

Gas System
Operator

Default System Marginal Price

Feb 6th 2020
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nationalgrid



Recap

- some time since default cash out arrangements have been looked at
- some concern fed back to NG at operational level regarding imbalanced shippers not being sufficiently held to account.
- there has been an increase in frequency of NG entering the market in recent years
- Further data and information is contained within the appendices of these slides.

Summary of findings

- **Some increase in EoD shipper imbalance over time.**
- **Some increase in neutrality flows and in volatility over recent years.**
- However net impact is limited due to correlation between light and heavy imbalances.
- **NG frequency of entering the market is inversely proportional to the size of the incentive on shippers to balance.**
- **However, EoD shipper imbalance doesn't by itself show any significant variance as the incentive to balance increases.**
- **Overall, nothing looks fundamentally broken with the arrangements.**
- **Possible improvement areas identified:**
 - for simplicity of the Code, and increased cost reflectivity, then amend capacity part of cash out price methodology to Postage Stamp (dependency on PS implementation).
- harmonisation with adjacent markets is desirable but may be mechanistically tricky.

Next Steps

Possible courses of action include:

- **no change, but continue to monitor balancing behaviour.**
- **raise a simple modification covering the improvement areas identified.**
- amend capacity part of methodology to postage stamp price. (Worthwhile but not urgent.)
- **feed information gathered into wider balancing review.**
- raise a more complex modification looking to reform arrangements. This would require considerable time, effort and further analysis.

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Appendices

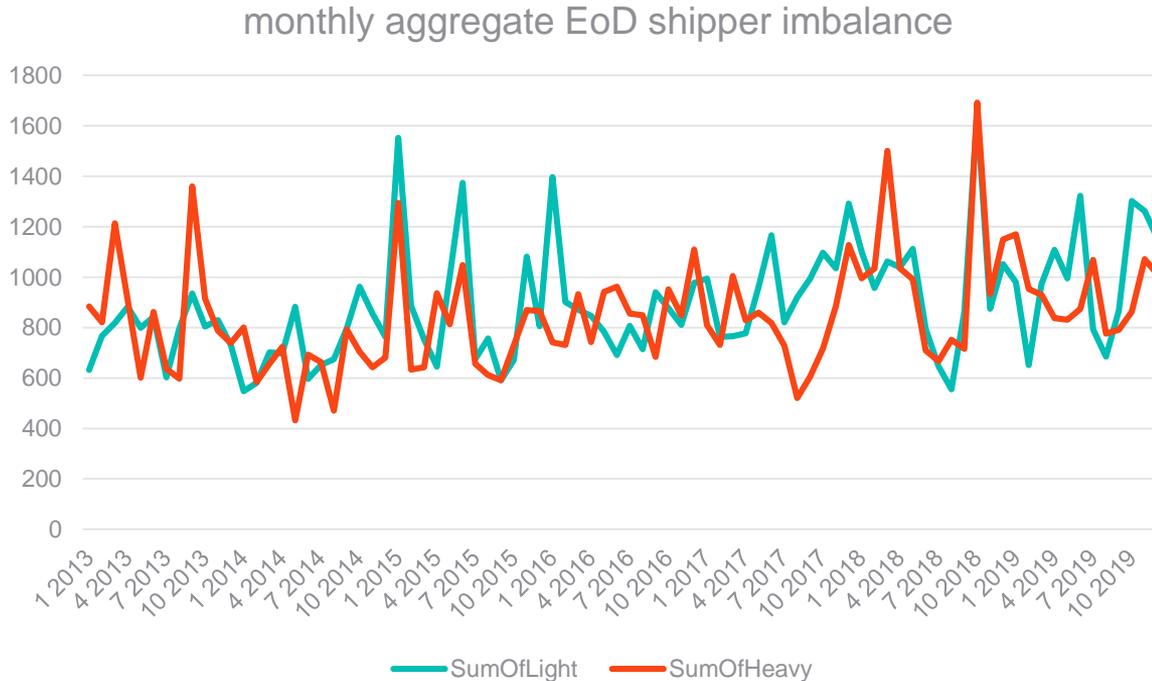
Data & Analysis

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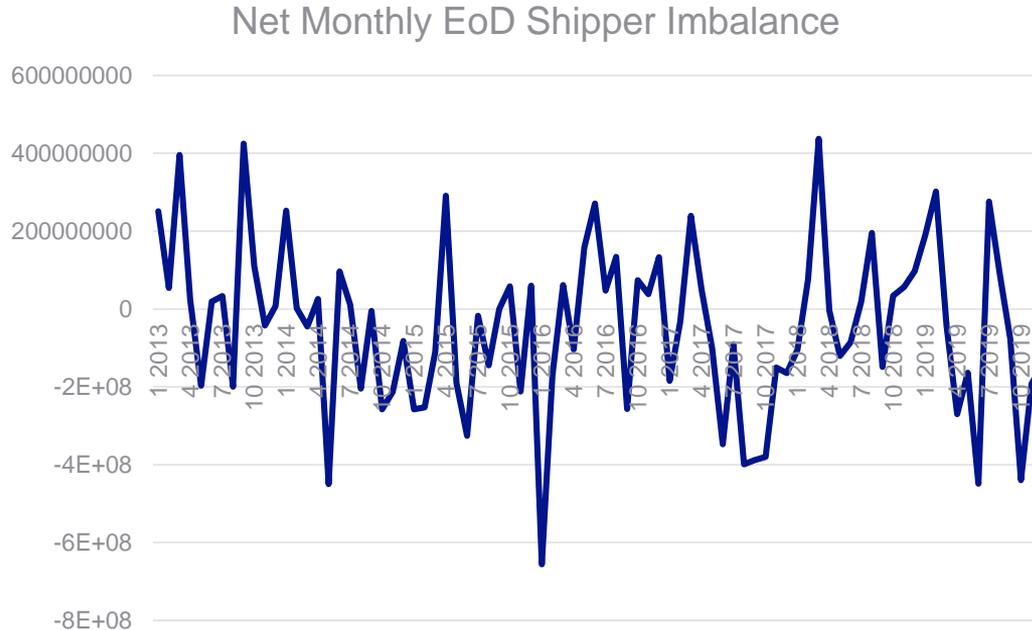
EoD Imbalance data

- End of Day shipper balance has trended upwards in recent years.



EoD Imbalance data

- End of Day net shipper balance has remained at a similar level over the course of the RIIO T-1 period.



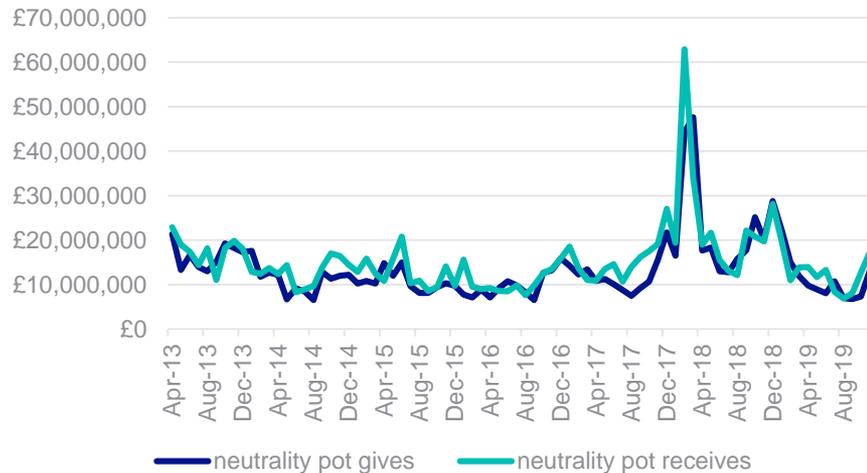
Question

Question over what the neutrality impact is on all shippers from balancing activities relating to imbalance.

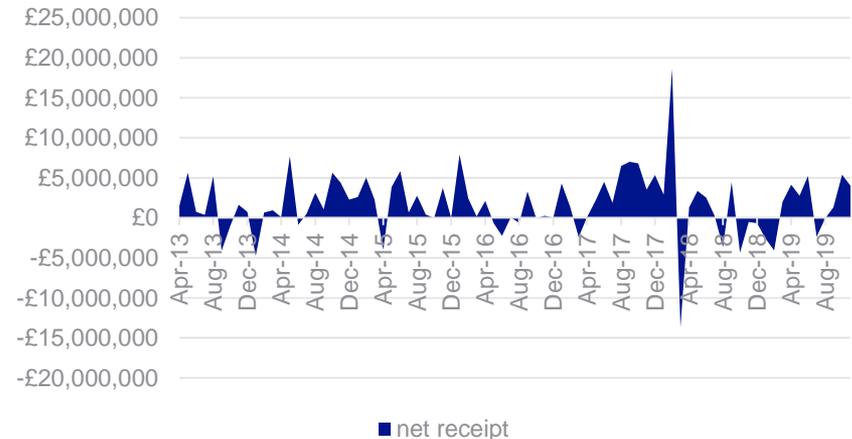
Imbalance Neutrality data

- **monthly costs/revenues for imbalance charges**
- Slight increase in recent years – both absolute level and volatility
- high correlation between ‘light’ and ‘heavy’ neutrality cash flow across time – except for Mar 18 – means net impact remains suppressed.

imbalance monthly neutrality flows



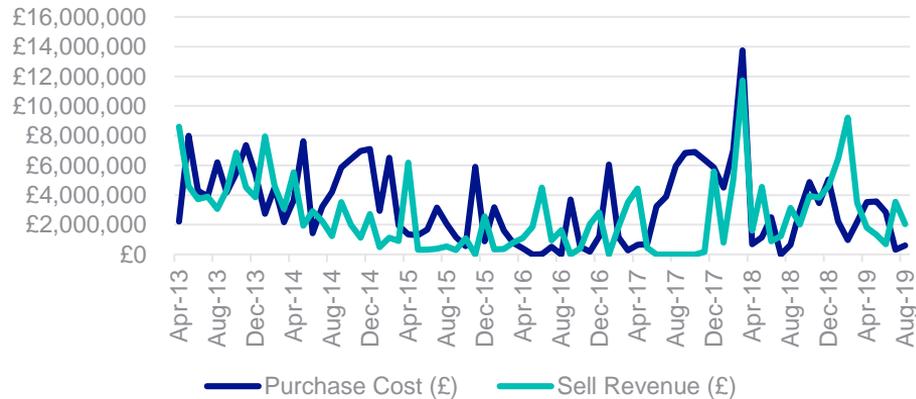
imbalance monthly net neutrality flows



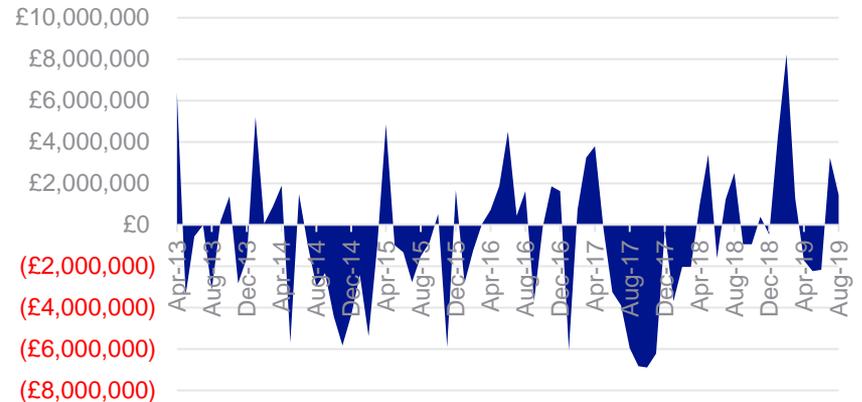
NG trade Neutrality data

- **monthly costs/revenues from NG buy/sell activity**
- revenues and costs tend to balance out over time.

NG Balancing Monthly £ Costs/Revenues



Net monthly £ flow to neutrality from NG trades



Question

Question over possibility of updating the capacity part of the methodology

Capacity component of methodology

- **Capacity component is derived by dividing NG allowed revenue by the peak demand day (x365) for a given year**
- A simplification for the UNC would be to have a single way to calculate the unit price for capacity. This could be achieved by simply referring to the Postage Stamp price (assuming PS implementation).
- The table opposite shows SMP default adjustments across RIIO T1, broken down into the compressor and capacity elements. It also shows some estimate for PS capacity costs for comparison in the later years.

Gas Year	compressor fuel cost / total system demand	average NTS capacity cost	defaultSMP adjustment
2013/14	0.00457	0.02487	0.0294
2014/15	0.00432	0.02924	0.0336
2015/16	0.00350	0.03436	0.0379
2016/17	0.00340	0.03627	0.0397
2017/18	0.00642	0.03880	0.0452
2018/19	0.00592	0.03177	0.0377
2019/20	0.00445	0.03083	0.0353
PS estimates			
2018/19	0.00592	0.0394	0.0453
2019/20	0.00445	0.0384	0.0429
2020/21	0.00445	0.0411	0.0456
2021/22	0.00445	0.0399	0.0444

roll forward last confirmed year



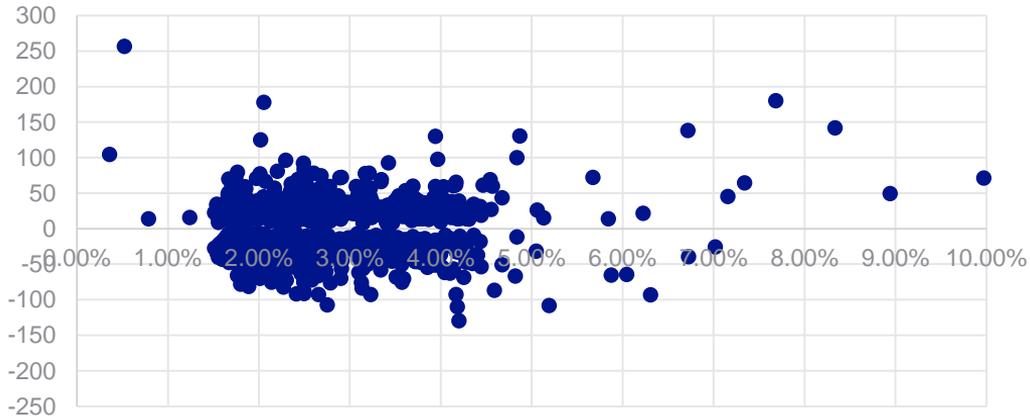
Question

Question over likelihood of market response to a different level of cash out

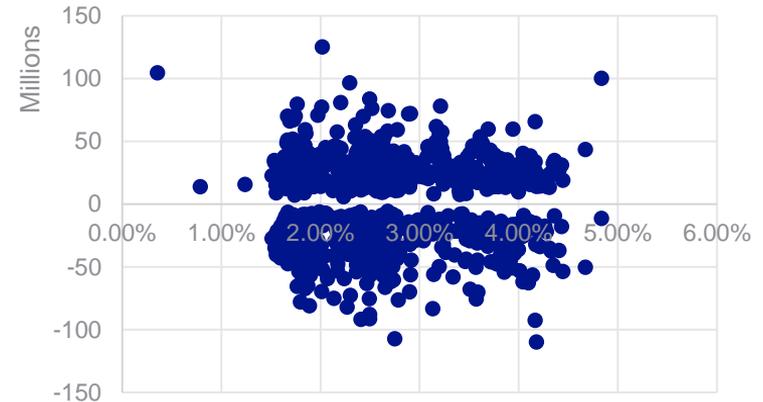
incentive to balance vs daily shipper EoD Imbalance

- How does EoD shipper imbalance vary as the incentive to balance (%) changes day to day
- Data shows slight but limited correlation

System Marginal Price adjustment as % of SAP
vs EoD imbalance (GWh/d) Jan 18 - Sep 19

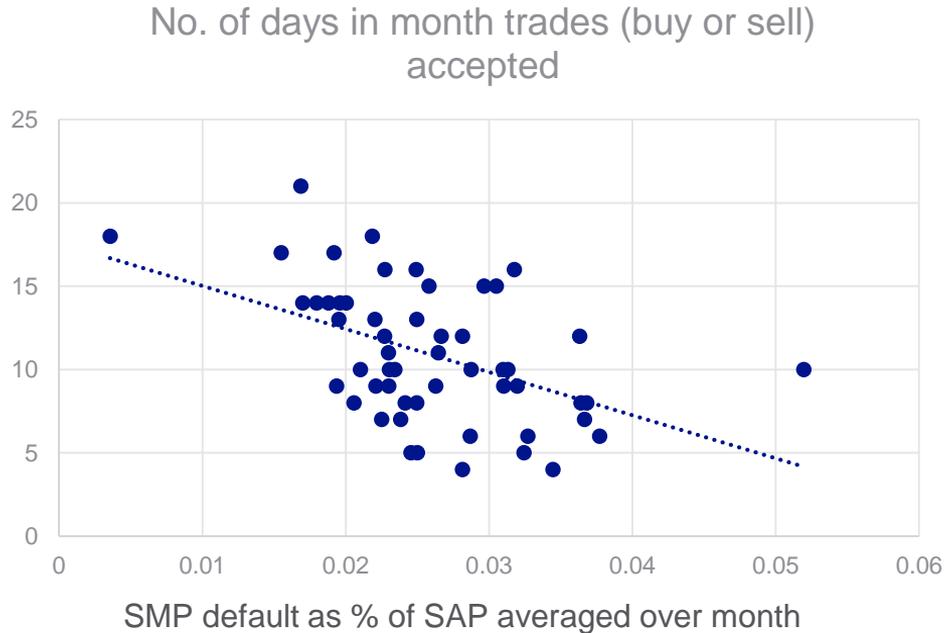


default SMP days only (zoomed in)



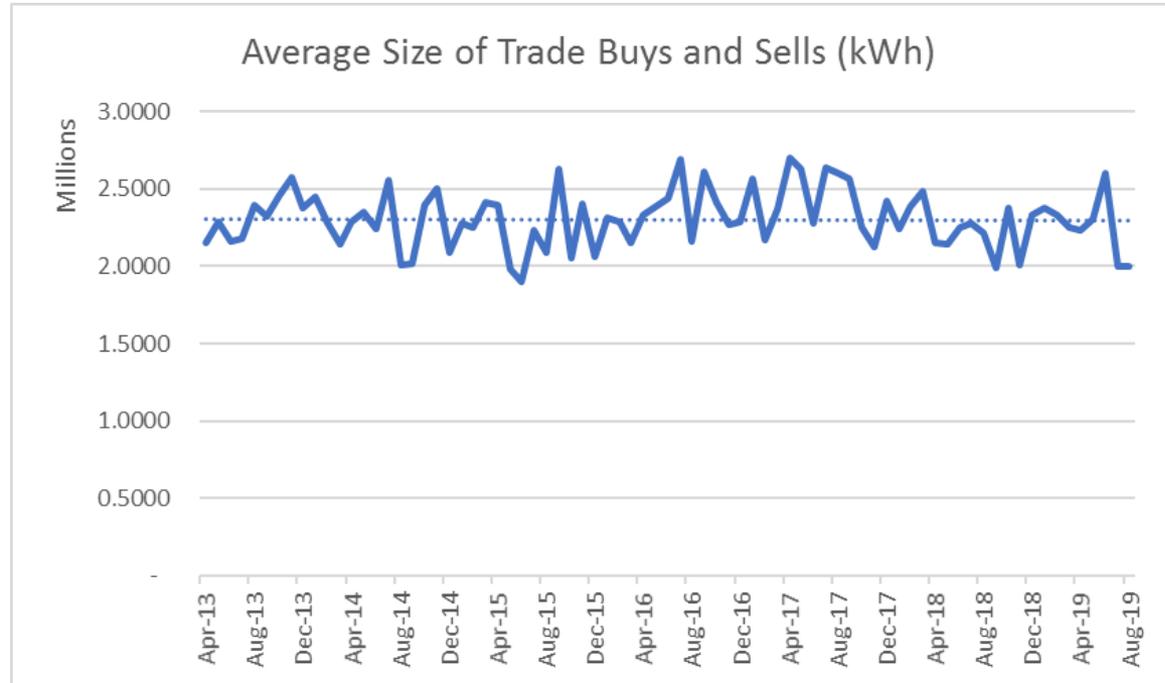
Incentive to balance vs NG trade frequency

- How does NG trade frequency vary as the incentive to balance (%) changes day to day
- Clearer correlation here



Average trade size

There was a query about whether NG was entering the market more often but with smaller sized trades. The average size of trades has remained fairly constant over the course of RIIO-T1



Question

Question over whether it was possible to characterise the out of balance shippers

top 10 imbalanced shippers – further info

The top 10 shippers are varied and should not be considered as a homogenised group:

- **9 are suppliers (5 significant); 1 is not.**
- 3 are supply only (smaller ones)
- **7 supply power station or industrial or both.**
- **Vary in size by measure of throughput (input)**
 - < 100,000 GWh/year – 4
 - 100,000 – 250,000 GWh/year – 3
 - > 250,000 GWh/year – 3
- **wide range of supply from beech/Norway as well as LNG, storage, interconnector & NBP.**

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