

# Condition 2 – Incremental Cost of Capacity

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# Agenda

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- ◆ Review how we got here
- ◆ Review issues raised
- ◆ Update on National Grid progress on issues
- ◆ Looking for feedback
- ◆ Next steps

# The condition (1)

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- ◆ identify, review and assess further the technical basis for a range of alternative methods of estimating and reflecting in locational charges the incremental costs of capacity (inc. the method adopted in the approved methodology),
- ◆ consult with interested parties to identify the range of alternative methods to form part of this technical assessment,

# The condition (2)

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- ◆ bring forward modifications for implementation no later than April 2007 if the review identifies potential improvements,
- ◆ publish a progress report in April 2006, and
- ◆ publish a report setting out the conclusions of the review in the event that National Grid concludes there are no further improvements. Baseline analysis assumptions

# Process to date

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- ◆ Process proposed at April 05 TCMF
- ◆ Workshop held May 05
  - ◆ to identify alternative methods for estimating the incremental cost of capacity
- ◆ Workshop held September 05
  - ◆ to provide more transparency in the calculation of incremental cost of capacity
- ◆ National Grid considering the issues raised in the first workshop

# Methods covered (1) -Issued raised

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- ◆ Commoditisation
- ◆ Variable locational signals for demand and generation
- ◆ National Grid consider that whilst these areas are worthy of further investigation, they are not methods for calculating the cost of capacity, but how those cost are applied.
- ◆ National Grid propose to add these to CISG work list.

# Methods covered (2) - Issues raised

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- ◆ Forward looking vs. historic costs / forecasting
- ◆ Transparency
- ◆ Cost reflectivity of expansion constant
- ◆ Thermal ratings
- ◆ Spare capacity
- ◆ Disaggregation of calculation and application into circuit specific, zonal or nodal basis for EC, EF & SF

# Transparency

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- ◆ Based on expected costs
- ◆ calculation uses weighting of different conductors
- ◆ detailed commercial data
- ◆ Reviewing options internally
- ◆ considering benefits of weighting / using detailed data
- ◆ assessing loss of cost reflectiveness if calculated on aggregated data that could be published.
- ◆ Implications for TOs

# Forward looking Vs Historic costs / forecasting

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- ◆ A 'basket of technologies' could be used instead of just OHLs
- ◆ Various uprating techniques could be used instead of just new build
- ◆ A "Transcost" type approach could be employed in the model so as to assess more than one year ahead
- ◆ Does the methodology need to be deterministic or to rely on engineering judgement?

# Basket of technologies (1)

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- ◆ Reviewed the analysis from GB charging
- ◆ Are the values presented are still valid?
- ◆ Re-profiling cheaper in £/MW, but limited and not always available
- ◆ Refurbishment more expensive in £/MW
- ◆ New build represent a good proxy
- ◆ QBs, SVCs
  - ◆ not distance related
  - ◆ mode of operation focused on post fault security

# Basket of technologies (2)

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	Weighting Scenario			
	Cost as a percentage of new build	1	2	3
Re-conductoring	140%	50%	40%	30%
Re-profiling	20%	20%	20%	20%
New build	100%	30%	40%	50%
average		104%	100%	96%

# Transcost approach

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- ◆ Calculates the reinforcement for each year
- ◆ This is then weighted to give a tariff
- ◆ Weighting is towards initial years
- ◆ Initial analysis indicated it would increase the tariff
- ◆ Impact on stability debatable
- ◆ Would reduce predictability
- ◆ More forward looking
- ◆ Not necessarily more cost reflective
  - ◆ assumed future works
  - ◆ existing generators

# Deterministic or to rely on engineering judgement?

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- ◆ Seeking to address through transparency
- ◆ Simplicity
- ◆ Transcost
- ◆ Consider current methodology less judgmental than Transcost

# Cost reflectivity of expansion constant

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- ◆ Reviewing each element
  - ◆ 6.25% v's weighting of 6.25/8.7/8.9
  - ◆ 50 year v's 40 years
  - ◆ GB average for operational costs, currently 1.8
  - ◆ TO km report
    - ◆ how much has been capitalised
      - ◆ IDC
      - ◆ Engineering costs
    - ◆ What has been constructed
  - ◆ review lv upgrade factor

# Thermal Ratings

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- ◆ Methodology uses the winter MVA rating as equivalent MW– are there any alternatives?
- ◆ Use MW for cost of capacity
  - ◆ Cost of incremental capacity increases
  - ◆ Does not reflect investment requirements
- ◆ Calculate MVA
  - ◆ issues surrounding ACLF
  - ◆ charging base increases, tariffs reduce
  - ◆ locational element increased
  - ◆ Charges no longer linked to TEC

# Spare capacity

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- ◆ Should it reinstated?
- ◆ Nature of transmission investment
- ◆ Calculation more subjective than deterministic
- ◆ Way forward:
- ◆ Validate issues
  - ◆ Produce analysis to show that the current methodology accounts for spare capacity
  - ◆ Expand to show the double accounting if spare capacity explicitly modelled in transport model
- ◆ Take account of Authority decision

# Disaggregation

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- ◆ Consider the options for using specific data
- ◆ bespoke / deep charging
- ◆ Increases complexity and reduces transparency, predictability and stability
- ◆ Apply on a nodal basis, zonal basis
- ◆ Need to consider for other other development where the costs are significantly larger than average and security level different e.g.
  - ◆ offshore
  - ◆ island connections
  - ◆ extreme perimeter connection

# Next steps

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- ◆ Further discussion on transparency
  - ◆ can we use aggregated data
- ◆ Need discussion with TOs
- ◆ Validate assumption and data
- ◆ Carry out additional analysis on impact
- ◆ Consider against objectives
- ◆ Seek to produce a draft report in early spring
- ◆ Issue interim report in April 06
- ◆ Take forward and methodology changes in summer 06 for implementation April 07