

Final Design Variation Consultation Arrangements

TCMF

24 October

nationalgrid

Customer choice design variation

- ◆ Consultation published 6th October
- ◆ Proposed modification to TNUoS charging methodology
- ◆ Circuit discount
 - ◆ Removal of zoning qualification criteria
- ◆ Substation discount
 - ◆ Transmission Owner data average
- ◆ Future rights to discount

Circuit discount – Full reflection

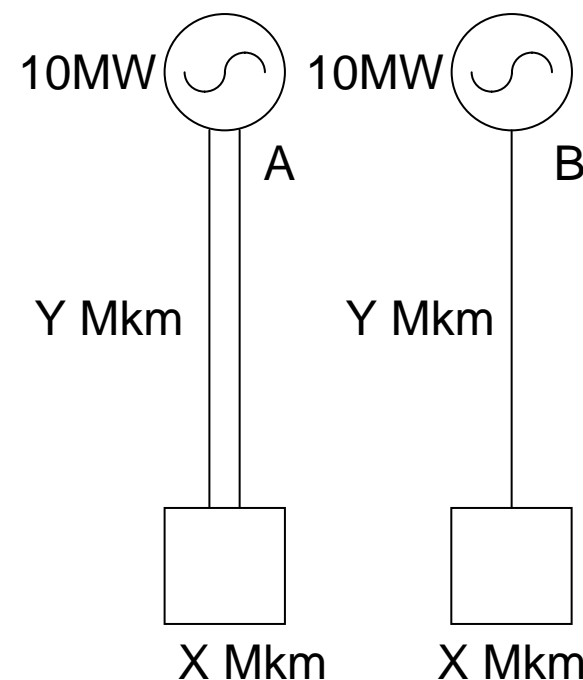
- ◆ Circuit discount can be calculated simply from the length of spur:

Tariff = Security Factor x Marginal km of connecting circuit x Expansion Constant

$$\begin{aligned}\text{Tariff @ gen A} &= \frac{(1.8X + 2Y)}{(X + Y)} * (X + Y) * EC \\ &= (1.8X + 2Y) * EC\end{aligned}$$

$$\begin{aligned}\text{Tariff @ gen B} &= \frac{(1.8X + Y)}{(X + Y)} * (X + Y) * EC \\ &= (1.8X + Y) * EC\end{aligned}$$

$$\begin{aligned}\text{Therefore discount} &= \text{tariff A} - \text{tariff B} \\ &= [(1.8X + 2Y) * EC] - [(1.8X + Y) * EC] \\ &= Y * EC\end{aligned}$$



nationalgrid

Removal of zonal qualification criteria

- ◆ Concerns raised in responses and further analysis showed applying zoning criteria may discriminate against spurs connected at the lower marginal km side of a zone
 - ◆ Simplification of calculation facilitated its application without the requirement to generate a new zone
 - ◆ Discount applied above a de minimis circuit length of 2km
- ◆ Concluded that more cost reflective to apply the distance related 'circuit discount' to all single circuit connected users

Revision of substation discount

- ◆ Several respondents queried original discount and voltage levels
- ◆ Information request with Scottish TUs
- ◆ Average single circuit discount calculated from all TO data
 - ◆ 'Typical' power stations sizes revised
 - ◆ 132kV discount introduced
- ◆ Set at each price control, as part of cost of capacity work
 - ◆ Annually inflated by RPI

	Typical power station size (MW)	Tariff substation discount (£/kW)
33kV connection	50	3.12
132kV connection	110	1.05
400kV connection	600	0.65

Tariff discount application methodology

- ◆ All zonal TNUoS tariffs calculated using existing methodology
- ◆ Circuit and Substation discount applied to final zonal tariff on a nodal basis
 - ◆ As for C13 –Small Generator discount
 - ◆ Nodal discounts published annually in the Statement of Use of System charges

Future rights to discount

- ◆ SQSS describes how customer choice connections only applicable if other users not effected
- ◆ If a second generator requests a double circuit connection where a single circuit exists, this criteria is no longer met and the SQSS compliant connection is constructed
- ◆ Consequently both pay full TNUoS tariff
 - ◆ Not proposing a change
 - ◆ Cost reflective – both benefiting from all assets
 - ◆ Non-discriminatory – same security, same charge
 - ◆ Appropriate for this risk to be taken by party requesting customer choice - rather than socialised to all

Next steps

- ◆ Responses requested by 3rd November
- ◆ Report to Authority shortly after
 - ◆ 28 days to veto/ non-veto
 - ◆ Allows reflection of discount in indicative charges
- ◆ Applicability to offshore connection to be determined as part of OTEG process

Questions/ comments to Tom Ireland
01926 656152 - Thomas.ireland@uk.ngrid.com

nationalgrid

Offshore

TCMF

24 October

Cable expansion factors

- ◆ Marine cable expansion factors to be calculated for DCLF model – No historic data
- ◆ A number of variables:
 - ◆ AC or HVDC
 - ◆ Operating voltage
- ◆ Trade off between stability and cost reflectivity
- ◆ How do we determine average?

Converter Station Costs

- ◆ Converter station assets dedicated to circuit
 - ◆ Cost reflective to include into expansion factor
- ◆ Cost of HVDC converter station/ substation assets substantial
 - ◆ HVDC converter cost: £330 / kW