

WPD Long Term Methodology work

Nigel Turvey

Introduction

- Presentation in two parts:
 - Feedback on our consultation on Potential Changes to our Use of System Methodology
 - Further information on our work with University of Bath

Responses to Potential changes to our UoS Methodology

- Purpose of consultation was to:
 - Summarise the work that WPD has been doing on reviewing its UoS Methodology
 - Seek views on the type of methodology that is most appropriate to meet our licence obligations
 - highlight key parameters and assumptions in the alternative methods being considered and seek views on the appropriateness of these assumptions, and
 - Seek views on how the methods should be further developed where known issues have yet to be accommodated

Responses to consultation

- There were 11 responses
 - 3 from EHV connected demand customers
 - 5 from Suppliers (all 'large')
 - 3 from Distributors (no IDNOs)
- There were no responses from
 - Generators (although all the Suppliers have generation interests)
 - Trade Associations
 - Academics/Consultants
 - Energywatch

Overview of responses to consultation

- A supplier did not agree with Ofgem's view that models aligned with forward looking long run incremental costs was a valid basis for a fundamental review of methodology and believes that it has not been demonstrated that there are any issues with the existing approach
- *Initial WPD response: the need for a review has been accepted by all Distributors*
- Another supplier believed that the result of consultations by distributors will be difficult to rely on as they are less likely to get responses than those from Ofgem
- *Initial WPD response: we agree this is an issue, however we understand that Ofgem would want to be assured that users had been adequately consulted and would undertake their own consultation if necessary*

Overview of responses to consultation

- Concern from a large customer, a supplier and a distributor that WPD are progressing too fast and that we should follow the other distributors, another suppliers was concerned that if distributors implement different solutions than implementation costs would be higher. 2 suppliers were also concerned that billing system changes will be needed
- *Initial WPD response: we have spent 11 months on our cost attribution work so far compared to the 3 months allocated in the COG work plan. Whilst agreeing that there are benefits in a common methodology, methodologies are not a joint licence requirement like the DCode or DCUSC. We do not believe that the methods presented will require changes to billing systems or processes*

Overview of responses to consultation

- 2 large customers and a supplier did not agree that the same method need be used for demand and generation, whilst another 2 suppliers believed that consistency was needed to demonstrate non-discrimination/cost reflectivity
- *Initial WPD response: we are uncomfortable with demonstrating non-discrimination without a consistent methodology*

Overview of responses to consultation

- 2 large customers and 2 suppliers did not believe that they could comment on principles without first seeing the resulting prices
- *Initial WPD response: we understand the problem faced by respondents, but felt that further work was required before publishing example prices if they were to be useful*
- However, these same large customers and one of the same suppliers concluded that neither the ICRP or LRIC approach better met the licence objectives generally on the grounds of the methods being complex and dependent on assumptions which would be difficult to validate. This supplier also believes that an allocation of costs is more cost reflective than a model of future investment. Another supplier did believe that both the ICRP and LRIC methods could better meet the objectives at EHV but was concerned about HV and LV networks.
- *Initial WPD response: we continue to believe that these methods can better meet our licence objectives, but accept that we will need to justify this further if these methods are to be implemented*

Overview of responses to consultation

- 2 distributors and 2 suppliers highlighted the need for transparency of data/background to assumptions and concern over sensitivity of model to assumptions
- *Initial WPD response: As highlighted in a previous presentation to ISG, the key assumptions in the LRIC model are load growth, security factor and reinforcement cost. All forward looking models and business plans have to be based on best estimates of these parameters.*
- 2 large customers expressed concern that a forward looking model could be cost reflective when 30% of investment is associated with reinforcement
- *Initial WPD response: we believe this is part of the revenue reconciliation issue that we accept needs further work*

Overview of responses to consultation

- A large customer was also concerned that forward looking models ignore historic contributions and that as the ICRP/LRIC model only appears to be practical at EHV it should not be used. 2 suppliers and a distributor, however, felt that locational prices have merit but are likely to be impractical at lower voltages
- *Initial WPD response: we understand the concern regarding contributions. Unfortunately, an historic contribution has no impact on future investment decisions. We accept that further work is needed on how to treat lower voltage networks*
- 2 suppliers and a distributor expressed concern that scaling to required revenue would mask cost reflectivity – based on a belief that model would produce charges representing 10% of required revenue
- *Initial WPD response: we agree that reconciliation to required revenue is a significant issue for all methodologies, however dispute that these methodologies will always provide charges covering only a small percentage of required revenue*

Overview of responses to consultation

- A supplier stated that adoption of a model similar to that used by National Grid would be wrong as the National Grid method has problems
- *Initial WPD response: we do not intend commenting the merits of National Grid's methodology applied to their network*
- A supplier and a distributor were concerned that time of day issues were not addressed and that the method did not consider all future cost and possibility of constraining generation
- *Initial WPD response: we agree that further work is required on time of day and seasonal issues. Whilst the LRIC method does not consider constraining generation, it would give pricing information to inform when it would be economic to constrain generation rather than reinforce*

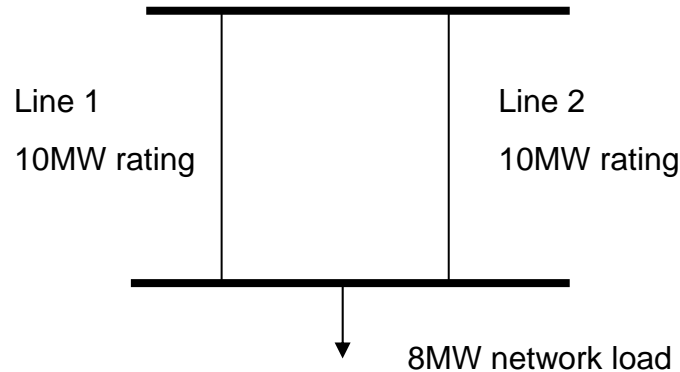
Direction given by Consultation

- More work to do particularly on:
 - Definition of data being used
 - Basis of necessary assumptions
 - Lower voltage networks
 - Time of day/seasonal issues
 - Reconciliation with allowed revenue
 - Presenting case that a revised method better meets our Licence objectives

Continuing work with Bath University

- Our model is different in formulation to that used by Bath in the Ofgem work
- Following example illustrates our method, results and sensitivities

LRIC Simple example

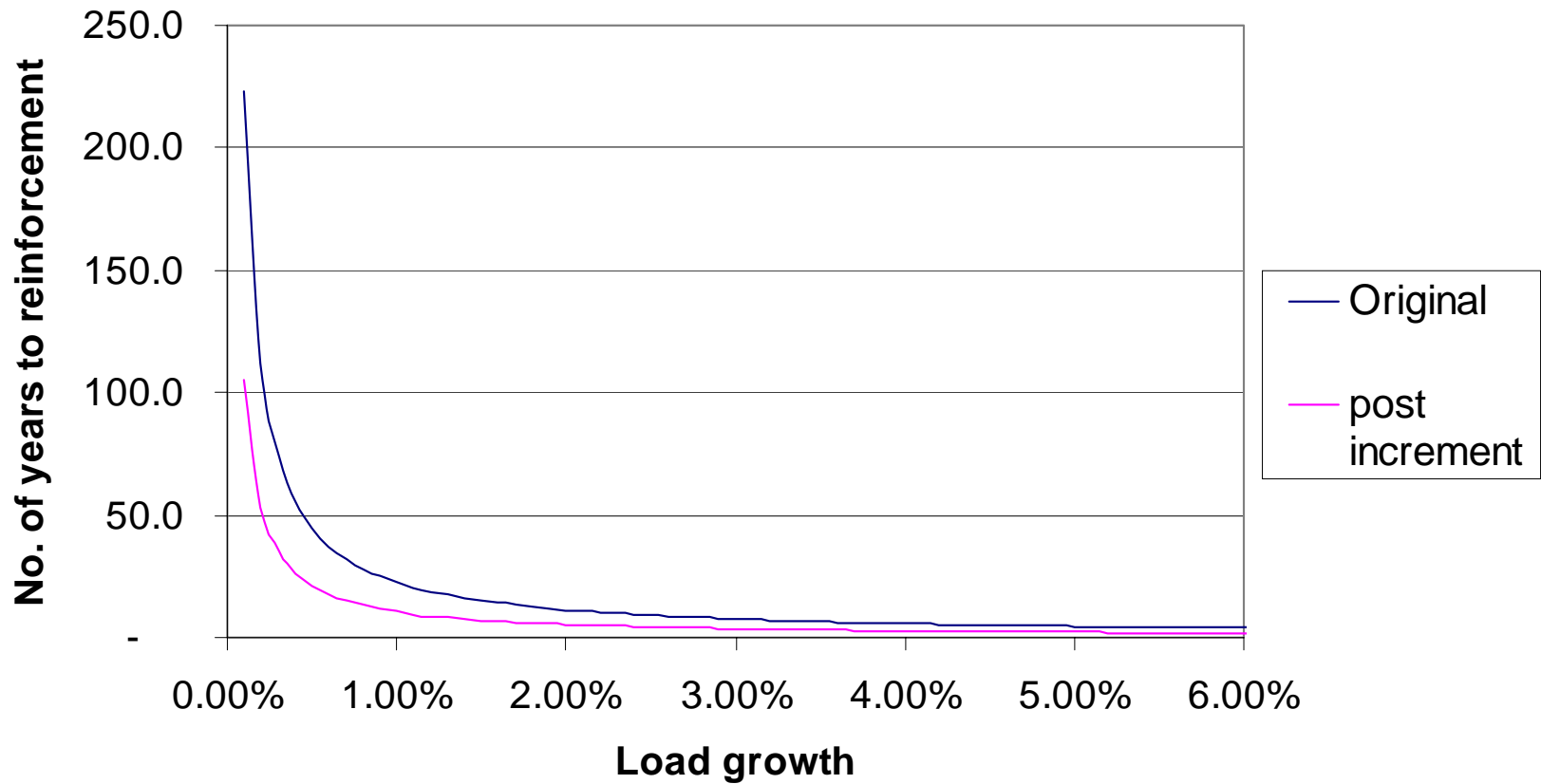


- Assume each circuit has an MEA value of £200,000
- Assumption that reinforcement will be needed when load reaches 10MW and it will cost £200,000
- Cost of capital = 6.9%

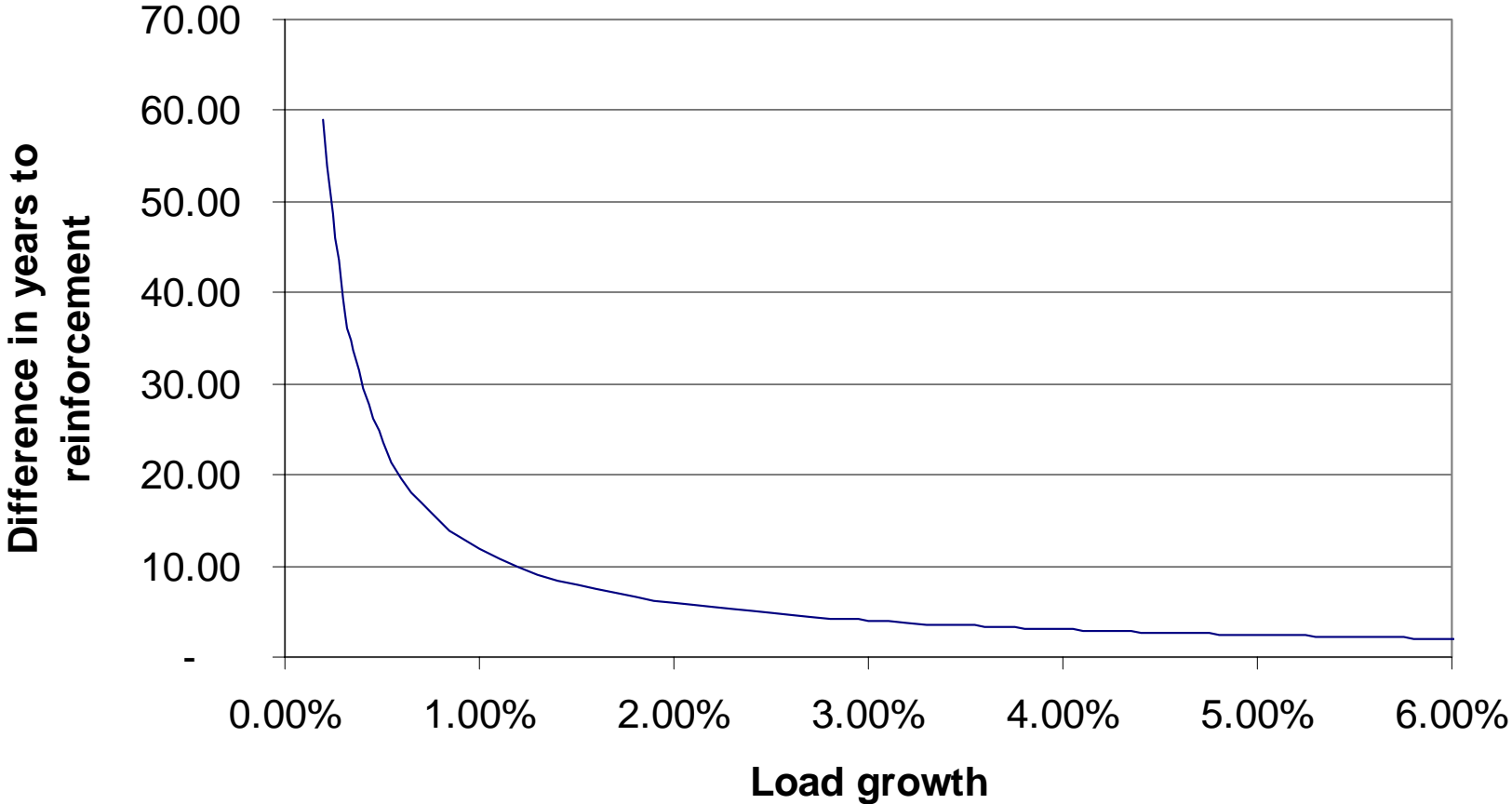
Simple example

- If network load grows at 0.5% per annum it take 8MW just under 45 year to grow to 10MW
- The Present Value of £200,000 being spent in 45 years is £9,932
- Adding a 1MW increment to the network load brings forward the reinforcement to just under 22 years and hence increases the present value to £46,081
- An annual charge can be set by taking an annuity of the difference (the brought forward cost) between these two present values – in this case equal to £2,581/MW
- Following graphs take this in stages showing the effect of varying growth rates

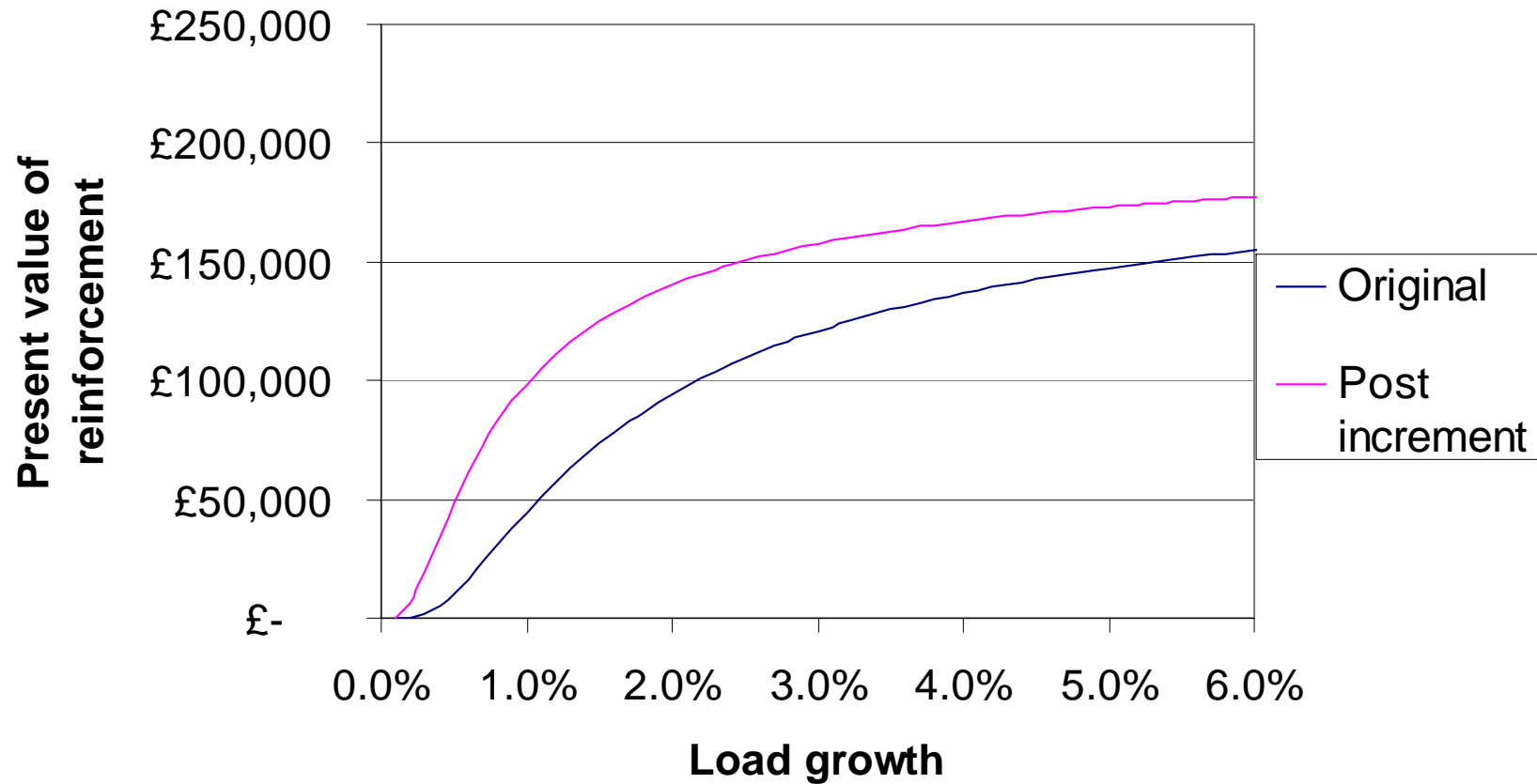
Circuit starting utilisation = 40%



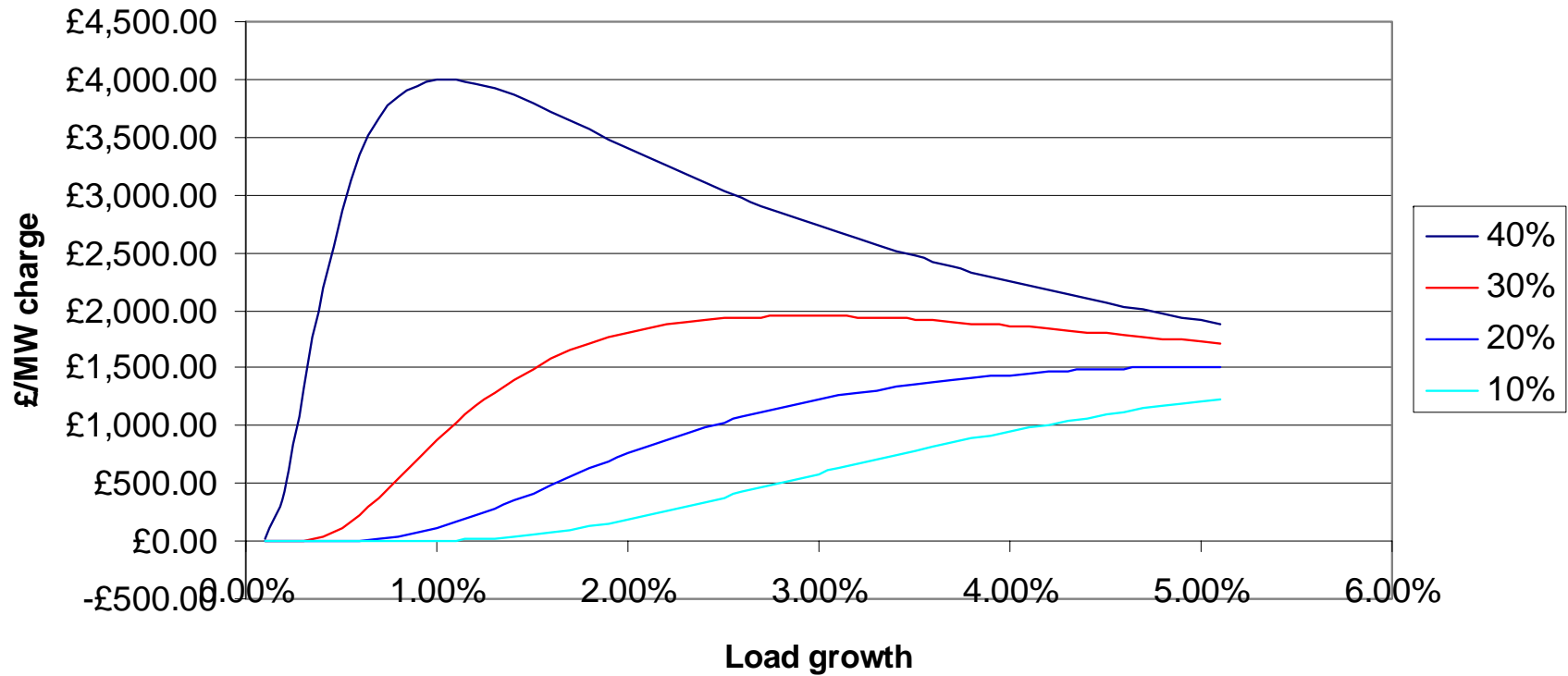
Circuit starting utilisation - 40%



Circuit starting utilisation = 40%



Charges at varying load growths and starting Utilisations



Revenue reconciliation

- MEA value of assets is £400,000
- A 40 year annuity charge at 6.9% would represent a required annual income of £29,680
- In example above (£2,581/MW) there would be an income of £20,648
- If the example had been at 1% load growth then income would have been £32,000 against the £29,680 required

Application to actual network

- Model has been applied to entire EHV network in WPD S Wales
- A 1.6% growth rate was used and resulted in generated revenue nearly twice that required, however
- Care is needed with security factors (e.g. locations with 3 or 4 infeeds compared to an assumption of 2) due to rapid price increase as starting utilisation rises – further work currently underway to rectify

Continuing work plan

- Reworking of security factors
- Lower voltage networks
- Demands/generation infeeds to be used in base model
- Need for 'minimum' demand period to be considered

Timetable

- Some of the features of the LRIC method have taken longer to understand than expected
- Whilst getting more challenging, an April 2007 implementation is still our target.

Any Questions

WPD Long Term Methodology work

Nigel Turvey