Impact on BSUoS charges and RCRC from the delivery of Mandatory Response under current arrangements and under P34 and P36

Paper by National Grid

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Introduction

This paper is intended to facilitate discussions relating to BSC Modification Proposals P34 and P36. The paper:

i. outlines the Balancing Services Use of System Charge (BSUoS) and the Residual Cashflow Reallocation Cashflow (RCRC), and notes that a party's net exposure is the difference between these two charges;
ii. it considers the impact of the current contracting mechanism for Ancillary and Other services on the net charge; and
iii. it estimates what the impact on the net charge of P34 and P36 would be, if applied to mandatory frequency response.

The paper concludes that the adoption of P34 and its application to mandatory frequency response would have no impact on the net charge. However, the adoption of P36 would increase the net charge to users by £2 – 12 M pa.

BSUoS Charge

BSUoS is paid by the lead party of a BM unit in proportion to its metered delivery or offtake. This charge is used to fund the System Operator in respect of balancing the system. In particular it includes the cost that the Transmission Company has incurred in the following areas[1]:

i. The Total Costs of the Balancing Mechanism;
ii. Total Balancing Services Contract costs;
iii. Payments/Receipts from National Grid incentive schemes;
iv. Costs of operating the System;
v. NETA implementation Costs;
vi. Costs associated with contracting for and developing Balancing Services;
vii. Adjustments; and
viii. Costs invoiced to National Grid associated with Manifest Errors and Special Provisions.

[1] See section 6 of Part 2 of "The Statement of Use of System Charges" (National Grid).

Residual Cashflow Reallocation Cashflow

The Residual Cashflow Reallocation Cashflow (RCRC) is paid (by the participant the BM Units energy is allocated to) in proportion to a BM unit's credited energy delivery or offtake volume. This cashflow represents the income BSCCo has received in respect of the following[2]:

i. Total System Information Imbalance Cashflow; and
ii. Total System Energy Imbalance Cashflow.

Net Charge

Parties are normally exposed equally to BSUoS and RCRC. Hence the net charge any party is exposed to is $BSUoS_j - RCRC_j$. Since P34 and P36 both impact on $BSUoS_j$ and $RCRC_j$ it is appropriate to consider the net impact of these two charges.

Mandatory Response Imbalance

Current arrangements

When a party delivers energy associated with an ancillary or other service it potentially exposed to an energy imbalance charge. The imbalance receipt is then incorporated into the RCRC.

The Transmission Company will also make a payment for the ancillary or other service delivered. This will include either an explicit refund of the imbalance charge, or the service price will include an element to cover the provider's expected imbalance exposure. This cost will be included in the BSUoS charge.

Therefore, where a participant is subject to both BSUoS and RCRC these imbalance charges net out (assuming that the contract payments reflect the charges incurred).

Under P34 and P36

P34 and P36 both remove the imbalance (subject to the expected and actual energy volume matching) resulting from the delivery of energy associated with ancillary and other services. As a result RCRC is reduced by the amount of imbalance removed. As parties are no longer liable for imbalance payments resulting from ancillary and other service delivery, the explicit refund will be removed, and prices may be lowered to reflect that the imbalance cost is no longer incurred. This will result in a reduction in the BSUoS charge.

Therefore with respect to imbalance charges, P34 and P36 both reduce BSUoS and RCRC by a (near) identical amount. There is no impact on a user's net charge.

[2] See BSC 4.10.1 (Note that $CSOBM_j$ cancels out with $TCND_j$ - $TCEI_j$).

Energy Payments

P34 and P36 differ in respect of the payment for energy associated with services. P34 pays energy at a contract rate[3], whilst P36 pays the energy delivered at bid offer price (based on minute by minute acceptances).

In respect of response this is a significant departure from current arrangements, where currently a single energy price is applied[4]. This means that for an increase in output from a provider, the provider is paid at the same rate to that paid to the Transmission Company for a reduction in output. Hence, the total cost of energy delivered as response is the net volume of energy multiplied by the price paid. Since the Transmission Company maintains system frequency at an average of 50Hz, over time the volume of response energy nets to zero. Therefore the total cost of response energy averages out at £0.

P36 pays response energy at bid price (for avoided production) or offer price (for increased production). The spread of the bid-offer price will determine the total cost of the energy. Because of the relatively low expectation of energy delivery from responsive generation, optimal response holding will tend to be on units with higher prices than those despatched for energy balancing. The spread of responsive bid offer acceptances may be greater than the SBP to SSP spread.

Annually, response providers typically increase output by 0.24 TWh and similarly reduce output by 0.24 TWh (net volume 0 MWh). If the average bid-offer spread for providers delivering response were £10 – 50 /MWh, then this equates to an annual cost of £ 2 –10 M.

Summary of impact of current arrangements on BSUoS and RCRC

The following table summarises the impact on BSUoS and RCRC of the current arrangements, P34 and P36

[3] Reference Price as defined in CUSC 4.1.3.9
[4] CUSC 4.1.3.9 refers

	Current / £M	P34 / £M	P36 / £M
Imbalance Refund	2 – 10[5]	0	0
Net Response energy	0	0	2 – 12[6]
BSUoS total[7]	**2 – 10**	**0**	**2 – 12**

Imbalance	2 – 10	0	0
RCRC total	**2 – 10**	**0**	**0**

BSUoS – RCRC[8]	0[9]	0	2 – 12

Impact		**0**	**2 – 12**

Conclusion

i. With respect to the removal of imbalance refund, P34 and P36 have no impact on the net payment users make of BSUoS – RCRC.

ii. With respect to the energy delivered associated with response, P34 has no impact compared to the current arrangements.

iii. P36 will make a net payment of £2 - 12M (based on a £10 – 50 / MWh responsive bid offer spread) per annum for energy associated with the delivery of response. This will be reflected in an increase in the BSUoS charge with no corresponding decrease in RCRC.

[5] Based on +0.20 TWh and –0.20 TWh response energy (half hourly average), and a spread between SBP and SSP in the range £10/MWh - £50/MWh.

[6] Based on +0.24 TWh and –0.24 TWh response energy (20% increase converting half hour to minute) and a bid offer spread (on responsive plant) of £10/MWh - £50/MWh

[7] Assumes that there is no interaction with the Transmission Company incentive scheme

[8] Assumes appropriate calculation of service volume.

[9] Assumes the Transmission Company refunds actual imbalance costs.