cost Reflectivity	Implementation complexity	Price stability
As Is	x	✓	✓
Access Product	✓	x	✓
Connection Boundary – Generation Only Spurs	✓	x	✓
Nodal TNUoS Charging	✓	x	x
Nodal Security Factors for Customer Deviation	✓	✓	✓

The Way Forward

- ◆ Recommending the Nodal Security Factors for design variations option
- ◆ Seeking to release charging consultation mid-July
- ◆ 1st April 07 implementation