

Transmission Charging Methodologies Forum



Tuesday 21st May 2013

Introduction & Welcome



Patrick Hynes

Safety Moment



Adelle McGill

Actions from previous TCMF



Patrick Hynes

Actions from previous TCMF

- Investigate if improved versions of the map in the charging statements and that of the MITS are available and circulate to TCMF.
- Raise issue of embedded generation benefit at next DCMF and establish a review workgroup.
- Update application fees two pager with further clarification on BELLA / BEGA issues.
- Include transparency of future tariffs under various TransmiT scenarios in next TCMF.

Ongoing modification proposals



Adelle McGill

Ongoing Modification Proposals

- **CMP201: Generation BSUoS**
 - Code Administrator Consultation published

- **CMP213: Project Transmit TNUoS Developments**
 - Code Administrator Consultation, 10th April 2013–9th May 2013
 - Draft CUSC Modification Report published 14th May 2013

- **CMP215: Removal of interconnector TNUoS references and requirement for BSUoS security cover**
 - Final CUSC Modification report published 3rd April 2013

Ongoing Modification Proposals

- **CMP209/10: Embedded TNUoS payment process**
 - Ofgem consultation closed 9th May 2013. Consultation focused on
 - Costs of implementing modification
 - Impact of proposed changes on competition between generation and supply
 - Relationship with wider review of embedded
 - National Grid have responded
 - Currently awaiting determination from Ofgem

Ongoing Modification Proposals

- **CMP216: Removal of interconnector BSUoS references**
 - Final CUSC Modification report published 3 April 2013.

- **CMP192 Housekeeping Modification**
 - Due to be raised at May CUSC Panel.

Update on Charging for Integrated Offshore



Adam Sims

Background

- National Grid convened informal group last summer
- Informal group avoids CUSC strictures
- Aims of Workgroup:
 - Identify gaps in existing methodology
 - Develop possible solutions
 - Scope and review analysis on solutions
 - Assess against charging objectives
- Produce a report detailing the above and publish on National Grid website

Background

- Group has met eight times
- Three main areas have been identified where current arrangements do not reflect integration:
 - Attribution of flows on offshore networks does not reflect the different standards and drivers for those assets
 - Link between OFTO revenue and offshore tariffs does not reflect sharing between onshore and offshore users
 - Sequential coordination could increase volatility of charges

Different drivers and standards

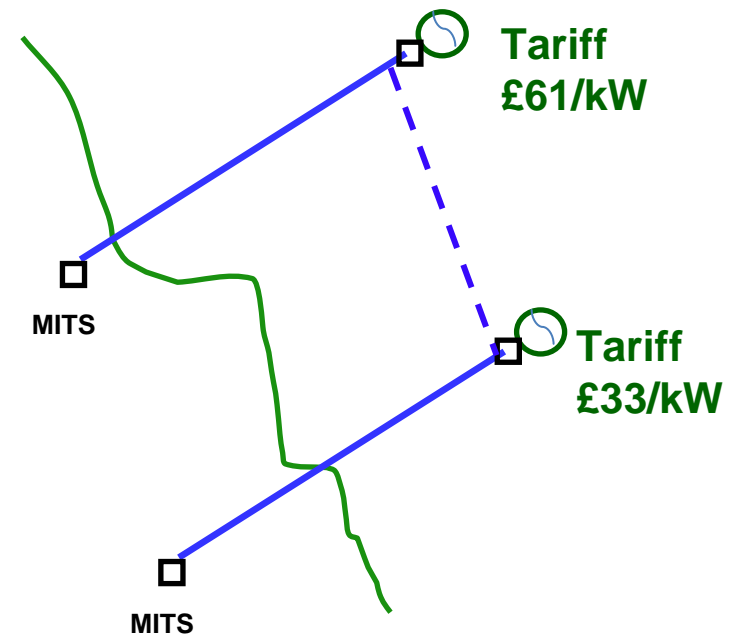
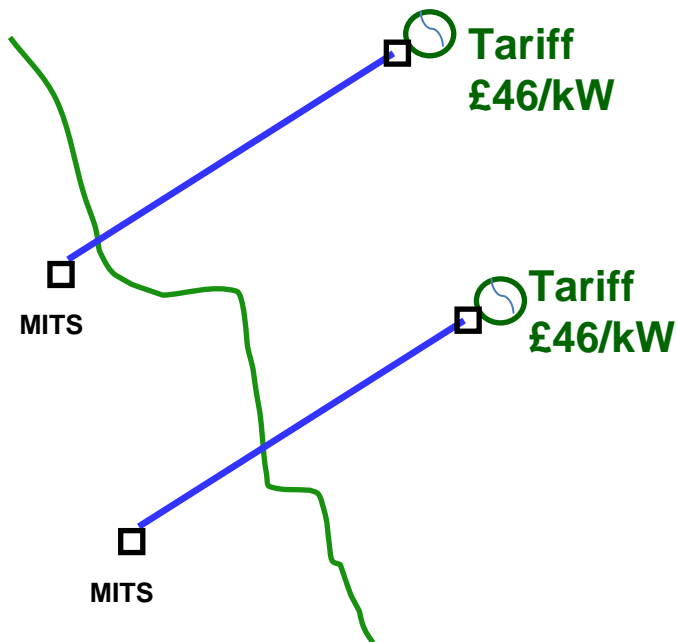
- The main driver for offshore integration is that it provides wider system benefits
- CUSC 14 uses number of circuits at a substation to define MITS (wider system)
- However, offshore networks have fewer circuits than equivalent onshore
- Hurdle for offshore assets being MITS is much higher
- Offshore users would be charged as if they were the sole drivers of an integrated connection solution

Link between OFTO revenue and tariffs

- For offshore assets, the Expansion Factor is based on recovery of the annual revenue of the OFTO
- This is based on the assumption that the OFTO will recover the majority of revenue from the connected generation, typically over 20 years
- For an integrated network, multiple users could be using those assets, and well beyond 20 years

Volatility

- Due to the high asset costs, electrically connecting offshore users can have a significant effect on tariffs



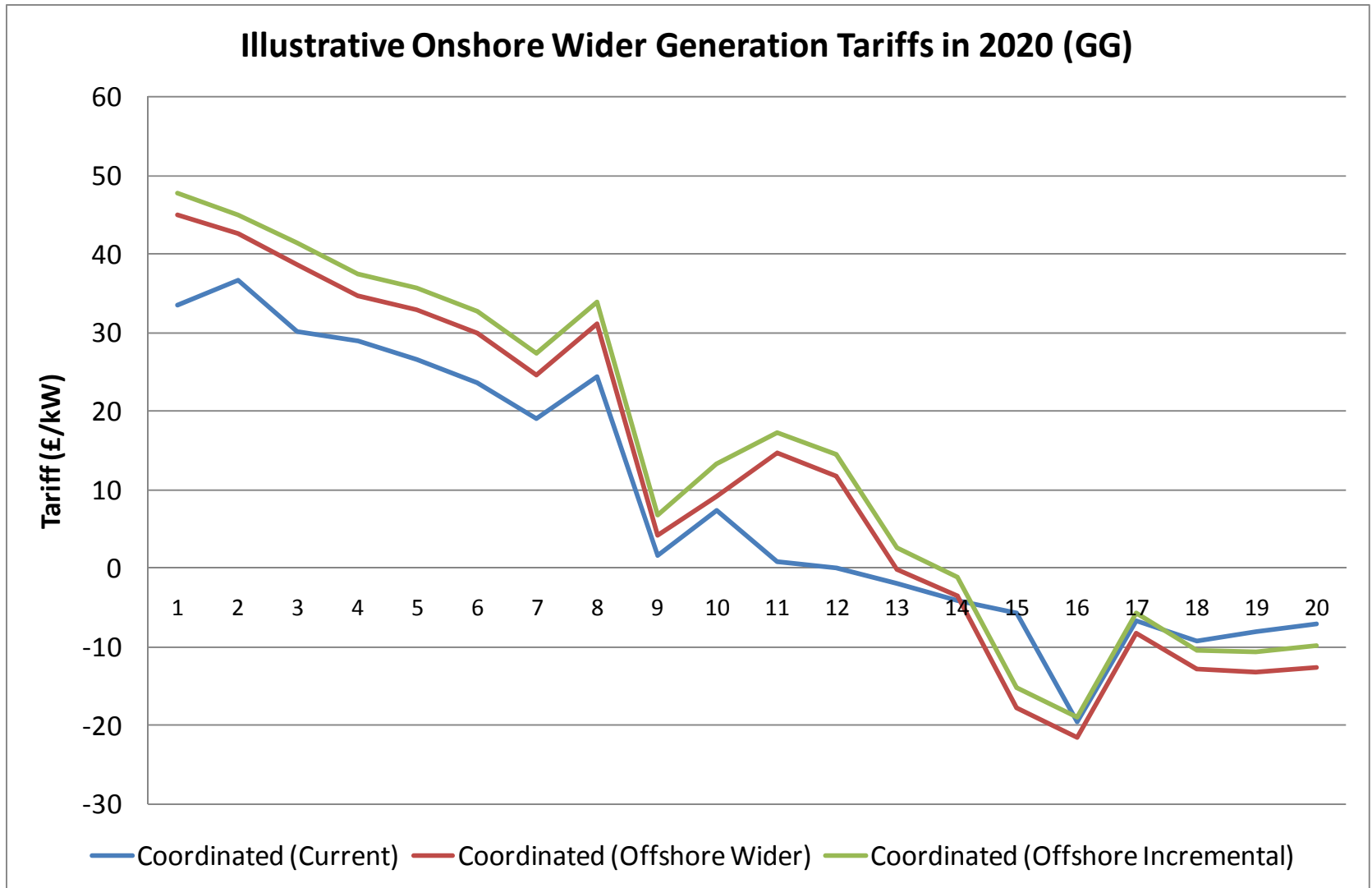
Possible Developments

- Group identified a number of areas of development
- Main two approaches were:
- “Offshore Wider”
 - Lower requirement for MITS substation offshore
 - Specific Locational Security Factor for offshore zones
 - Relax zoning requirement of $\pm£1/\text{kW}$
- “Offshore Incremental”
 - Delink offshore expansion factors from OFTO revenue
 - Use 50 year annuity factor

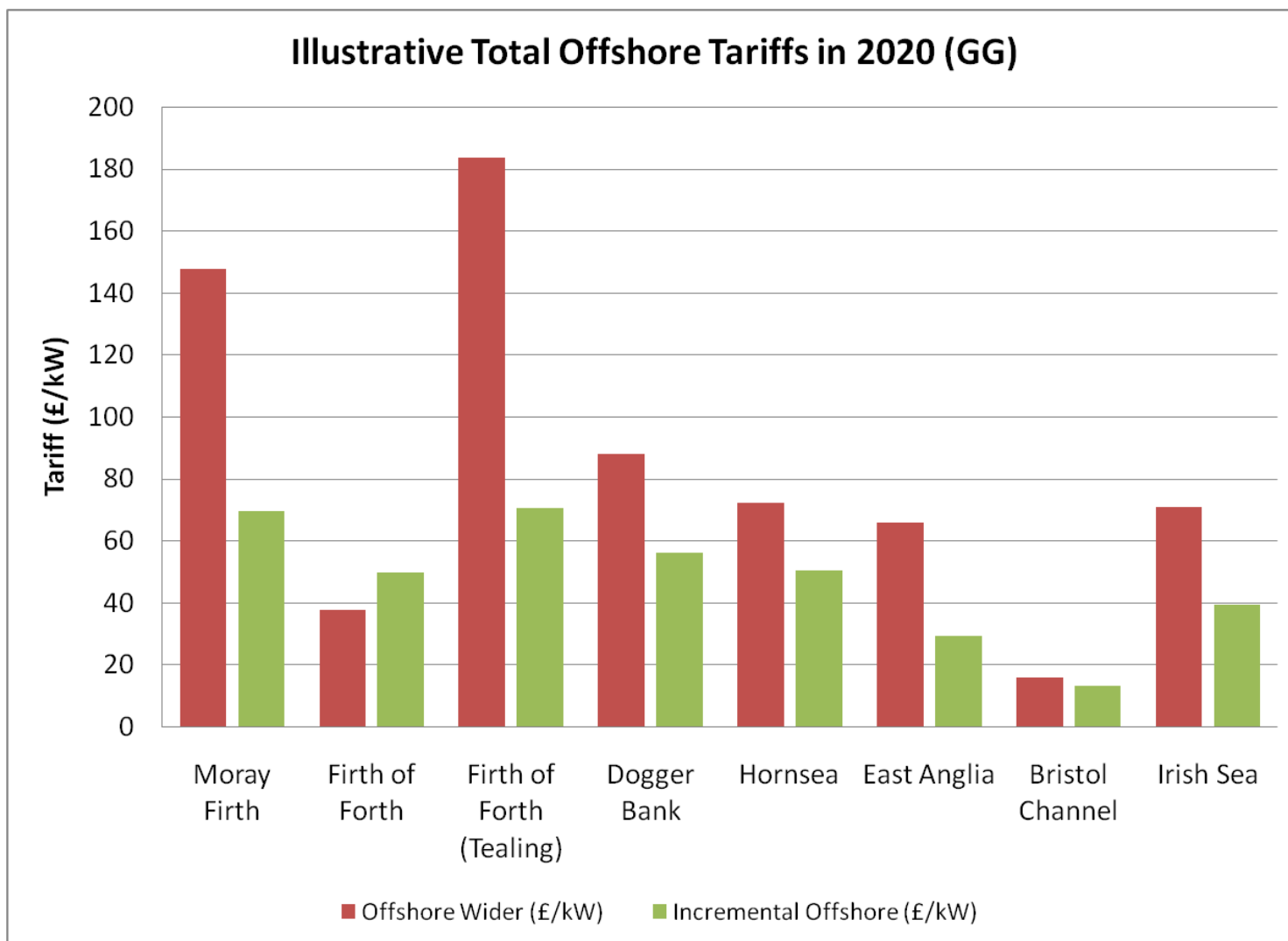
Assessment of developments

- Analysis was undertaken on hypothetical small-scale scenarios, as well as nationally based on the OTNFS* scenarios
- Using the 2020 Gone Green background and the associated integrated offshore investment plan, tariffs were calculated for both approaches
- These were compared with tariffs with no offshore integration, i.e. radial spurs
- Offshore generation included Dogger Bank, Hornsea, East Anglia, Bristol Channel, Irish Sea, Moray Firth, Firth of Forth

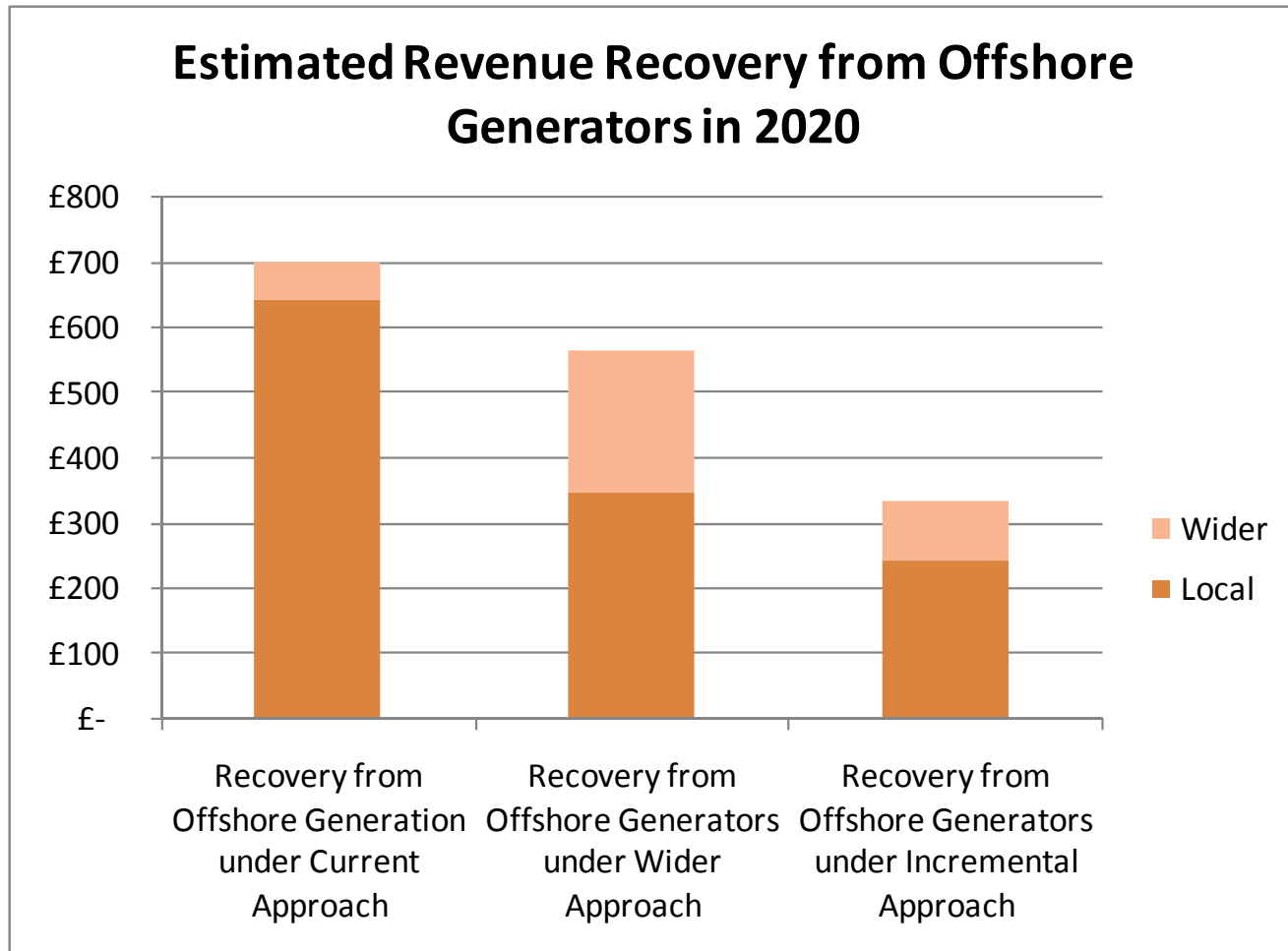
Analysis results for 2020 - Onshore



Analysis results for 2020 - Offshore

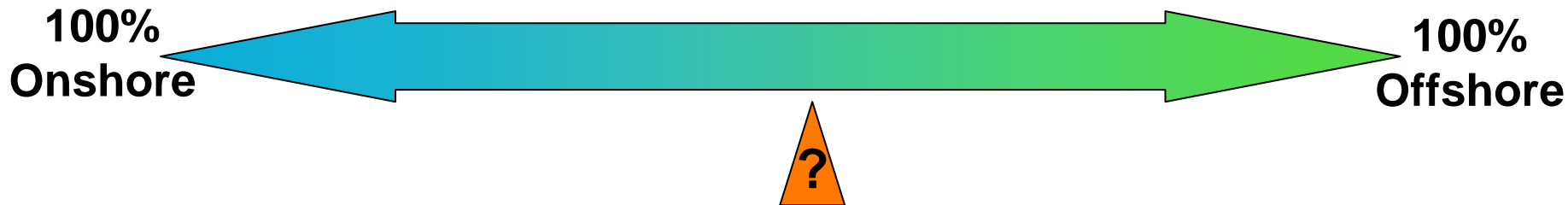


Analysis Results for 2020 – Revenue



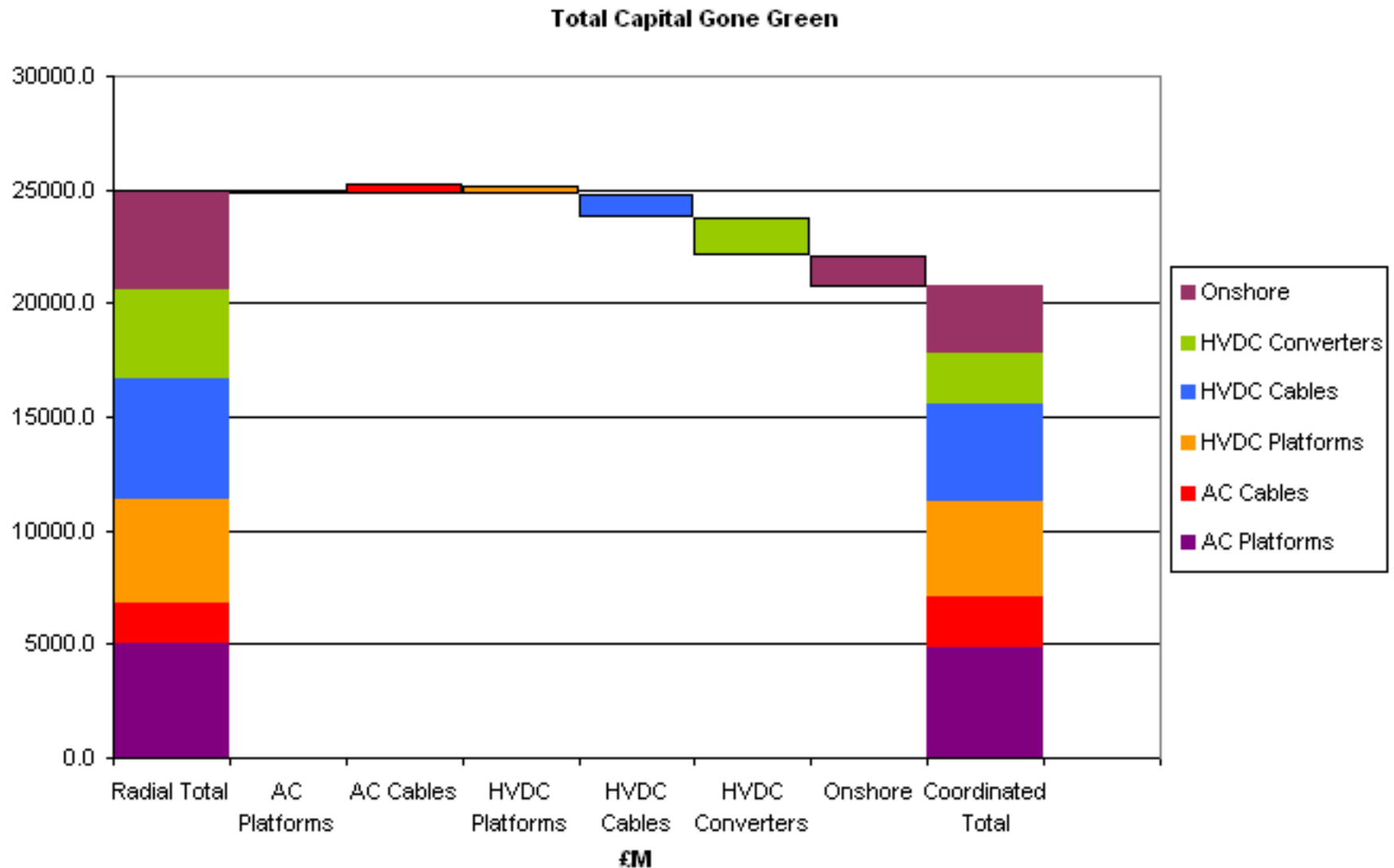
Assessment of cost-reflectivity

- What is the appropriate level of cost-sharing for integrated offshore assets?



- The OTNFS details the onshore and offshore cost savings between integrated and radial approaches, broken down by development
- Assumed that the onshore costs would be included in onshore wider tariffs, and offshore costs would be included in offshore local tariffs

Assessment of cost-reflectivity



Assessment of cost-reflectivity

- This high-level analysis indicated that, on average, the cost saving of integrating was shared 60% offshore, 40% onshore
- The difference could therefore be used as a rough guide to the appropriate level of cost-sharing between onshore and offshore users for integration
- When used to assess the small-scale scenarios, the magnitude when compared to tariffs calculated under the existing methodology was approximately:
 - Offshore Wider: 50% - 70%
 - Offshore Incremental: 50% - 85%

Next Steps

- Report is being finalised, aim is to publish on National Grid website shortly
 - No firm conclusions, but a number of possible avenues of exploration
- Group is meeting in June to discuss next steps, with the ultimate aim of raising a CUSC modification proposal later in the year

Generation embedded benefit Update from workshop



Iain Pielage

CMP213 Revised Impact Assessment Modelling Results

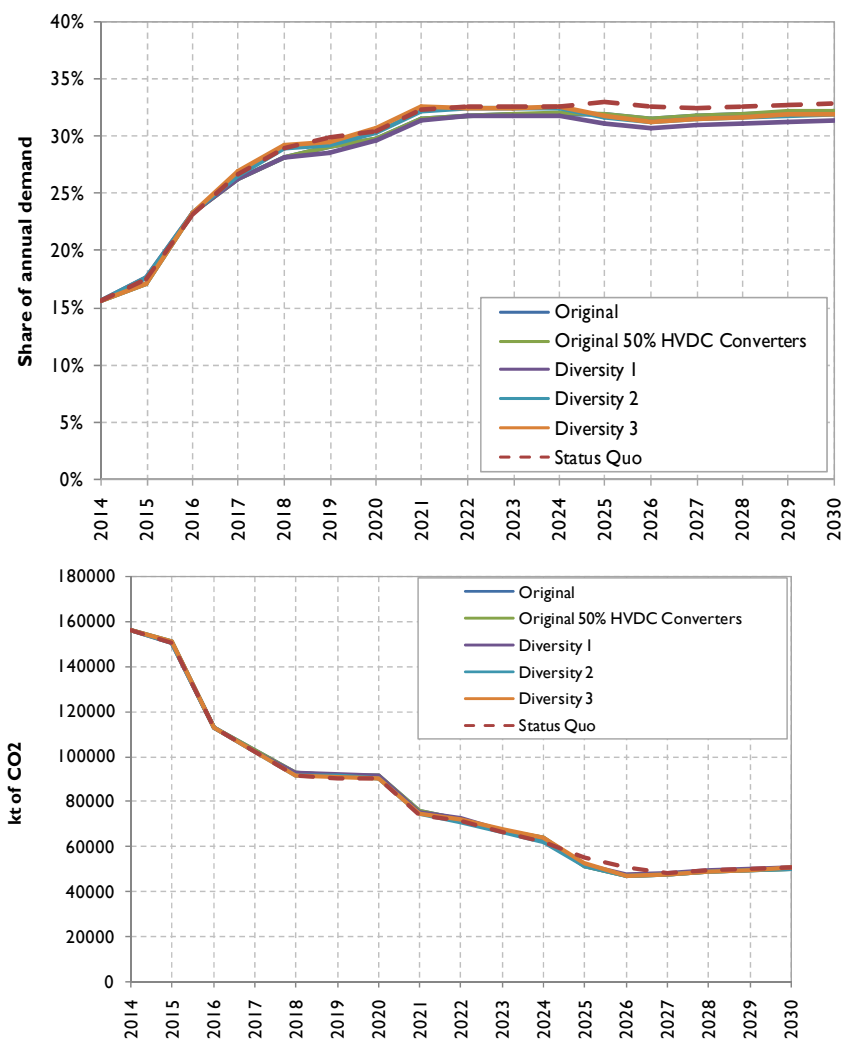


Refinements to model

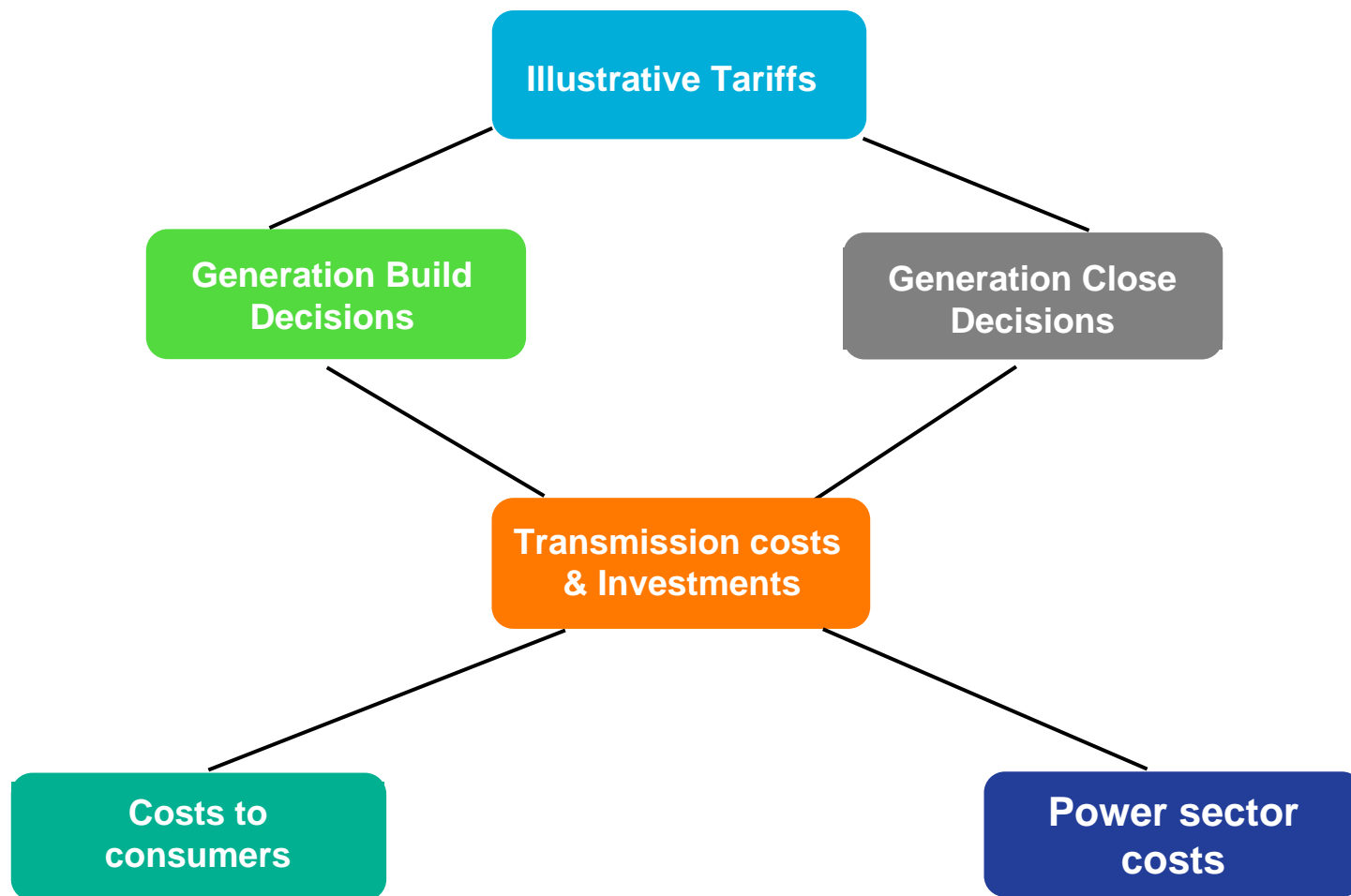
- Initial stage 2 modelling results
 - Completed ahead of workgroup voting
 - Agreed at WG to produce revised results in CA Consultation response
- What's changed;
 - Improved capacity mechanism (EMR modelling)
 - TEC change updates
 - Presentational changes (tariffs start 2014/15)
 - Tariff spike issue resolved

Stage 2 Modelling Reminder

- Stage 2 modelling
 - CFD strike prices altered to meet criteria;
 - EU renewable share 2020 – 30% (+ 2%)
 - Carbon emissions 2030 – 100g/kWhr (+/- 5%)
 - Nuclear capacity 2030 – 14GW
 - Hence renewables / emissions target met in all scenarios
 - Impacts are in cost to consumer

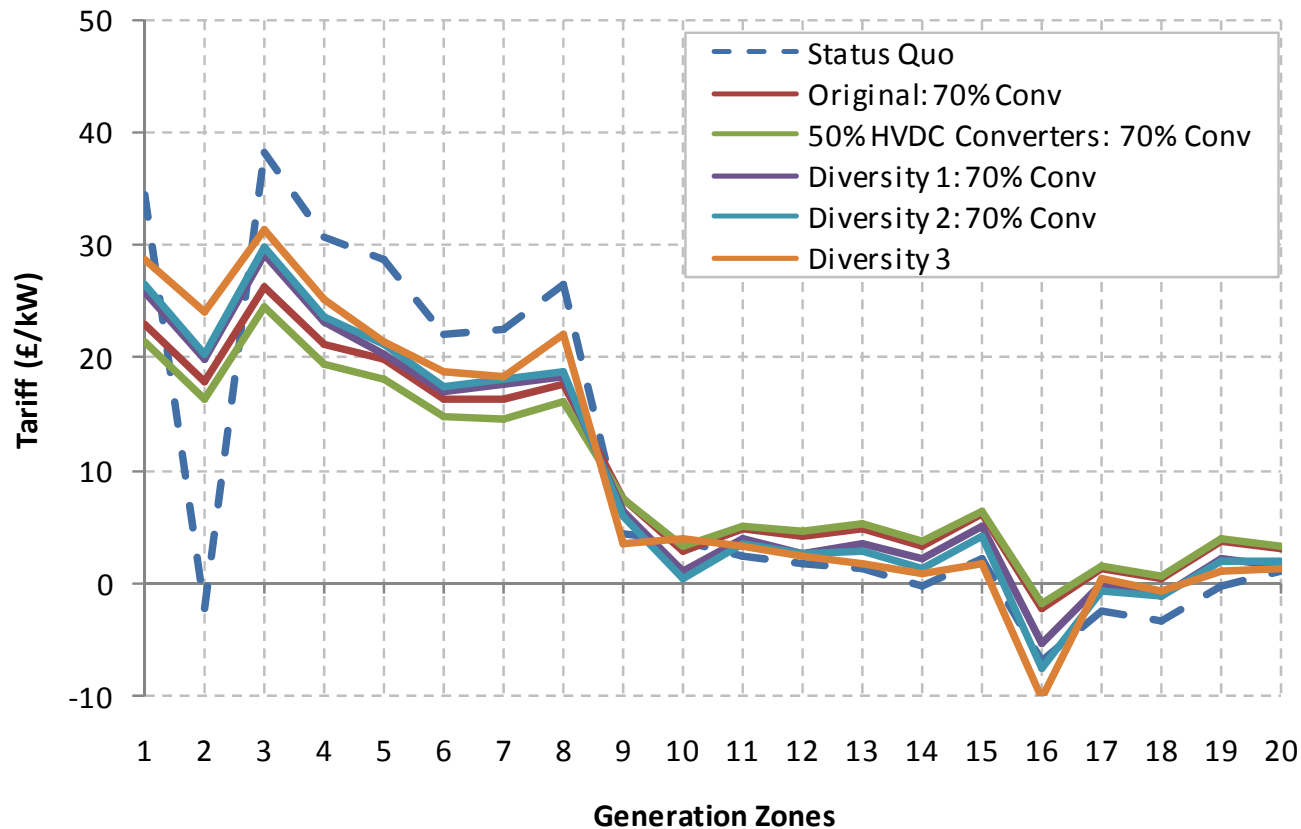


Presentation Outline



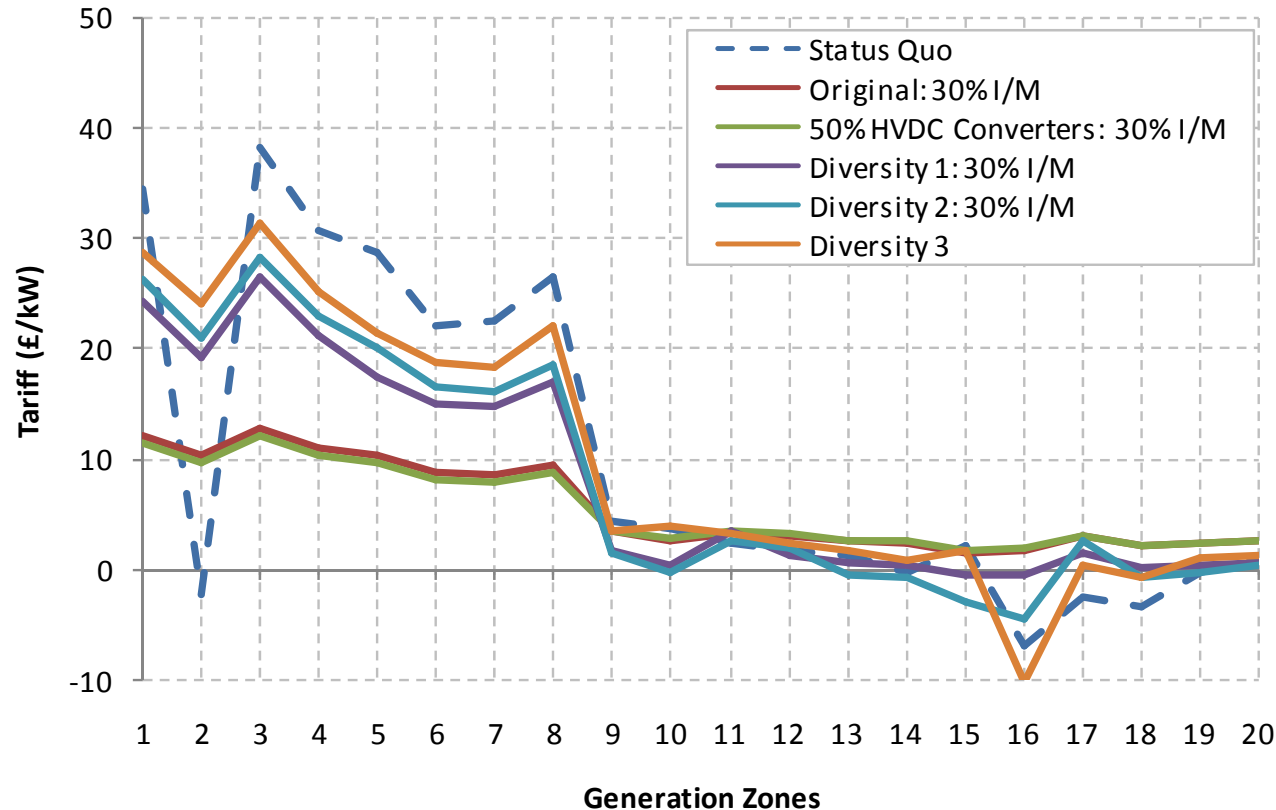
Illustrative Tariffs - Generation

2020: 70% ALF conventional generator



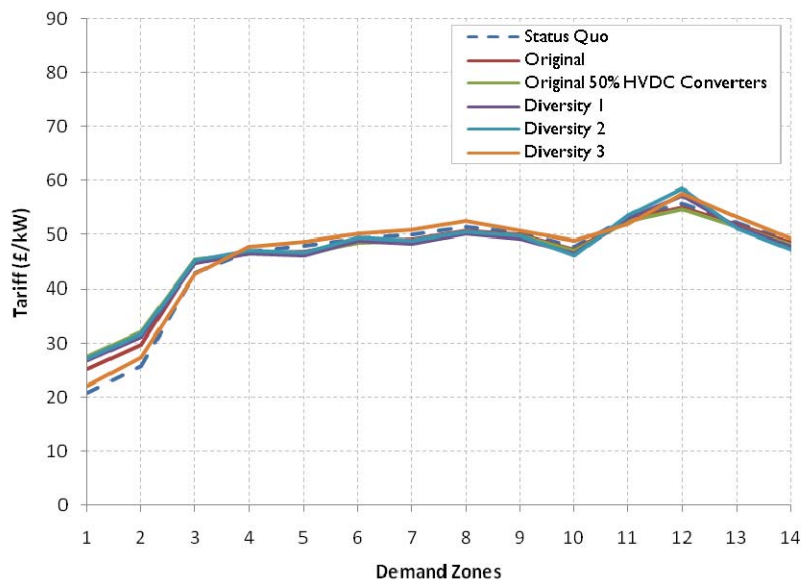
Illustrative Tariffs - Generation

2020: 30% ALF intermittent generator

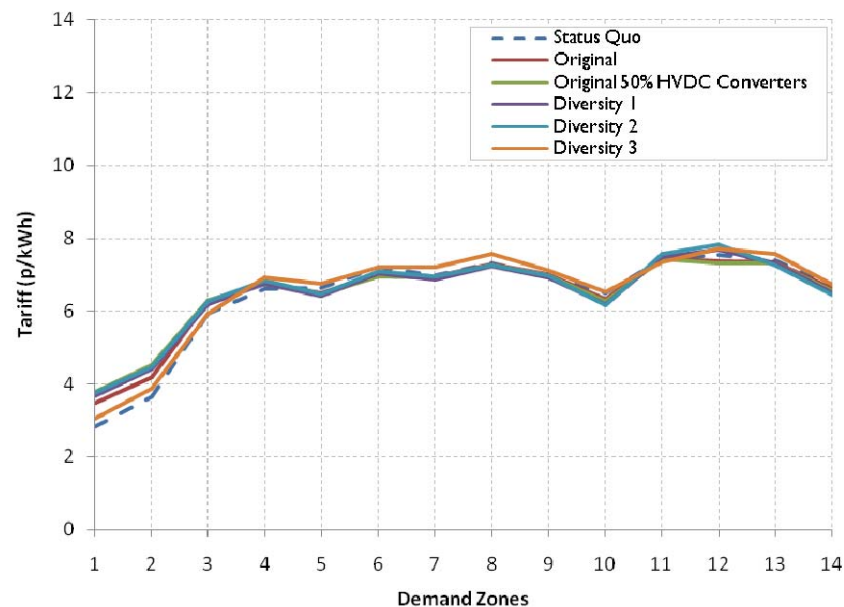


Illustrative Tariffs - Demand

2020: HH Zonal Tariffs



2020: NHH Zonal Tariffs



NB – Results provided in CA Consultation response showed Diversity 1 & 2 with lower tariffs. This was due to differing demand bases in tariff models and does not affect any other results

Generation Build Decisions

Onshore vs Offshore Wind

Original (change from Status Quo)	2015	2020	2025	2030
Onshore wind - N Scotland	77	443	443	601

Original (change from Status Quo)	2015	2020	2025	2030
Offshore wind - Offshore South	-500	-1,170	-1,170	-1,170

Same results
for 50% HVDC

Diversity 1 (change from Status Quo)	2015	2020	2025	2030
Onshore wind - N Scotland	77	284	284	284

Same results for
Diversity 1 & 2

Diversity 1 (change from Status Quo)	2015	2020	2025	2030
Offshore wind - Offshore South	0	-1,170	-1,170	-1,170
Offshore wind - Offshore Scotland	0	0	-905	-905

Diversity 2 (change from Status Quo)	2015	2020	2025	2030
Offshore wind - Offshore South	0	-370	-370	-370
Offshore wind - Offshore Scotland	0	0	-905	-905

Diversity 3 (change from Status Quo)	2015	2020	2025	2030
Offshore wind - Offshore South	-500	0	0	0
Offshore wind - Offshore Scotland	0	0	-905	-905

Other Generation Build Decisions

- Impact of switch to CfDs
- Nuclear set to same capacity at 2030
- CCGT builds similar across all models

Generation Closure Decisions

- Models impact on marginal plant decisions only
- More significant changes due to underlying industry conditions
 - E.g. coal / gas switching point in 2016/17

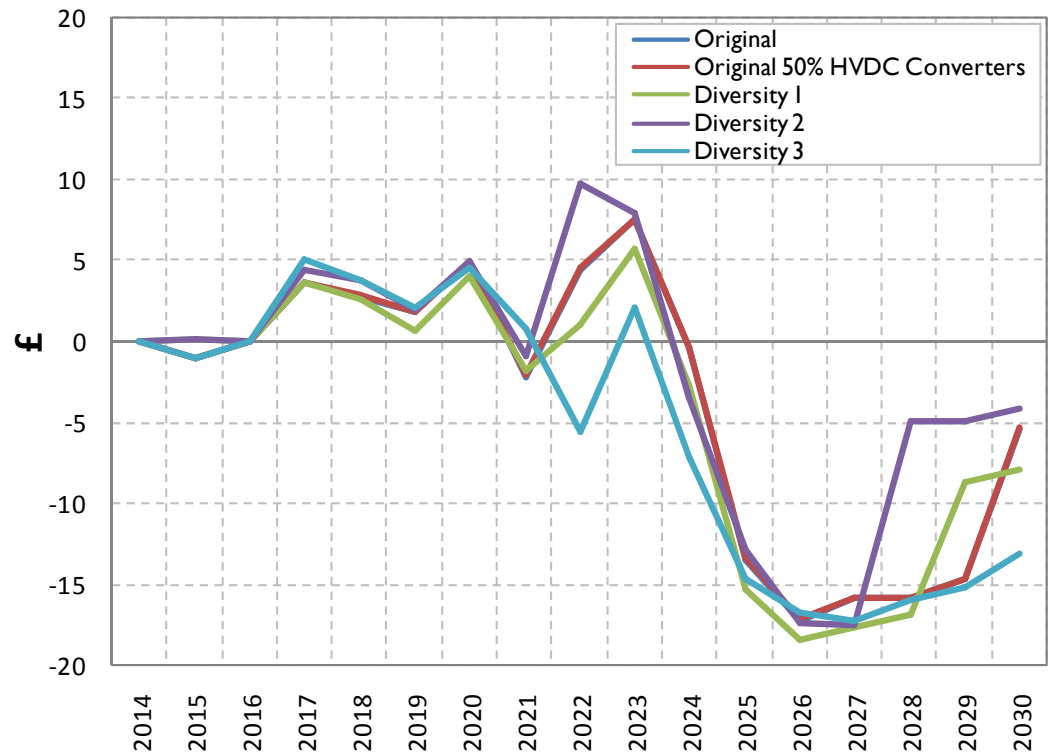
Transmission Costs & Investments

- Similar under all modelled alternatives
 - Constraint costs
 - Transmission losses
 - Transmission Investment

Reinforcement	Capacity (MW)	Boundaries reinforced	Status Quo	Original	Original 50% HVDC Converters	Diversity 1	Diversity 2	Diversity 3
Western HVDC Link	2000	B6, B7a	2016	2016	2016	2016	2016	2016
Western HVDC Link #2	2000	B6, B7a	-	-	-	-	-	-
Eastern HVDC Link	2000	B2, B4, B5, B6, B7a	-	-	-	-	-	-
Eastern HVDC Link #2	2000	B2, B4, B5, B6, B7a	2019	2019	2019	2019	2019	2019
Wylfa-Pembroke 2GW HVDC link	2000	B202, NW2	-	-	-	-	-	-
Caithness - Moray HVDC	600	B1	-	-	-	-	-	-
Humber - Walpole HVDC	2000	B8, B9, B11, B16	-	-	-	-	-	-

Change in average consumer bill – relative to Status Quo

- Broadly similar across alternatives
- Variations small in industry terms
- Trough in later years due to additional CCGT+CCS build



Power Sector Costs – Relative to Status Quo

Modelled alternative	NPV 2011-2030 (£m in real 2012)
Original	1370
Original & 50% HVDC	1448
Diversity 1	1949
Diversity 2	306
Diversity 3	-1167

Larger variation in costs after 2020

CMP192 - Generation User Commitment – Wash-up mod



Tushar Singh
TCMF – 21/05/2013

Background

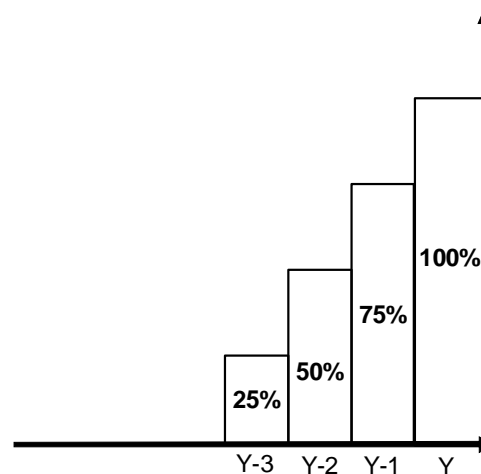
- CMP192 introduced enduring user commitment arrangements for generators into the CUSC
- New arrangements went live from 1st April 2013
- However, implementation of CMP192 highlighted that the legal text requires refining
- Raise a 'tidy-up' modification prior to further development of CUSC Section 15 for offshore and non-generation users

Issues

- Typographical errors
- Numbering inconsistencies
- Redundant text – Transitional arrangements
- More detail needed
- Unintended omissions – non generation users

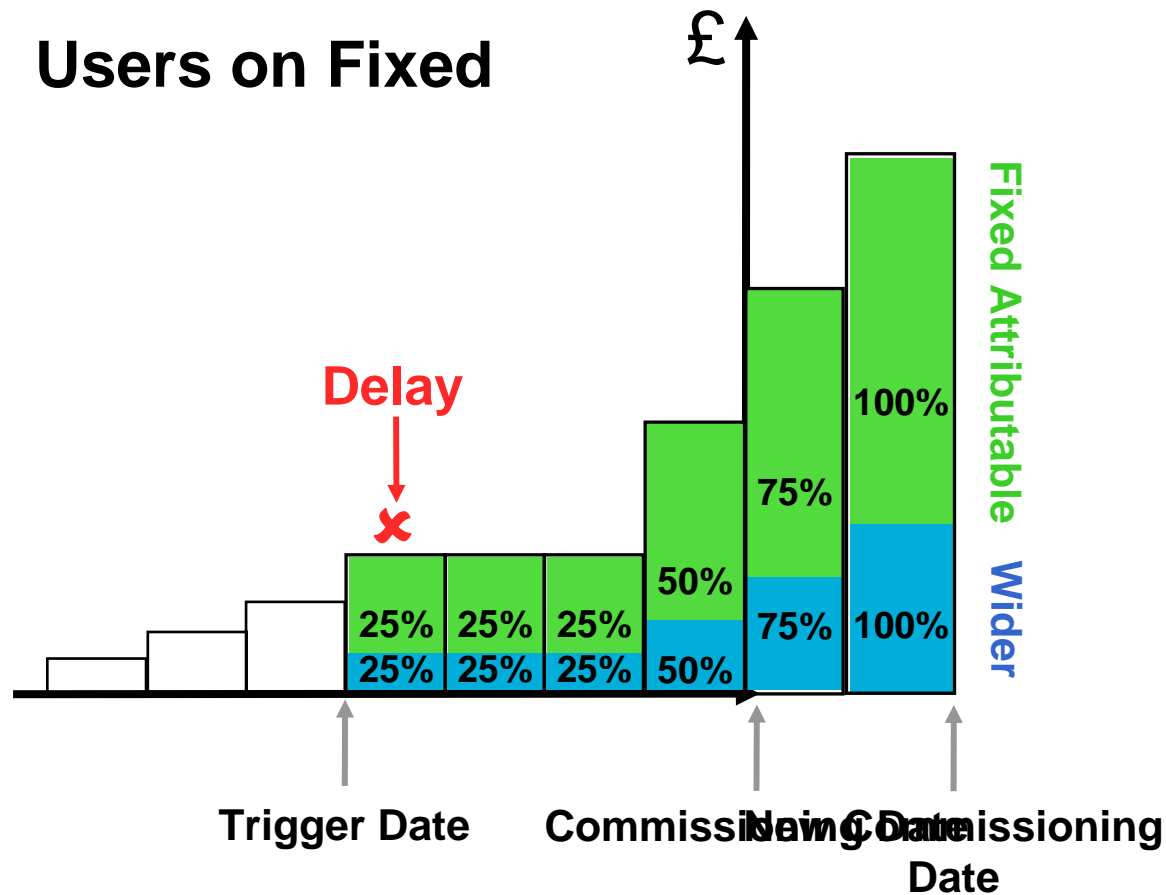
Issues – Cancellation Charge profile

- Cancellation Charge Profile:

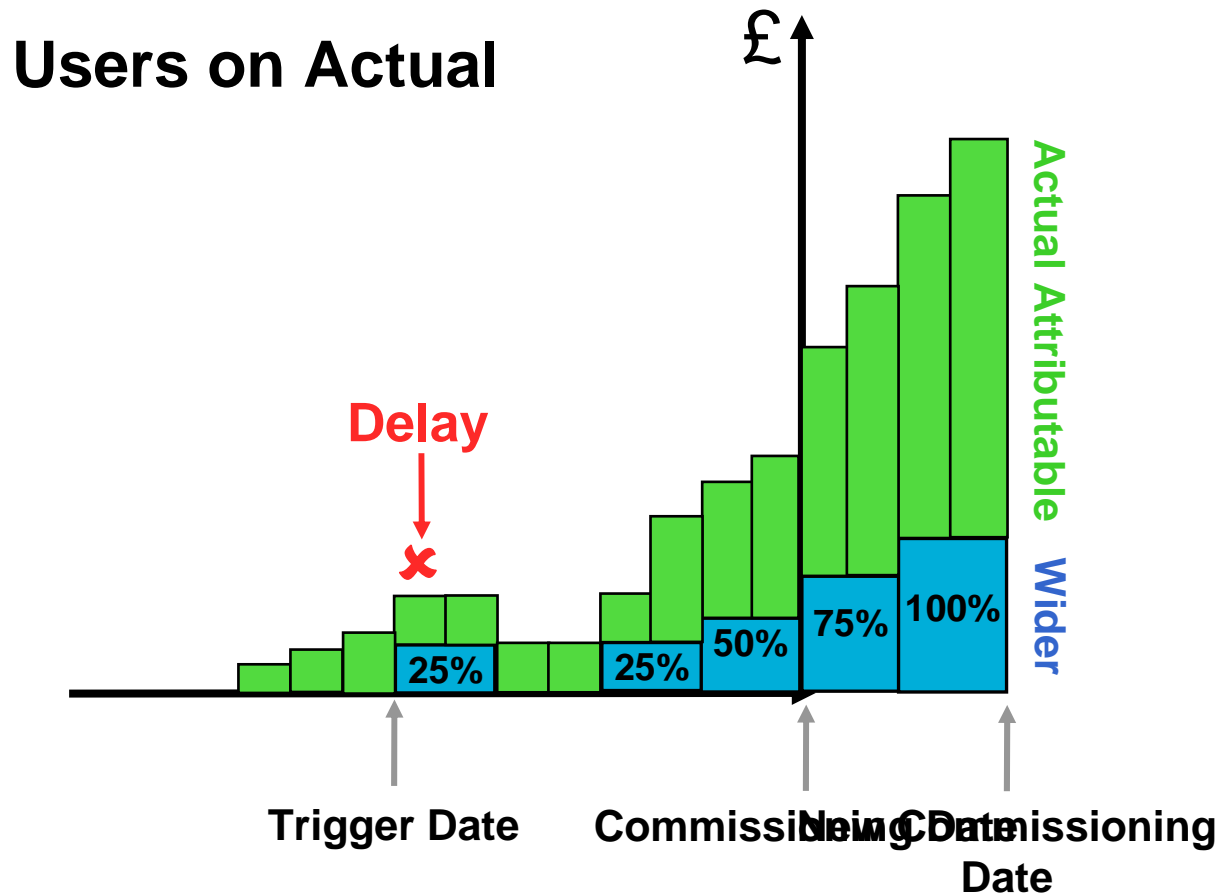


- The Cancellation Charge Profile is meant to remain at the current level if a user delays commissioning
- Unintentionally, the methodology only applies this to users on Fixed liability

Issues – Cancellation Charge profile

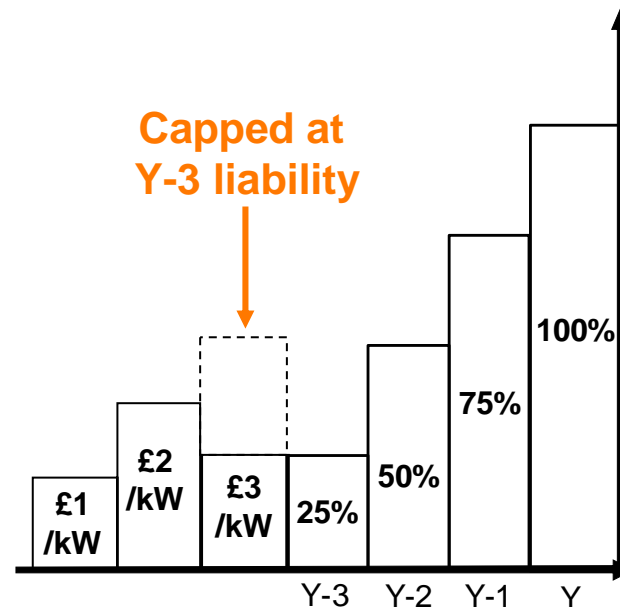


Issues – Cancellation Charge profile



Issues – Pre Trigger Date Liability

- For users on the Fixed approach, the generic pre-Trigger Date liability was intended to be capped at the first Cancellation Charge Profile year (i.e. 25%)
- Unintentionally, the methodology only applies this cap to the year preceding the Trigger Date



Further Steps

- The proposal to be raised in May 2013 CUSC Panel meeting
- Decision on whether a Workgroup is needed
- Final decision by the Authority expected by Winter 2013/14

Possible Future Developments?

- Appropriateness of the calculation for Wider liability
- Introduce tolerance for wind farms to accommodate issues around planning consents
- Allowance for small capacity adjustments within the 4-year profile period
- Possibility of a second Trigger date to clarify when securities reduce to 10%
- Non-generation users

Potential future modification topics



Patrick Hynes

Prioritised potential topic list (from March 13)

Topic	Ranking
G/D split	1
BSUoS stability	2
8 year Price control	3
Integrated offshore	4
TNUoS fixed tariffs	5
Triad	6
Embedded	6
Methodology Housekeeping	8

**Potential addition: User Commitment
(Section 15) Flexibility Developments**

Any Other Business



Future meeting dates

July

10

Wednesday

Close

