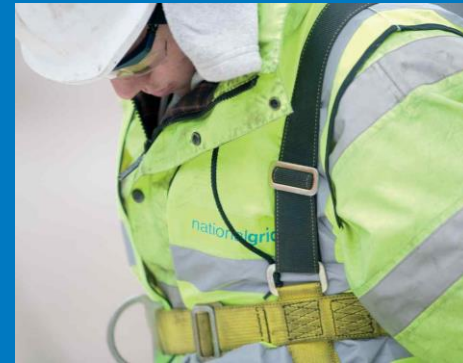


Gas Charging Review



NTSCMF – 3 June 2016

Please note: this slide pack will be updated on 31 May to include some additional material to meet the agenda proposed for discussion on 3 June. Please check on 31 May for these updates.

Agenda

Area	Detail
Terms of Reference and work plan	<ul style="list-style-type: none"> Any proposed changes
Alternative Reference Price Methodologies (RPMs)	<ul style="list-style-type: none"> Reminder of discussion at May NTSCMF Overview of alternative methodologies proposed in previous EU TAR NC drafting Discussion on developing RPMs
Modelling CWD and LRMC with flow data	<ul style="list-style-type: none"> Additional analysis to build on CWD/LRMC analysis Incorporating Commodity comparisons Discussion on areas for development
EU Tariffs Code – Current Outlook	<ul style="list-style-type: none"> Key updates relevant to Gas Charging Review Areas under discussion
Dual Regime discussion	<ul style="list-style-type: none"> Updates / discussion on areas where dual regime may be permitted Detail on certain topics (e.g. interruptible)
Relevant Objectives Discussions (GB and EU)	<ul style="list-style-type: none"> Reference Price Methodologies Dual Regime scenarios/alternative products
Next Steps	<ul style="list-style-type: none"> Future NTSCMF workshop planning

Gas Charging Review



Alternative Reference Price Methodologies (RPMs)

Discussion:

Alternative Reference Price Methodologies

- At May NTSCMF we discussed some of the alternative Reference Price Methodologies (RPMs)
- We also discussed Ofgem's GTCR policy and the methodology that was used as the underlying RPM
 - Used Virtual Point Variant A
- Here we present a reminder of the May NTSCMF Material summarising those Reference Price Methodologies with a view to:
 - Continue the discussion for RPMs
 - Gather views on progression

Discussion: Reminder of some alternative Reference Price Methodologies

Reference Price Methodology	Methodology and Application*	Comments
Postage Stamp	<ul style="list-style-type: none"> The postage stamp methodology foresees the same reference price at all Entry and Exit Points. The reference price is given by the target revenue for entry (respectively exit) divided by the total booked capacity (or a relevant proxy) 	<ul style="list-style-type: none"> Designed for a simple network May suit a relatively simple unmeshed network Does not provide investment signals
Asset Allocation	<ul style="list-style-type: none"> Considers users of the assets on the network and attributes proportion of costs accordingly (domestic, customers abroad – transitory, sub groups of transit) Where recovery of allowed revenue requires reconciliation to or from customers in other markets. 	<ul style="list-style-type: none"> May be more suitable to more transitory networks
Capacity Weighted Distance (CWD)	<ul style="list-style-type: none"> This methodology assumes that the share of the allowed revenue to be collected from each point should be proportionate to its contribution to the cost of the capacity of the system. This share of the allowed revenue, corresponding to the tariff, is based on a (uniform) unit price per capacity per distance. 	<ul style="list-style-type: none"> May suit a more usage based model rather than investment Does not use cost components in the calculation of prices, linked to revenue, capacity and distance.
Virtual Point (VP) (includes variant A and B)	<ul style="list-style-type: none"> The principle of the virtual point based approach is to determine entry and exit tariffs for each point to which the tariff applies by weighting capacity at these points according to their distance to a virtual point. The “virtual point” (theoretical location) can be either adjusted for mathematically (Variant A) or determined geographically (Variant B). 	<ul style="list-style-type: none"> VP(A) relates to the LRMC model Works for a highly meshed, complex network May suit a more investment focused model due to marginal pricing

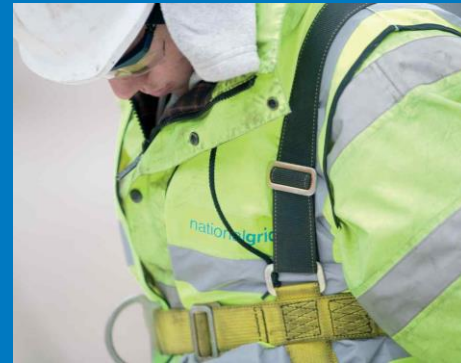
*Taken from EU Tariffs Code earlier drafting

Discussion:

Alternative Reference Price Methodologies

- For information, Virtual Point Variant A is equivalent to the current Long Run Marginal Cost pricing model (LRMC)
- At May NTSCMF we discussed some of the alternative Reference Price methodologies and posed some questions regarding alternative RPMs:
 - Should focus be on LRMC and CWD to develop further?
 - Which is most suited to GB and links the commercial regime and physical most appropriately into the future?
- Discussion of views (related to NTSCMF Action 0502)

Gas Charging Review



Continued development of Analysis building on CWD / LRMC seen so far

Analysis – Overview (1/2)

- Following on from May NTSCMF questions were raised about how the capacity rates shown compared to current Commodity rates
- Under EU Tariffs Code with more of a potential movement to Capacity over Commodity for aspects of GB regime, comparisons to current commodity may be helpful:
 - For those who participate more in the short term who may only currently have exposure to Commodity charges to assess potential impacts
 - To simply show how current Commodity rates compare to some of the initial calculations of Capacity prices under some alternative RPMs

Analysis – Overview (2/2)

- In order put this into context here we present:
 - A summary of the analysis presented in May
 - A history of Commodity charges and how they compare to those capacity rates seen so far under Capacity Weighted Distance (CWD) and LRMC analysis
 - A summary of the analysis and key points

Gas Charging Review



Summary of May NTSCMF Analysis

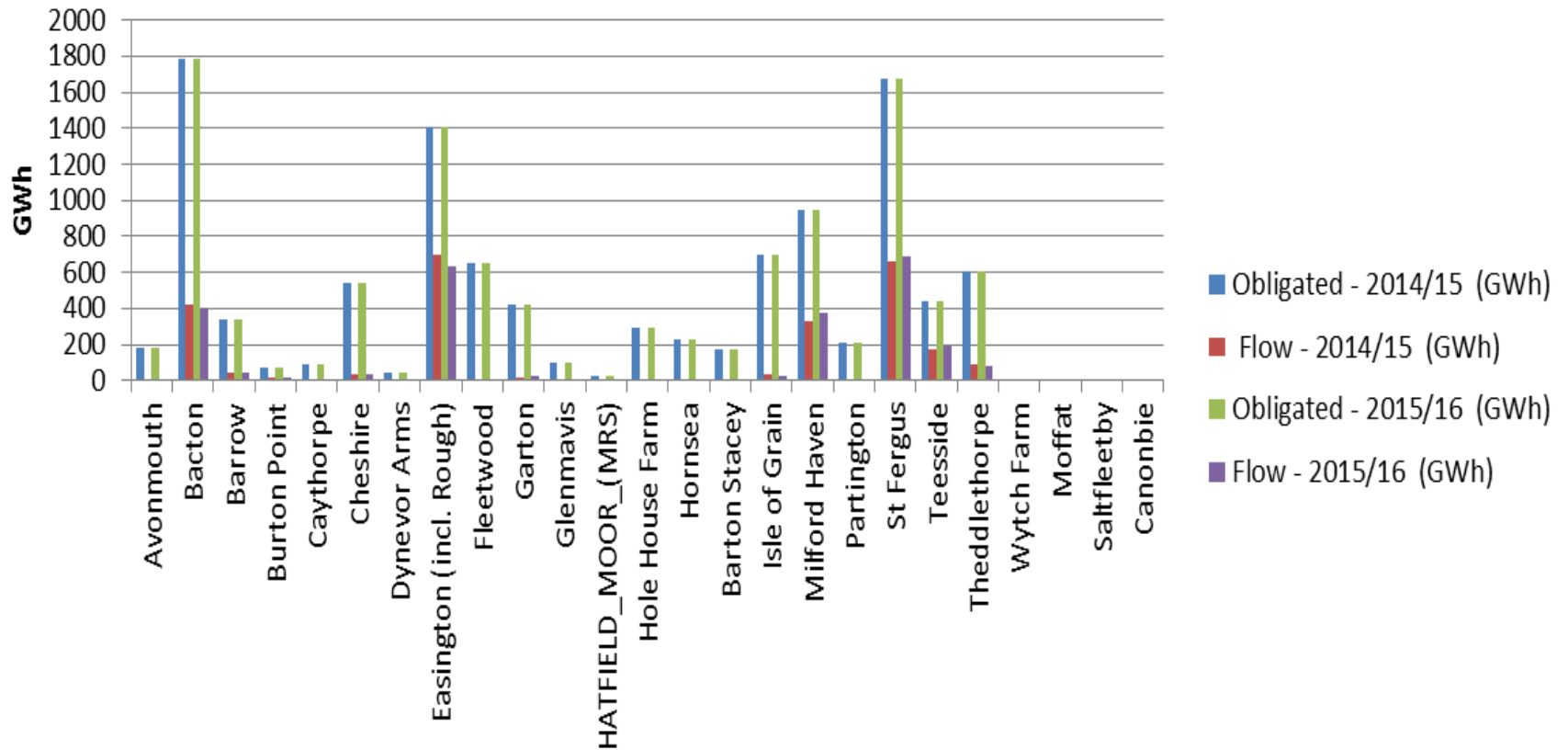
High level key assumptions for Modelling CWD compared to LRMC

- We have assumed that GB has a single methodology for all points (Interconnection Points (IPs) and Non Interconnection Points (Non-IPs)).
- We have assumed no change in behaviour relating to the purchase of capacity
- TO MAR used as revenue, what is assumed to be Transmission Service Revenue
- We have not included any discount structure, therefore all capacity at each point attracts the same price

Entry – Obligated and Flow

- Flows represent approximately 23% of Obligated

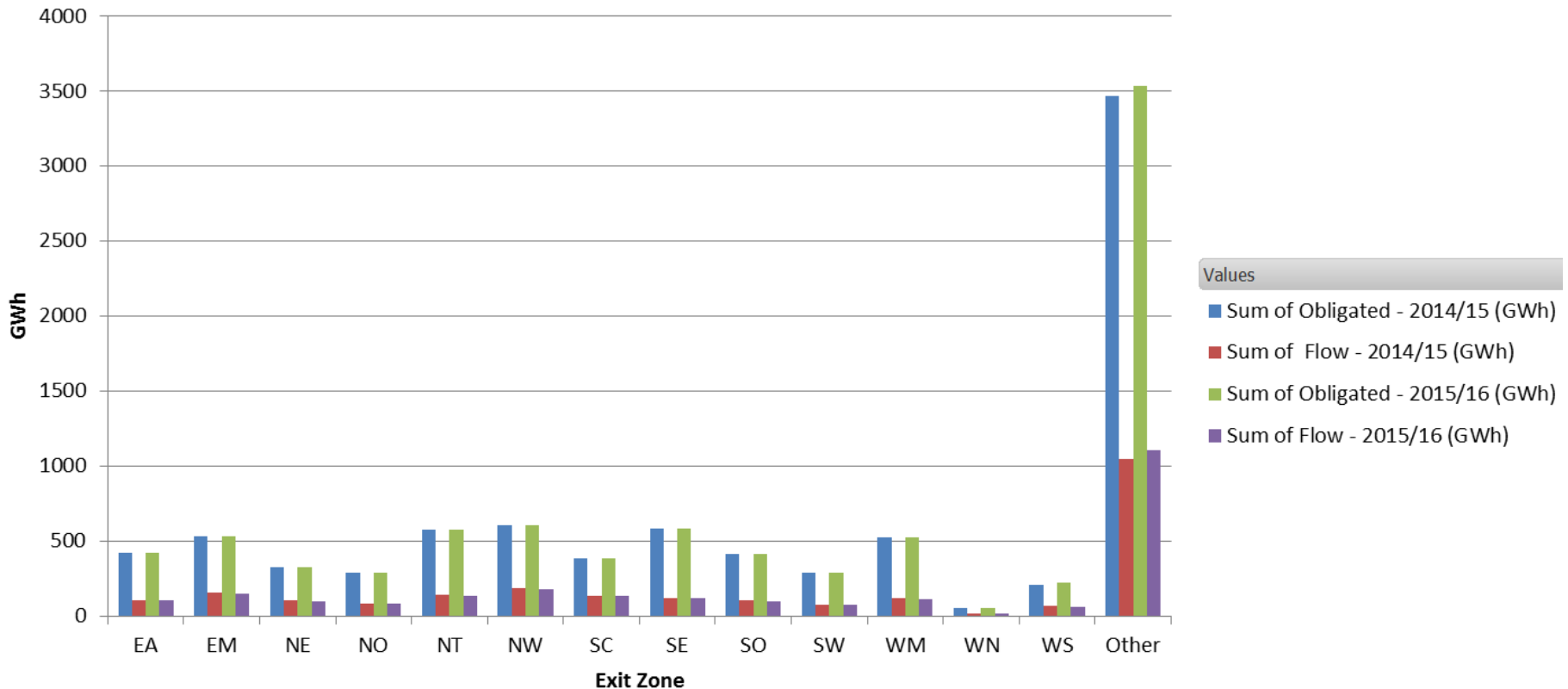
Entry - Obligated and Flow data



Exit – Obligated and Flow

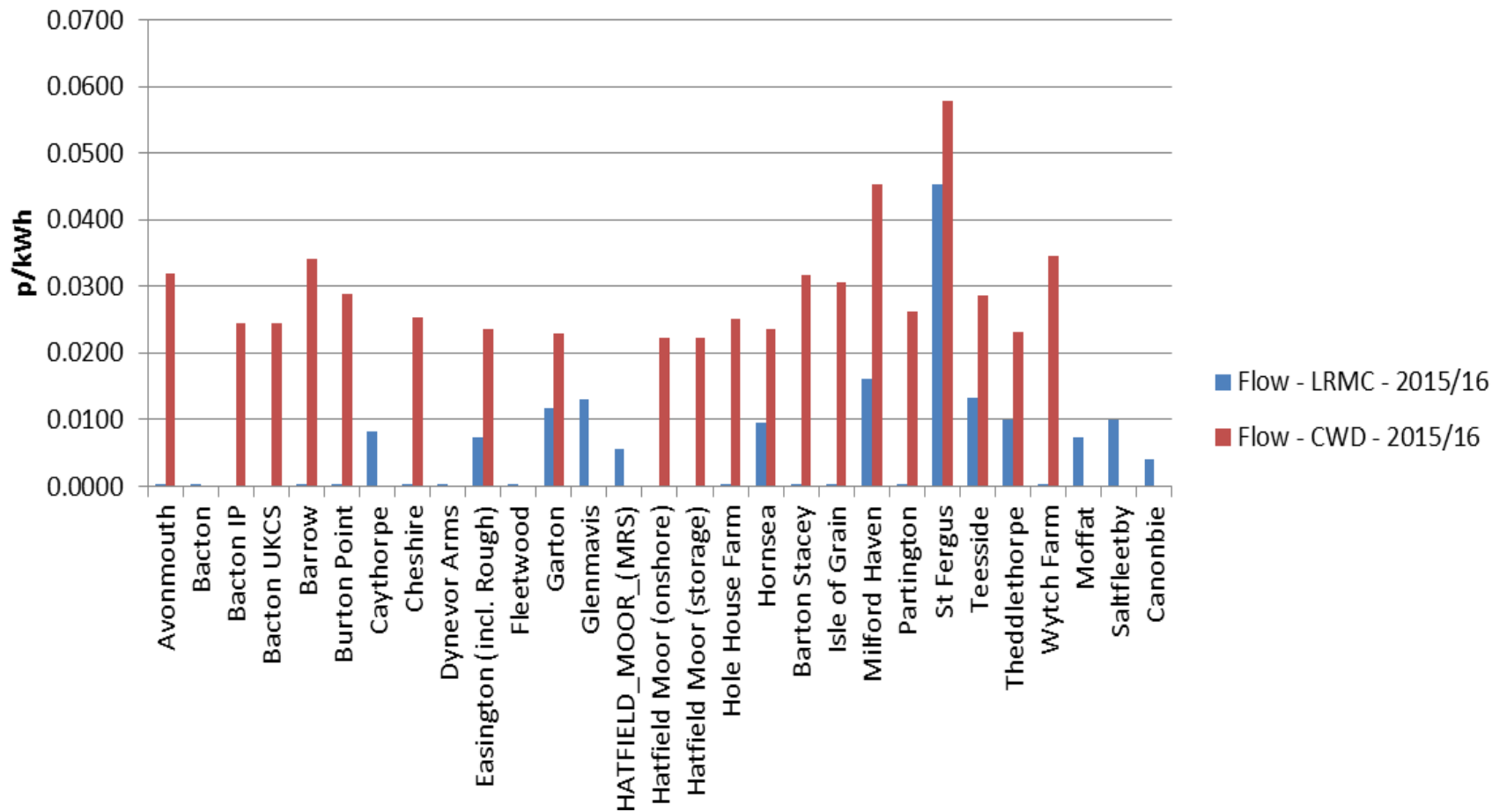
- Flows represent approximately 28% of Obligated

Exit Obligated and Flow data



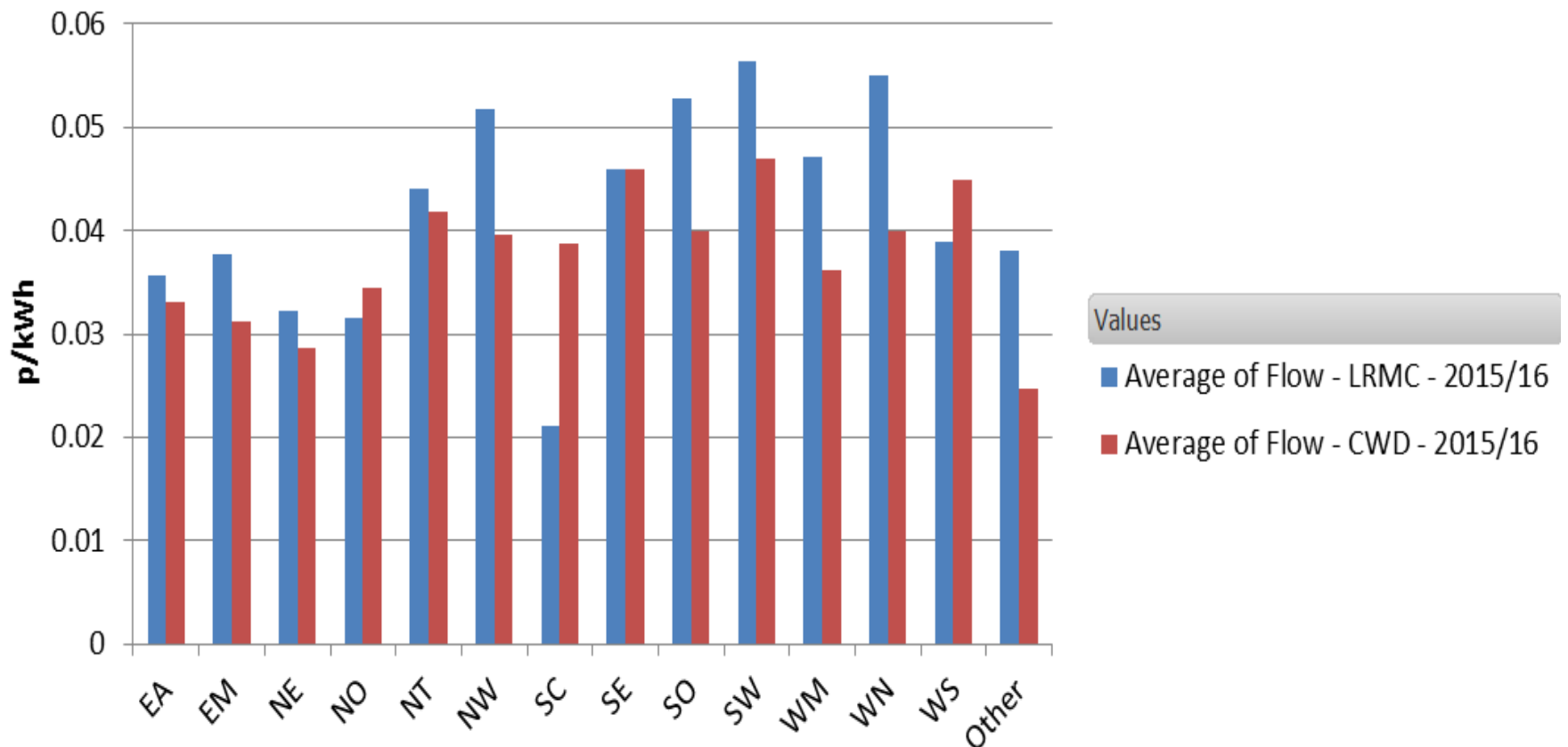
Entry Prices – LRMC compared to CWD model nationalgrid

Entry Prices - LRMC compared to CWD model



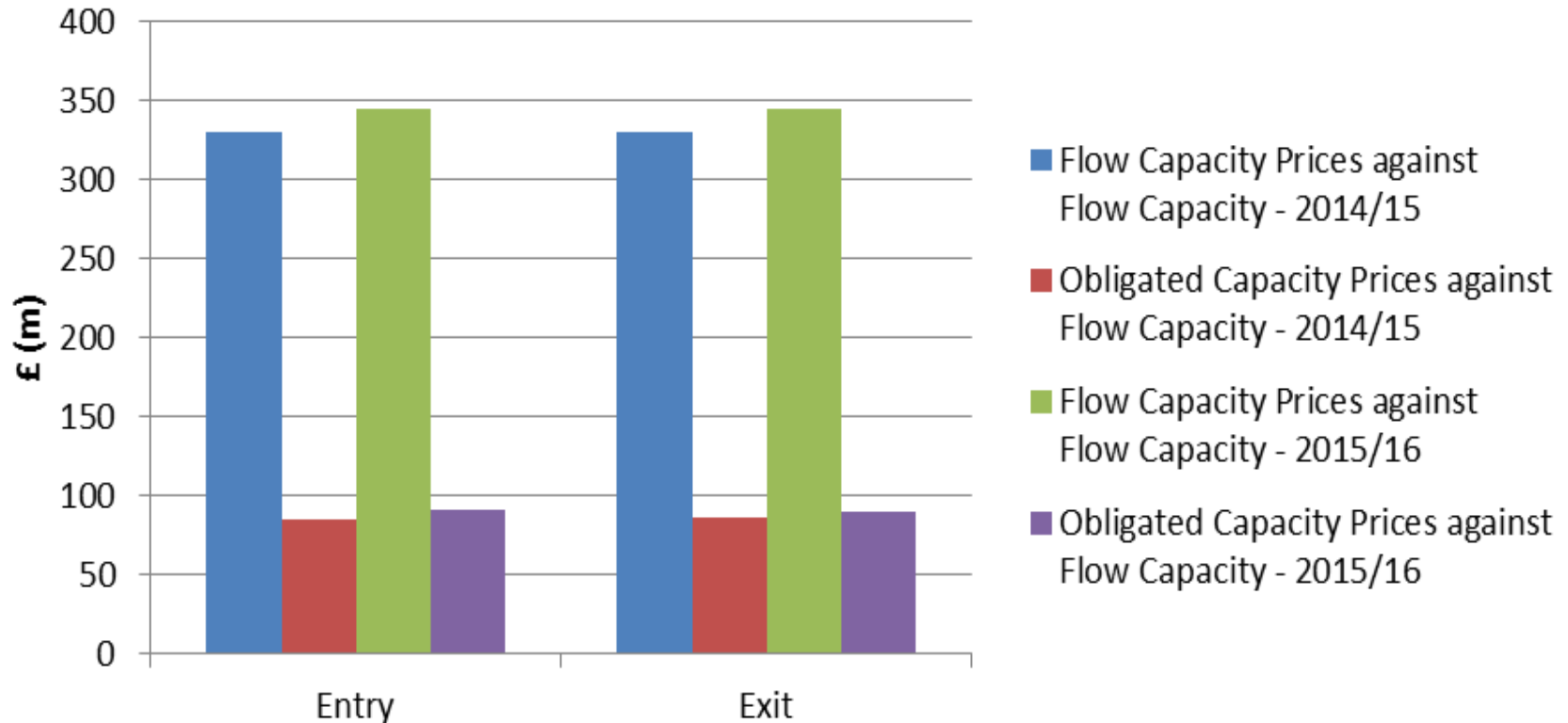
Exit Prices – LRMC compared to CWD model

Exit Prices - LRMC compared to CWD model



Revenue collected under flow & obligated capacity prices against flow capacity

Revenue collected under flow and obligated capacity prices against flow capacity



Summary

Modelling CWD and LRMC with flow data

- Flow levels are currently less than 30% of the obligated levels for both Entry and Exit
- When recovery of revenue is linked to a low % against forecast charges could result in:
 - Significant under recovery that will need to be accommodated into potentially volatile charges
 - Undermining the methodology used for setting capacity
- Under any methodology the link between actual and forecast (when used in setting prices) is important
 - Forecasted contracted capacity needs to be as close to what is going to be flowed on system to ensure revenue is collected in applicable year

Gas Charging Review



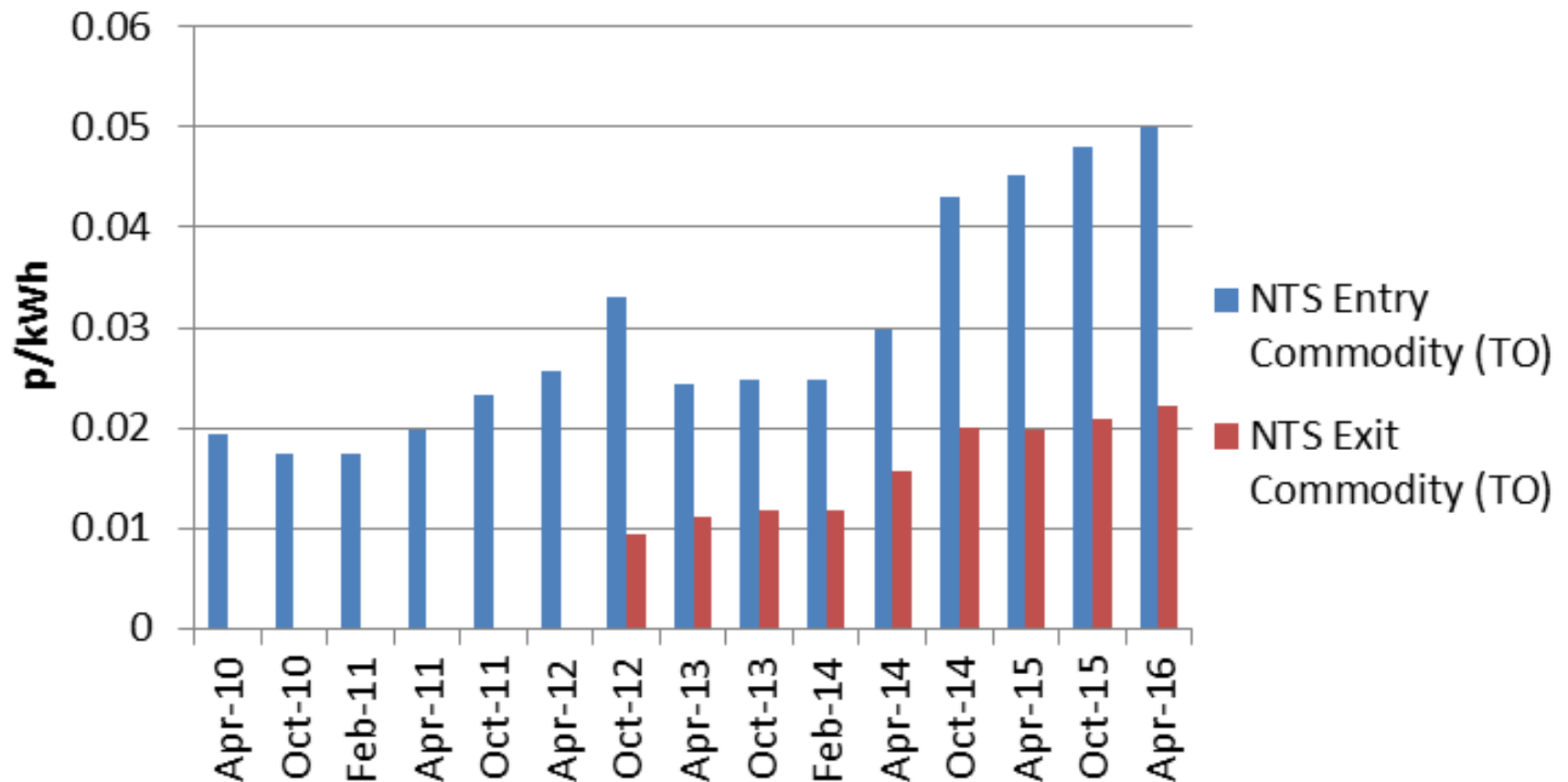
History of Commodity Rates / Modelling CWD and LRMC with flow data

Commodity Charges Overview

- Charges calculated are based on TO Revenue for which our working assumption is that this equates to Transmission Services Revenue under EU Tariffs Code
- History of Commodity Charges as they are today
 - Therefore the chargeable demand base takes volumes on NTS Optional Commodity into account
 - No NTS Optional commodity rates are presented – these are customer specific
- Present the commodity charges calculated as they are today alongside the LRMC and CWD capacity charges (as seen in previous NTSCMF meetings)

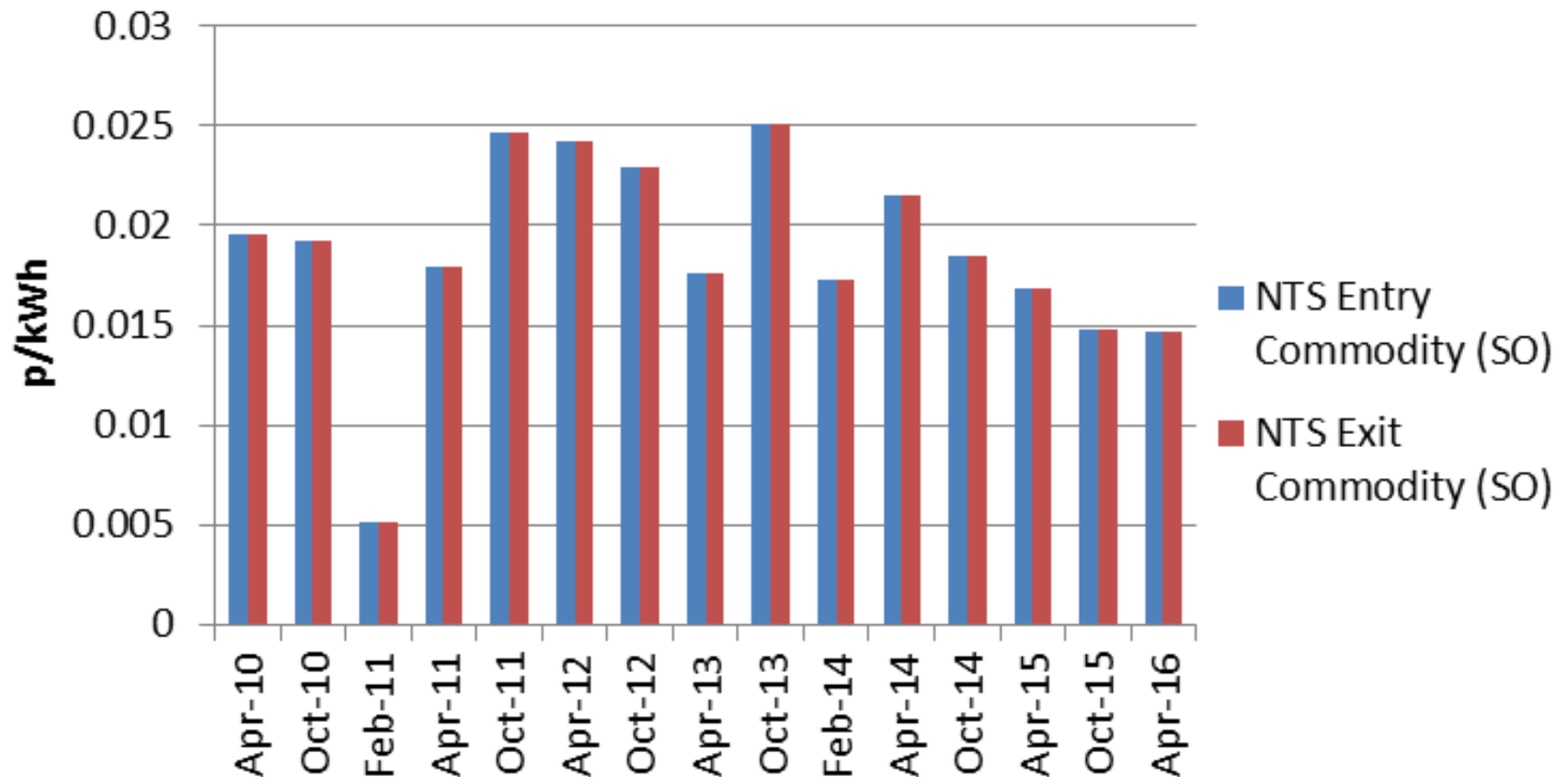
TO Commodity Charges

TO Commodity Charges



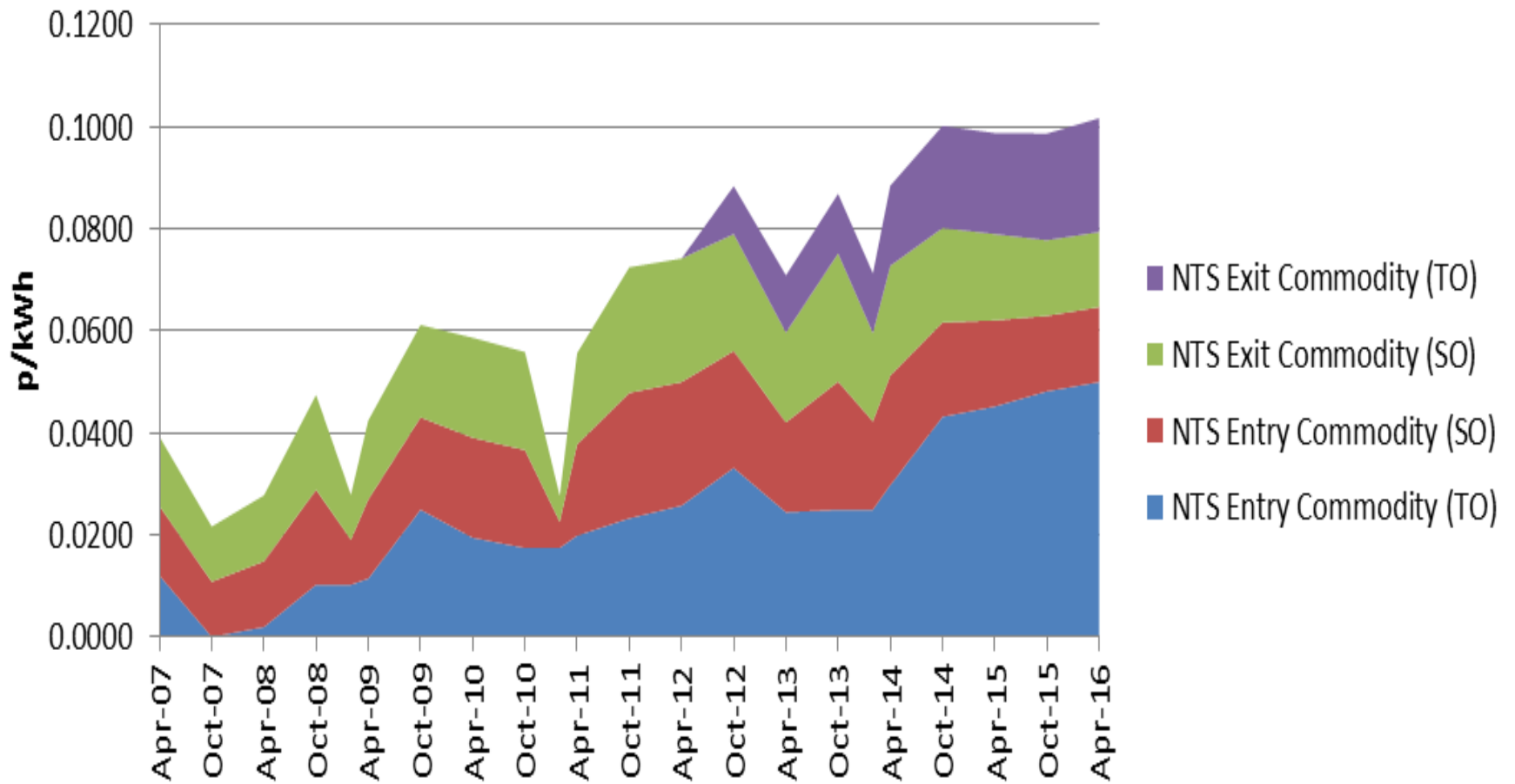
SO Commodity Charges

SO Commodity Charges



Commodity Charges

Commodity Rates



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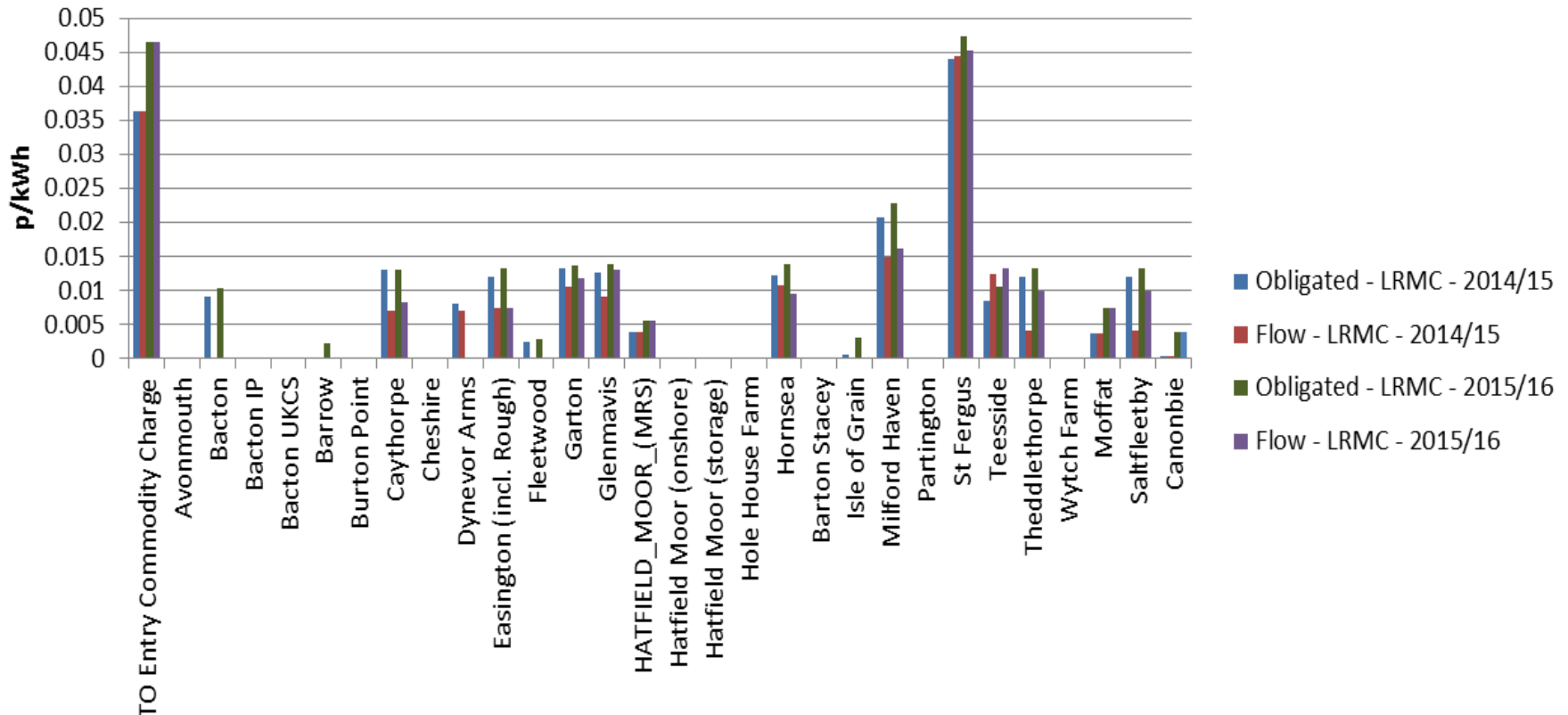
Commodity vs Capacity Charges

- Capacity Charges produced in March and April NTSCMF and then average Commodity Rates in associated year
- Shows the differences between Capacity rates produced in the models under different scenarios and applicable average Commodity Rates in associated year

Commodity vs Capacity Charges – nationalgrid

Entry - LRMC

Entry Prices - LRMC model - Obligated and Flow against Commodity Charge Rate

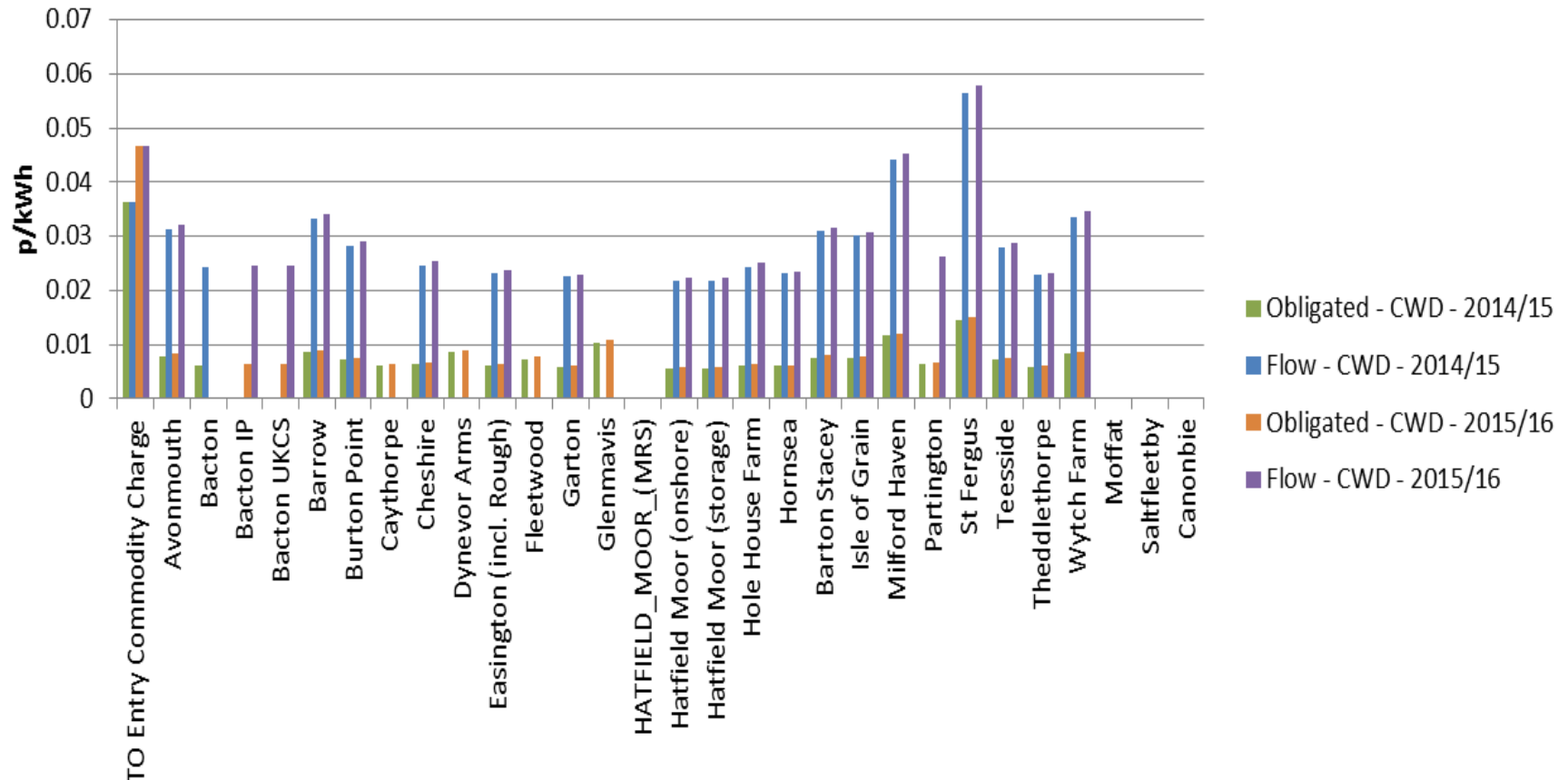


TO Exit Commodity Charge is the average over the year

Commodity vs Capacity Charges

– Entry – CWD

Entry Prices - CWD model - Obligated and Flow against Commodity Charge Rate

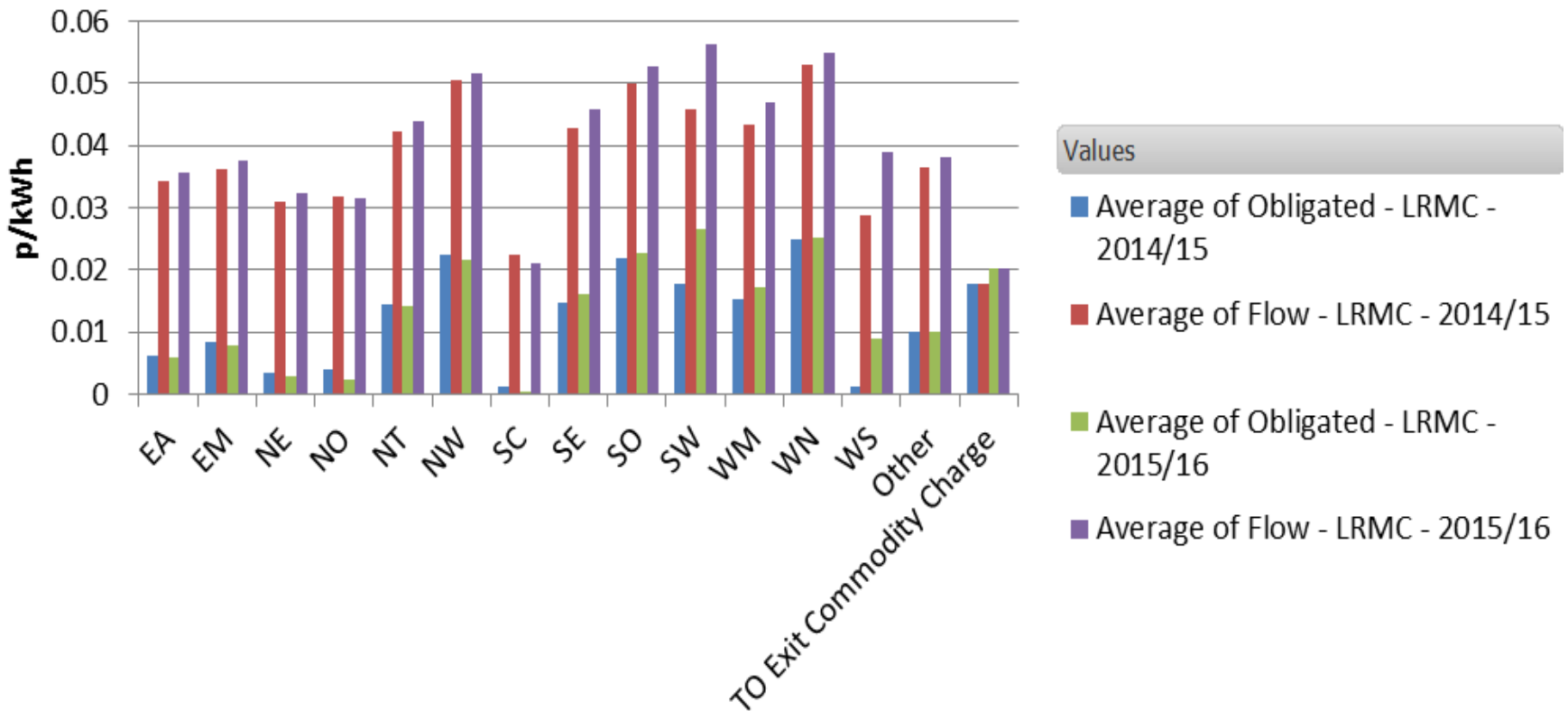


TO Entry Commodity Charge is the average over the year

Commodity vs Capacity Charges

– Exit – LRMC

Exit Prices - LRMC model - Obligated and flow against Commodity Rate

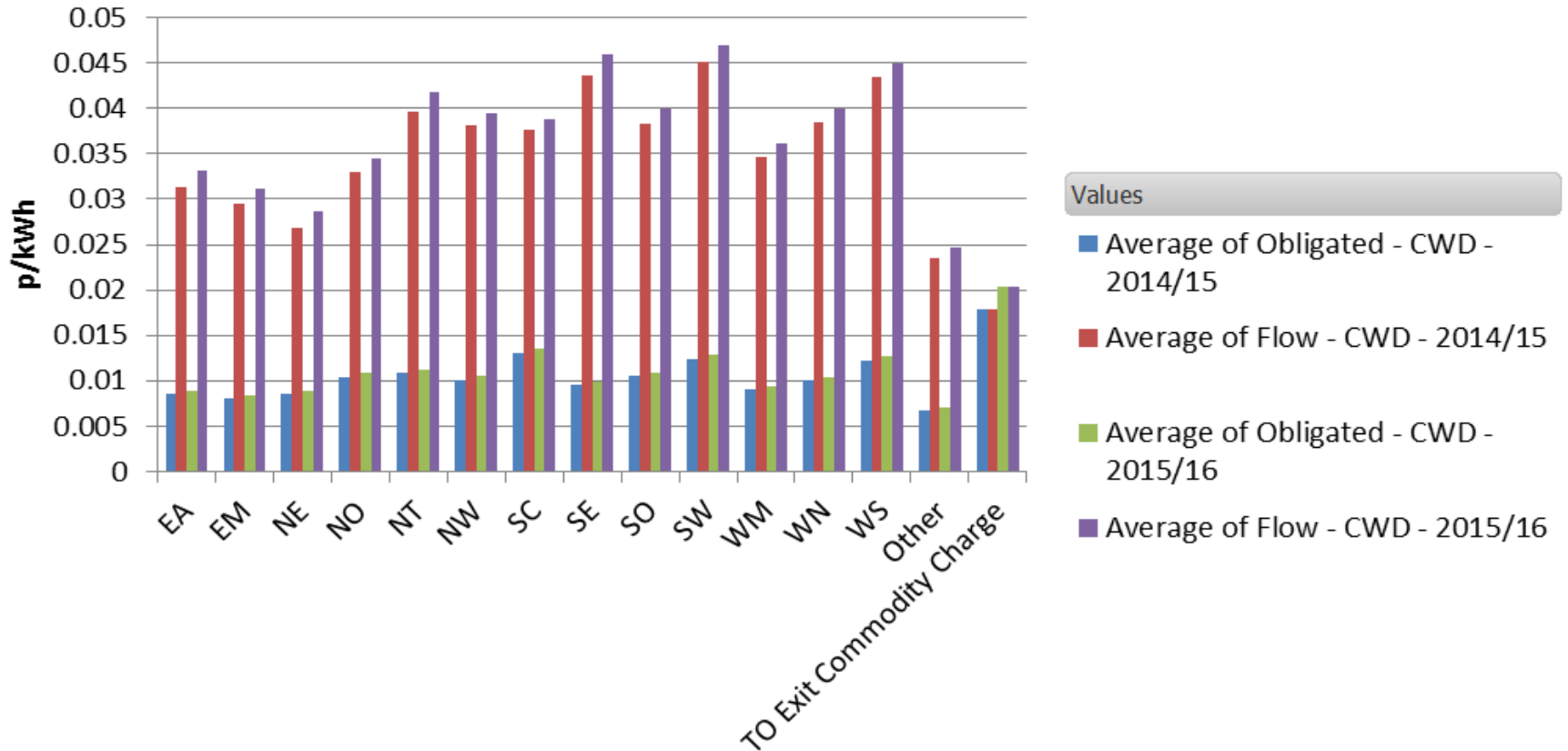


TO Exit Commodity Charge is the average over the year

Commodity vs Capacity Charges

- Exit - CWD

Exit Prices - CWD model - Obligated and flow against Commodity Rate



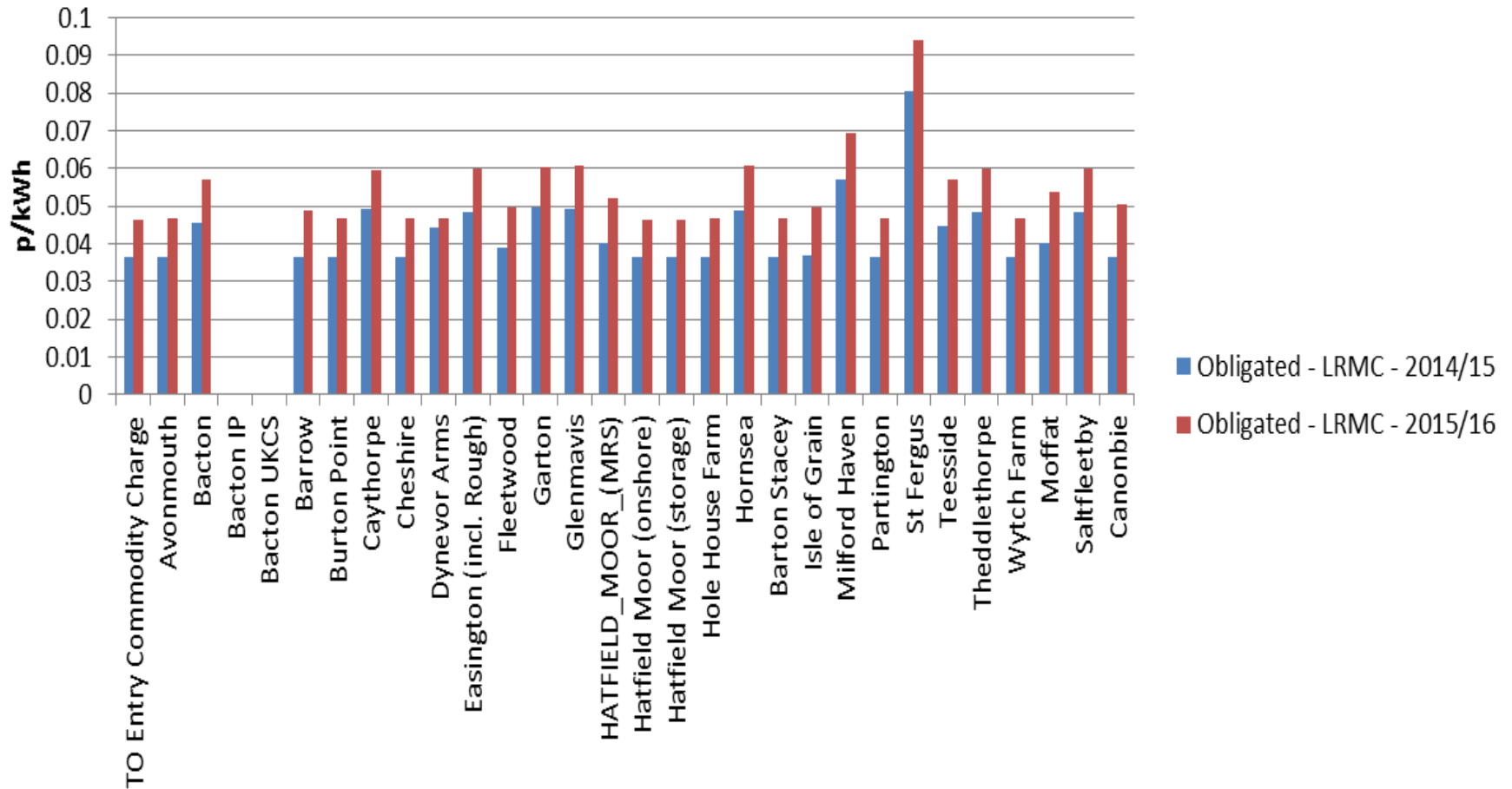
TO Exit Commodity Charge is the average over the year

Capacity Charge and Commodity Charge Total – Obligated Values

- For LRMC model - when using obligated levels the revenue recovered will not be the MAR so need to have a Commodity charge (as we currently have today)
- Graphs show the TO Capacity charges and TO commodity charges combined to make a total charge
- Also show what the TO Commodity Charge would be if buying capacity at zero price

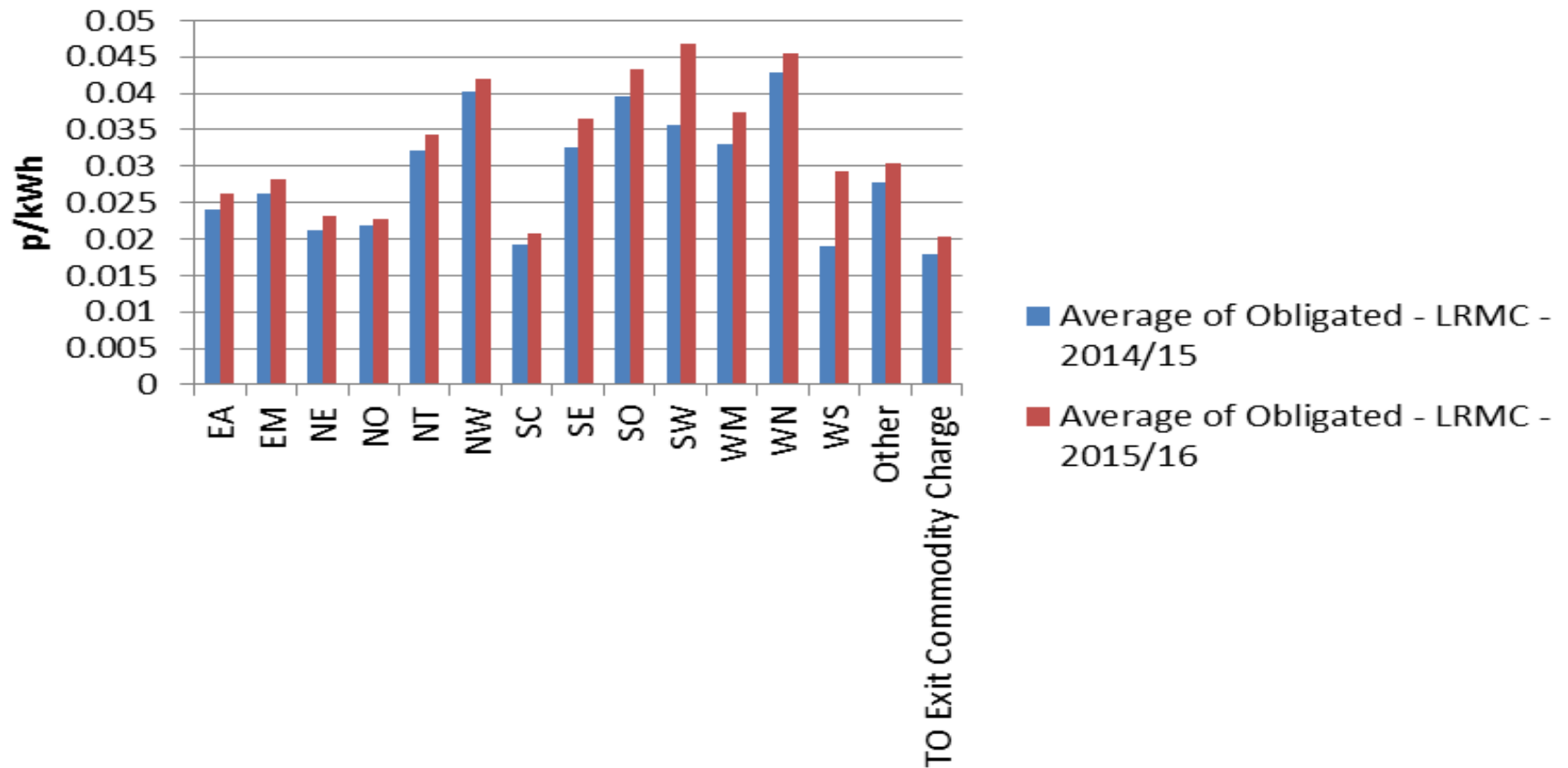
LRMC – Entry Capacity Charge and nationalgrid Commodity Charge Total

LRMC - Entry Capacity Charge and Commodity Charge



LRMC – Exit Capacity Charge and Commodity Charge Total nationalgrid

LRMC - Exit Capacity Charge and Commodity Charge



Revenue – Under/over recovery

- If do not collect revenue in applicable year from capacity charges at the moment have a commodity charge
- Currently pay capacity charge for everything that is booked and commodity charge for everything that flow
- Any under/over recovery of revenue collected in applicable will feed through into the revenue to collect in $y+2$

Tariff Code Under/over Recovery

- Under Tariff Code we will need to collect most (if not all) revenue by capacity charges
 - If we have a top up charge this can be done in a number of ways, some examples are:
 - Know we are going to under recover due to contracted forecast been incorrect so add top up element to capacity charge
 - Unknown when under recover is so feeds into revenue in 2 years time – which will effect prices in 2 years time.

High level key assumptions for Modelling CWD compared to LRMC

- We have assumed that GB has a single methodology for all points (Interconnection Points (IPs) and Non Interconnection Points (Non-IPs)).
- We have assumed no change in behaviour relating to the purchase of capacity
- TO MAR used as revenue, what is assumed to be Transmission Service Revenue
- We have not included any discount structure, therefore all capacity at each point attracts the same price

Under/over Recovery Analysis

- Using obligated charges (produced in previous NTSCMF analysis) but assumed that capacity equals average flow capacity value over year
 - Times the obligated charges by the average flow capacity, which will give the revenue which will be collected assuming that everyone is paying the same price for capacity
 - There will be a revenue left over which will need to be collected via a top up charge

Revenue under recovery - Entry

	Obligated charges against flowed capacity 2014/15 - LRMC	Obligated charges against flowed capacity 2015/16 - LRMC	Obligated charges against flowed capacity 2014/15 - CWD	Obligated charges against flowed capacity 2015/16 - CWD
Total Revenue (£m)	329.6	344.7	329.6	344.7
Revenue Collected (£m)	186.4	210.6	85.0	90.9
Revenue Difference (£m)	143.3	134.1	244.6	253.7

NB: Due to rounding the figures may not match exactly

Revenue under recovery - Exit

	Obligated charges against flowed capacity 2014/15 - LRMC	Obligated charges against flowed capacity 2015/16 - LRMC	Obligated charges against flowed capacity 2014/15 - CWD	Obligated charges against flowed capacity 2015/16 - CWD
Total Revenue (£m)	329.6	344.7	329.6	344.7
Revenue Collected (£m)	82.6	82.5	86.7	90.5
Revenue Difference (£m)	247.1	262.2	242.9	254.1

NB: Due to rounding the figures may not match exactly

p/kWh flat top up

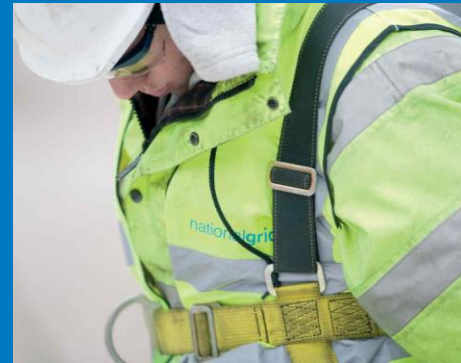
- Pay flat top up on flow capacity (used as forecasted contracted capacity)

	Top up charge for flow capacity - 2014/15 - LRMC	Top up charge for flow capacity - 2015/16 - LRMC	Top up charge for flow capacity - 2014/15 - CWD	Top up charge for flow capacity - 2015/16 - CWD
Entry - Top up (flat rate) (p/kWh)	0.0153	0.0143	0.0262	0.0272
Exit - Top up (flat rate) (p/kWh)	0.0271	0.0288	0.0267	0.0279

Analysis – Summary

- If using Obligated level prices but only flow current capacity then would under recover revenue for applicable year
- For capacity charges to recover close to the required allowed revenue the amount booked must therefore be as close to requirements for use as possible
- With any move to capacity over commodity for TO (Transmission Services) this would likely result in behavioural changes for shippers
- Behavioural changes will vary across shippers based on price responsiveness

Gas Charging Review



EU Tariff Code – Current Outlook

EU Tariff Code Update

- **28-29 April:** Informal Member State meeting
- Topics of interest to Member States
 - ACER review of charging methodology (most discussed topic); ACER guidance on regulatory accounting principles; Asset cost split; Storage discounts; pricing of backhaul; secondary adjustments, language of periodic consultation, existing contracts, implementation, article for interconnectors, and entry into force
- Text currently under review
- Updated text to be issued by EC mid-June

EU Tariffs Code: current proposals

■ Definitions:

- “alternative transmission tariffs”: currently only about “path-based” firm capacity but push to also include concept of avoidance of inefficient bypass of transmission system
 - This addition would allow possibility of a having discount to firm capacity for “short-haul”
- Term “path-based” may revert back to “conditional”

EU Tariffs Code: current proposals

- **Storage (*Art 10*):**
- Latest text requires that storage discount is at least 50%. (Option 1)
- All criteria for determining discount removed from article
- Level of discount simply subject to consultation
- ENTSOG pushing for discounts less than 50% under certain criteria
- Option 2 proposal: of default of 100% discount, adjusted to reflect any costs associated with storage unlikely to be accepted.

EU Tariffs Code: current proposals

Possible drafting for *Art. 10 Discounts applied at entry points from and exit points to storage facilities*

“As part of the decision referred to in Article 27(4), when the national regulatory authority sets or approves the capacity-based transmission tariffs at entry points from and exit points to storage facilities, a discount of at least 50% shall be applied to the respective capacity-based transmission tariffs. Due to exceptional circumstances such as where a storage facility is connected to more than one entry-exit system and may be used as an interconnection point or where such storage facility is used for short-term gas trade, such discount may be less than 50%.”

n.b. Possible additional text in **red**

EU Tariffs Code: current proposals

- **Article 13: Level of multipliers and seasonal factors**
- ENTSOG proposing
 - no automatic drop in multiplier ceiling of 3 for daily products
 - Formal link of multiplier review to ACER implementation monitoring requirement under Art 9(1) of EC 715/2009
- GB might be lone voice in pushing for multipliers <1

EU Tariffs Code: current proposals

- **Calculation of interruptible price (*Art 16*):**
- Backhaul priced at administrative/marginal cost of product reintroduced
 - “A” factor may be introduced in backhaul pricing (i.e. multiplier applicable to discount)
 - ENTSOG has proposed new drafting that reintroduces concept that backhaul should be priced as for interruptible

EU Tariffs Code: current proposals

- **ACER review (*Art 27*):**
- Review cycle was every 5 years – now **“at least” every 5 years**
- ENTSOG to propose ACER review to occur during main industry consultation to streamline process

EU Tariffs Code: current proposals

- **Article 30: Information to be published before the tariff period**
- 30(2)(b): Publication of tariff model
 - ENTSOG proposes publication of “simplified tariff model” or “*sensitivity analyses enabling network users to estimate the possible evolution of transmission tariffs beyond such tariff period*”.
 - Current text only mentions “*at least a simplified tariff model*”

EU Tariffs Code: current proposals

- **Regulatory accounting Principles (*Art 38*):**
- Requirement for ACER Guidance document expected to be deleted but report on different regimes to remain
- ENTSOG still pushing for deletion of Art 38, but sees deletion of only paragraph 3 (guidance document) as a compromise

EU Tariffs Code: current proposals

- **Existing contracts (*Art 39*):**
- Protection for fixed price element for contracts concluded before 29 November 2013 still included
- Uncertainty as to whether the article gives any protection to GB shippers
- Clarity being sought with Commission re applicability to GB
- Text under review by commission
- Current outlook is that Art 39 will be clarified and will apply to GB (but not certain yet)

Gas Charging Review



Dual Regime discussion

Discussion:

Updates on Dual Regime Scenarios

- Placeholder for some additional slides providing relevant updates since May on Dual Regime scenarios including
 - Scenarios whereby a Dual Regime may be possible
 - Any updates on changes to CAM for example relating to Alternative Transmission Tariffs

Discussion: (refresher from May)

Potential Dual Regime Scenarios (1/2)

Item	Description	IP	Non IP	Comments
Reference Price Methodology (RPM)	The Main methodology to recover Transmission Services Revenue	One methodology at all points		Requirement that IP must float each year, with new payable price
Complimentary Revenue Recovery Charge (CRRC)	Permitted commodity “top up” to reach allowed revenue	Not allowed at IPs	Can be applied at Non IPs	If used can only be for Non-IPs
Storage pricing	Treatment for Capacity pricing for storage	One methodology at all points. Minimum discount of 50% from the Capacity based transmission tariffs.		No criteria specified to determine the discount
Short Term Pricing	Options for short term pricing linked to reserve prices	No discounts permitted. Only multipliers or seasonal adjustments	Discounts could be applied at Non IPs	Could align non-IPs with IPs, but if discounts adopted at non-IPs, can’t apply same at IPs

Discussion: (refresher from May)

Potential Dual Regime Scenarios (2/2)

Item	Description	IP	Non IP	Comments
Alternative Transmission Tariffs	Charges that contribute to the Transmission Services Revenue that must be linked to a discount from reserve prices	If applied, they apply at all points as they are part of the RPM		If what we call “shorthaul” is considered a Transmission Service this could be where it could sit. Other options may be permitted.
Fixed prices (excluding any “protected” capacity) for incremental	Providing a fixed price for Capacity ahead of the date of use	A choice as to whether these are offered. Method fixed under the Tariffs Code	Can be as today or as per IP	Any different approach IP vs Non-IP would need to consider relevant objectives
Interruptible	Methodology for pricing interruptible capacity	Ex ante discount reflecting the probability of interruption	Can be as today or as per IP	Any different approach IP vs Non-IP would need to consider relevant objectives
Existing Contracts* (Article 39 of EU Tariffs Code)	Price can't be adjusted for contracts concluded before 29 November 2013 . May apply to GB.	Applies to all points, Entry only, subject to clarification.		If applied, assume this would not apply to Exit as Exit already has administered prices

**Linked to NTSCMF Action 0504 relating to clarifying if this is the case*

Discussion:(refresher from May) nationalgrid

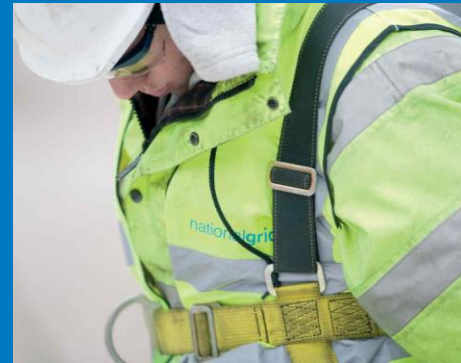
Non Transmission Services and Dual Regime

Charge	Detail	Comments
Flow Based charge covering costs mainly driven by quantity of gas flow	Potentially could be equivalent to Shrinkage values	Can be applied to all points
Residual	Remainder of revenue from target SO can be subject to separate method, could be via a Commodity Charge	Can be applied to all points
Special arrangements	Becomes a GB discussion about whether or not to have any alternative charging arrangements for Non Transmission Services	Can be applied to all points

Summary for Non Transmission Services under Dual Regime scenarios

- Under the EU Tariffs Code there are more prescribed elements for Transmission Services, leaving potentially more flexibility for Non Transmission Services
- Becomes a GB Discussion as to what the optimal approach is, subject to NRA approval
- Subject to GB discussion and Ofgem approval

Gas Charging Review



Relevant Objectives Discussions

Relevant Objectives Discussion Overview

Item	Detail
Reminder of Relevant Objectives currently applicable for charging arrangements	<ul style="list-style-type: none">• GB Relevant Objectives• Summary of EU Relevant Objectives• Summary of Relevant Objectives
Relevant Objectives	<ul style="list-style-type: none">• Discussion on how to consider measurement against relevant objectives• How this could be applied to Charging Review / EU Tariffs Code discussions
Relevant Objectives alignment	<ul style="list-style-type: none">• Discussion on how alternative Reference Price Methodologies align to Relevant Objectives• Discussion on how potential dual regime scenarios align to Relevant Objectives

Reminder of Charging Obligations / Relevant Objectives – GB Current

Licence Obligations	Detail
<p>Licence Standard Special Conditions</p> <ul style="list-style-type: none"> A4 - Charging General A5 - Charging Methodology 	<ul style="list-style-type: none"> Keep charging methodology under review Use reasonable endeavours regarding methodology and charge changes: <ul style="list-style-type: none"> Not to make changes more frequently than twice a year (on 1 April and 1 October) In relation to exit capacity once a year on 1 October

GB Relevant Objectives	
<ul style="list-style-type: none"> Cost reflectivity Promote efficiency Avoid undue preference in the supply of transportation services Best promotes competition between gas suppliers and gas shippers 	<ul style="list-style-type: none"> Take account of developments in the transportation business Compliance with Regulation and decisions from the EC and ACER Follow any alternative arrangement determined by the Secretary of State

Reminder of Charging Obligations / Relevant Objectives – EU Tariffs Code

nationalgrid

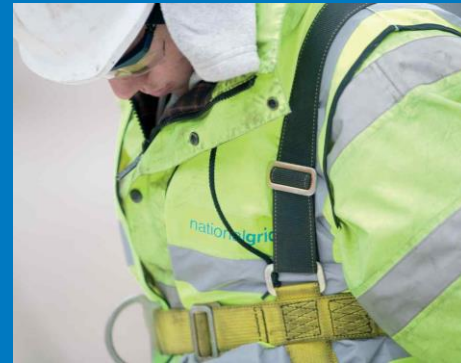
EU Tariffs Code Relevant Objectives

- Charges must be levied for access for existing and incremental infrastructure
- Access based on published tariffs available to all eligible customers
- Applied objectively without discrimination and approved by NRA
- Accounts for need of system integrity and improvement
- Reflect efficient costs incurred with appropriate return on investment
- Can take account of benchmarking by NRA
- Facilitate efficient gas trade and competition
- Avoid cross-subsidies between users
- Provides incentives for investment and interoperability
- Set separately for every entry and exit point
- Cannot restrict market liquidity nor distort cross-border trade

Relevant Objectives and Alternative nationalgrid RPM and Dual Regime scenarios

- Placeholder for slides to facilitate discussion regarding relevant objectives and how alternative charging arrangements and dual regime scenarios align with them
- To be included on 31 May

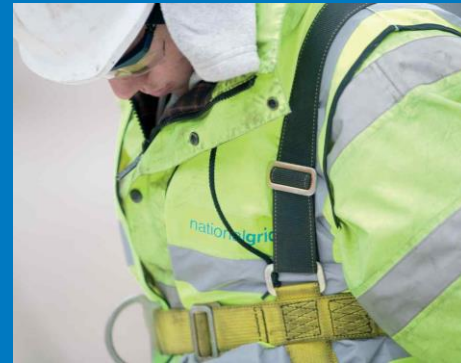
Next Steps



Next Steps

- To be populated on 31 May

Contact us



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