



**Views of the Proposer of 0678A – Analysis and comparison between “0678A Postage Stamp Reference Price Methodology” and “0678CWD Reference Price Methodology”**

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### 1. Introduction

- 1.1. The analysis in this note is based on the National Grid “Sensitivity Tool” (the Model) that was published on the Joint Office 0678 modification website on 25<sup>th</sup> February 2019<sup>1</sup>. This model enables a comparison between the Original 0678 Modification which includes the GB implementation of a “Capacity Weighted Distance” Reference Price Methodology (RPM) as envisaged under the TAR Network Code<sup>2</sup> and the Postage Stamp RPM as envisaged under RWE UNC Modification proposal 0678A<sup>3</sup>.
- 1.2. It should be noted that the analysis relies on the data in the Model including the Forecasted Contracted Capacity (FCC) which has been calculated on the basis of a methodology that was outlined by National Grid as part of the 0678 discussions.
- 1.3. There may be limitations in the FCC data relating to the treatment of IPs and PARCAs. These limitations have not been addressed as part of this analysis. The model has not been subject to any detailed audit to ensure the integrity of the inputs or the outputs by the author of this paper.

### 2. Analysis

- 2.1. The 0678 CWD RPM will result in a set of entry and exit tariffs that vary by location according to the distance and capacity weightings based on the applied FCC methodology. Allowed revenue will be allocated to entry and exit points according to the distance and capacity weightings based on the applied FCC methodology. These nodal tariffs are then applied to the assumed capacity at each entry and exit point to derive the revenue recovery for each entry and exit points.
- 2.2. The 0678 Postage Stamp RPM will result in a set of entry and exit tariffs that do not vary by location. Allowed revenue will be allocated to entry and exit points according to capacity weightings based on the applied FCC methodology. These nodal tariffs are then applied to the assumed capacity at each entry and exit point to derive the revenue recovery for each entry and exit points
- 2.3. This focus of this analysis relates to revenue recovery. This is because the RPM in GB is primarily concerned with the recovery of historic sunk costs. The RPM combines both revenue recovery charges and forward-looking signals are combined into a single

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<sup>1</sup> The Sensitivity Tool can be found at <http://www.gasgovernance.co.uk/index.php/0678/Models>

<sup>2</sup> The TAR Network Code (Commission Regulation (EU) 2017/460 of 16 March 2017 establishing a network code on harmonised transmission tariff structures for gas) can be found at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R0460>

<sup>3</sup> The relevant modifications can be found at <http://www.gasgovernance.co.uk/index.php/0678>

capacity-based charge. This reflects the observation by Ofgem in the 0621 Decision Letter that

*“Given low levels of anticipated new investment in gas network capacity in the near term, we anticipate this type of capacity charge would serve a predominantly revenue recovery function. We also note that in this context, the value of forward-looking signals is likely to be of lesser importance”.*

### Entry Capacity

- 2.4. The overall recovery of revenue under the 0678 CWD RPM from entry capacity nodal tariffs is presented in Table 1. This is based on the categories of entry points identified in the Model for the 2019/20 Gas Year.

**Table 1: 0678CWD Calculated Entry Capacity Revenue**

	Calculated Entry Capacity Revenue (Based on Booking Scenario) (£) for 01-Oct-2019 to 30-Sep-2020
STORAGE SITE	£3,898,377.16
INTERCONNECTION POINT	£14,460,725.94
BEACH TERMINAL	£260,685,355.58
ONSHORE FIELD	£2,111,966.13
LNG IMPORTATION TERMINAL	£18,462.91
<i>Existing Contracts (all sites)</i>	£56,648,302.88

- 2.5. The overall recovery of revenue under the 0678A Postage Stamp nodal tariffs is presented in Table2. This is for the categories of entry points identified in the Model for the 2019/20 Gas Year.

**Table 2: 0678A Postage Stamp Calculated Entry Capacity Revenue**

	Calculated Entry Capacity Revenue (Based on Booking Scenario) (£) for 01-Oct-2019 to 30-Sep-2020
STORAGE SITE	£5,848,523.82
INTERCONNECTION POINT	£20,489,512.50
BEACH TERMINAL	£236,684,043.00
ONSHORE FIELD	£2,650,039.14
LNG IMPORTATION TERMINAL	£22,047.34
<i>Existing Contracts (all sites)</i>	£56,648,302.88

- 2.6. The 0678CWD RPM and the 0678A Postage stamp result in different distributions of revenue recovery across entry capacity. The differences between the two RPM's is

illustrated in Table 3, where a positive is an increase in revenue recovery for the Postage Stamp RPM and a negative is an decrease in revenue recovery for the postage Stamp RPM when compared with the 0678 CWD RPM for the category of entry capacity points.

**Table 3: Entry Capacity Difference between 0678CWD and 0678 Postage Stamp RPM**

	Difference between 0678CWD and 0678A Postage Stamp
STORAGE SITE	£1,950,146.66
INTERCONNECTION POINT	£6,028,786.57
BEACH TERMINAL	-£24,001,312.57
ONSHORE FIELD	£538,073.02
LNG IMPORTATION TERMINAL	£3,584.43

- 2.7. The data in Table 3 indicates that the biggest decrease in revenue recovery under the 0678A Postage Stamp RPM is at beach terminal entry points, whereas the biggest increase is at interconnection entry points.

#### Exit Capacity

- 2.8. The overall recovery of revenue under the 0678 CWD RPM from exit capacity nodal tariffs is presented in Table 4. This is based on the categories of entry points identified in the model for the 2019/20 Gas Year.

**Table 4: 0678 CWD Calculated Exit Capacity Revenue**

	0678 CWD Calculated Exit Capacity Revenue (Based on Booking Scenario) (£) for 01-Oct-2019 to 30-Sep-2020
GDN (EA)	£15,677,450.97
GDN (EM)	£17,103,337.35
GDN (NE)	£12,214,409.78
GDN (NO)	£14,476,144.51
GDN (NT)	£20,341,641.31
GDN (NW)	£25,869,466.57
GDN (SC)	£27,721,558.61
GDN (SE)	£29,480,847.31
GDN (SO)	£21,212,123.66
GDN (SW)	£16,575,352.02
GDN (WM)	£15,135,745.44
GDN (WN)	£2,689,538.51
GDN (WS)	£12,633,405.68
POWER STATION	£64,751,320.23
STORAGE SITE	£10,404,638.93
INTERCONNECTOR	£21,080,924.25
INDUSTRIAL	£10,455,285.44

- 2.9. The overall recovery of revenue from the 0678A Postage Stamp RPM from entry capacity nodal tariffs is presented in Table 5. This is for the categories of exit points identified in the Model for the 2019/20 Gas Year.

**Table 5: 0678A Postage Stamp Calculated Exit Capacity Revenue**

	<b>0678A Postage Stamp Calculated Exit Capacity Revenue (Based on Booking Scenario) (£) for 01-Oct-2019 to 30-Sep-2020</b>
GDN (EA)	£17,289,333.04
GDN (EM)	£21,716,588.67
GDN (NE)	£15,316,407.72
GDN (NO)	£14,442,147.58
GDN (NT)	£21,510,774.00
GDN (NW)	£25,936,756.86
GDN (SC)	£20,588,683.95
GDN (SE)	£26,513,938.93
GDN (SO)	£18,939,379.74
GDN (SW)	£13,742,780.29
GDN (WM)	£18,004,009.03
GDN (WN)	£2,741,801.47
GDN (WS)	£11,522,110.61
POWER STATION	£61,529,827.35
STORAGE SITE	£12,987,742.10
INTERCONNECTOR	£21,174,490.21
INDUSTRIAL	£11,128,139.52

- 2.10. The 0678CWD RPM and the 0678A Postage stamp result in different distributions of revenue recovery across exit capacity. The differences between the two RPM's is illustrated in Table 3, where a positive is an increase in revenue recovery for the Postage Stamp RPM and a negative is an decrease in revenue recovery for the postage Stamp RPM when compared with the 0678 CWD RPM

**Table 6: Exit Capacity Difference between 0678CWD and 0678 Postage Stamp RPM**

	Comparison between 0678 CWD and 0678A Postage Stamp Calculated Exit Capacity Revenue (Based on Booking Scenario) (£) for 01-Oct-2019 to 30-Sep-2020
GDN (EA)	£1,611,882.07
GDN (EM)	£4,613,251.32
GDN (NE)	£3,101,997.93
GDN (NO)	-£33,996.94
GDN (NT)	£1,169,132.68
GDN (NW)	£67,290.28
GDN (SC)	-£7,132,874.66
GDN (SE)	-£2,966,908.38
GDN (SO)	-£2,272,743.92
GDN (SW)	-£2,832,571.73
GDN (WM)	£2,868,263.59
GDN (WN)	£52,262.95
GDN (WS)	-£1,111,295.07
POWER STATION	-£3,221,492.88
STORAGE SITE	£2,583,103.17
INTERCONNECTOR	£93,565.95
INDUSTRIAL	£672,854.08

2.11. The data in Table 6 indicates that the biggest decrease in revenue recovery under the 0678A Postage Stamp RPM is at GDN (SC), whereas the biggest increase is at when GDN (EM) compared with the 0678 CWD RPM.

### 3. Analysis of Specific Entry Points

- 3.1. This section considers the differences in revenue recovery between the 0678 CWD RPM and the 0678A Postage Stamp RPM for specific entry points in GB.
- 3.2. Under the 0678A postage stamp RPM entry points in southern and eastern GB will see an increase in revenue recovery when compared with the 0678 CWD RPM (Table 7)

**Table 7: Top Ten increases in revenue recovery under the 0678A Postage Stamp RPM when compared with the 0678 CWD RPM**

Entry Point	Entry Point Type	Forecasted Contracted Capacity (CAP_En) kWh/d	0678 CWD Calculated Capacity Revenue (Based on FCC) (£)	0678A Postage Stamp Calculated Capacity Revenue (Based on FCC) (£)	Difference between 0678 CWD to 0678A Postage Stamp
Bacton UKCS	BEACH TERMINAL	674,940,457	41,150,651.47	61,241,613.93	20,090,962.46
Easington	BEACH TERMINAL	923,976,213	19,244,994.30	30,713,604.77	11,468,610.48
Teesside	BEACH TERMINAL	349,329,734	28,470,656.59	37,588,138.15	9,117,481.56
Bacton IP	INTERCONNECTION POINT	242,349,238	14,459,971.21	21,519,755.90	7,059,784.68
Theddlethorpe	BEACH TERMINAL	43,243,984	2,964,577.13	4,870,354.43	1,905,777.30
Hornsea	STORAGE SITE	108,866,575	2,589,817.72	4,178,016.37	1,588,198.65
Barrow	BEACH TERMINAL	83,866,774	4,510,787.27	5,457,090.35	946,303.08
Burton Point	ONSHORE FIELD	31,388,848	2,111,338.62	2,782,685.80	671,347.18
Cheshire	STORAGE SITE	541,245,000	1,308,559.44	1,964,819.12	656,259.68
Isle of Grain	LNG IMPORTATION TERMINAL	643,612,054	18,462.91	23,156.81	4,693.90

- 3.3. The most significant decrease in revenue recovery under the 0678A Postage Stamp RMP will be at St Fergus when compared with the 0678 CWD RPM (Table 8).

**Table 8: St Fergus decrease in revenue recovery under the 0678A Postage Stamp RPM when compared with the 0678 CWD RPM**

Entry Point	Entry Point Type	Forecasted Contracted Capacity (CAP_En) kWh/d	0678 CWD Calculated Capacity Revenue (Based on FCC) (£)	0678A Postage Stamp Calculated Capacity Revenue (Based on FCC) (£)	Difference between 0678 CWD to 0678A Postage Stamp
St Fergus	BEACH TERMINAL	845,897,745	164,343,688.82	108,723,746.83	- 55,619,941.99

#### 4. Analysis of Specific Exit Points

- 4.1. This section considers the differences in revenue recovery between the 0678 CWD RPM and the 0678A Postage Stamp RPM for specific exit points in GB.
- 4.2. The top ten increases in revenue recovery under the 0678A Postage Stamp RPM when compared with the 0678 CWD RPM at exit points are illustrated in Table 9.

**Table 9 Top Ten increase in revenue recovery under the 0678A Postage Stamp RPM when compared with the 0678 CWD RPM at exit points**

Exit Points	Exit Point Type	Forecasting Contracted Capacity (CAP_Ex) kWh/d	0678 CWD Calculated Capacity Revenue (Based on Anticipated Booking Scenario) (£)	0678A Postage Stamp Revenue from anticipated Capacity Booked (£)	Difference between 0678 CWD and 0678A Postage Stamp Revenue from anticipated Capacity Booked (£)
Garton Max Refill (Aldbrough)	STORAGE SITE	297,863,945	6,574,025.36	8,594,706	2,020,681
Thornton Curtis (DN)	GDN (EM)	87,239,382	3,912,055.37	5,306,516	1,394,461
Bacton (IUK)	INTERCONNECTOR	169,936,801	8,487,267.67	9,823,668	1,336,400
Pannal	GDN (NE)	109,972,894	5,489,764.57	6,689,329	1,199,564
Thornton Curtis (Humber Refin)	INDUSTRIAL	61,309,589	2,703,986.27	3,667,828	963,842
Tur Langton	GDN (EM)	67,037,105	3,273,823.53	4,077,671	803,847
Rosehill (Saltend Power Station)	POWER STATION	52,918,411	2,288,298.14	3,084,697	796,399
Blyborough	GDN (EM)	51,154,606	2,385,890.95	3,111,585	725,694
Peters Green South Mimms	GDN (NT)	150,909,388	8,454,532.12	9,179,376	724,844
Alrewas (WM)	GDN (WM)	66,313,928	3,343,117.43	4,033,682	690,565

- 4.3. The top ten decreases in revenue at exit under the 0678A Postage Stamp RPM when compared with the 0678 CWD RPM at exit points are illustrated in Table 10

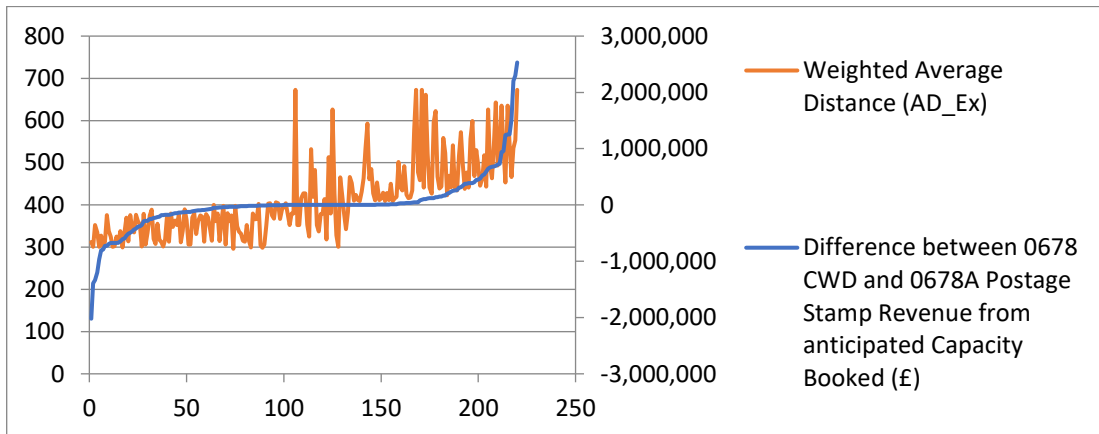
**Table 10 Top Ten decreases in revenue recovery under the 0678A Postage Stamp RPM when compared with the 0678 CWD RPM at exit points**

Exit Points	Exit Point Type	Forecasting Contracted Capacity (CAP_Ex) kWh/d	0678 CWD Calculated Capacity Revenue (Based on Anticipated Booking Scenario) (£)	0678A Postage Stamp Revenue from anticipated Capacity Booked (£)	Difference between 0678 CWD and 0678A Postage Stamp Revenue from anticipated Capacity Booked (£)
St. Fergus (Peterhead)	POWER STATION	67,045,010	6,439,857.94	3,908,159	-2,531,699
Pembroke Power Station	POWER STATION	110,906,301	8,763,492.67	6,464,902	-2,298,591
Glenmavis	GDN (SC)	117,368,830	9,343,051.97	7,139,202	-2,203,850
Tatsfield	GDN (SE)	176,401,993	12,248,860.39	10,730,016	-1,518,844
Drum	GDN (SC)	61,270,041	4,978,546.78	3,726,877	-1,251,670
Lyneham (Choakford)	GDN (SW)	36,987,650	3,500,372.09	2,249,850	-1,250,522
Moffat (Irish Interconnector)	INTERCONNECTOR	196,354,612	12,593,656.58	11,350,822	-1,242,834
Broxburn	GDN (SC)	51,473,110	4,089,091.25	3,130,958	-958,133
Lanage Power Station	POWER STATION	29,015,890	2,631,492.88	1,691,382	-940,111
Gowkhall (Longannet)	POWER STATION	39,640,767	3,041,577.75	2,310,722	-730,855

4.4. The differences between 0678 CWD RPM and the 0678A Postage Stamp RPM is illustrated in Figure 1 for each exit point. This provides further information on the fact that the greatest positive differences (i.e. reduced revenue recovery) are at peripheral locations on the NTS while the greatest negative differences (i.e. increase in revenue recovery) are at more central locations on the NTS).

**Figure 1: Differences between 0678 CWD and 0678A Postage Stamp RPM) by exit point**

- Weighted average distance is the left hand axis in km
- Absolute difference between 0678 CWD and 0678A Postage Stamp is the right hand axis in £
- The x-axis is the exit point

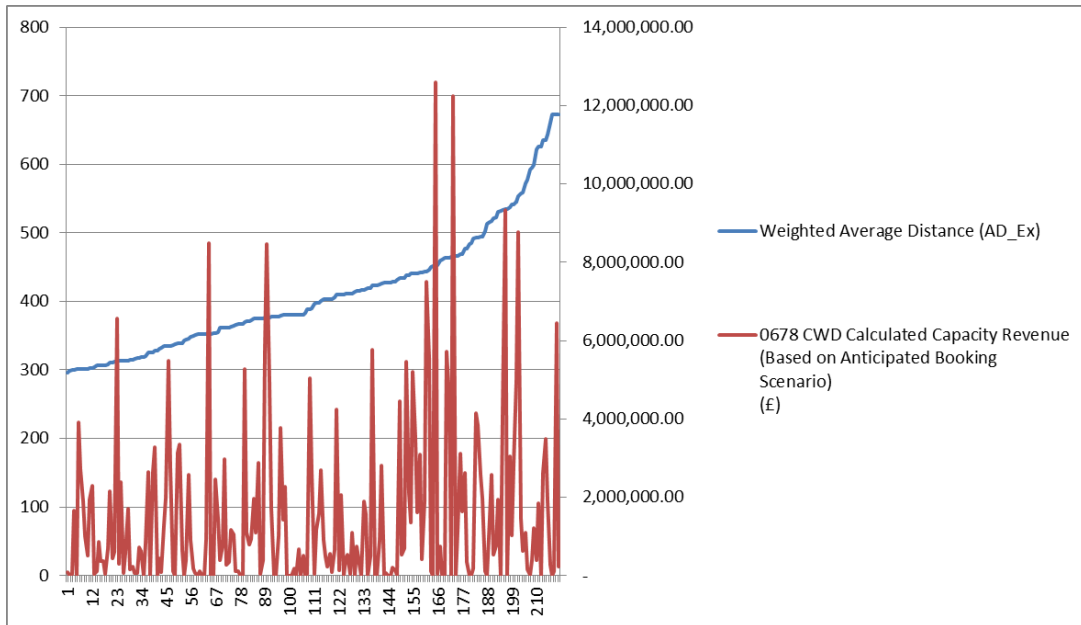


4.5. The information in Figure 1 illustrates the fact that the exit points with the highest distance tend to have the highest difference in revenue recovery when 0678CWD is compared with the 0678A Postage Stamp RPM. However, it should be noted that there are a large number of exit points where the relationship between the revenue recovery and distance is difficult to determine. Figure 2 explores this issue further in relation to the 0678 CWD RPM.



**Figure 2: Revenue recovery and Distance under the 0678 CWD RPM for exit points**

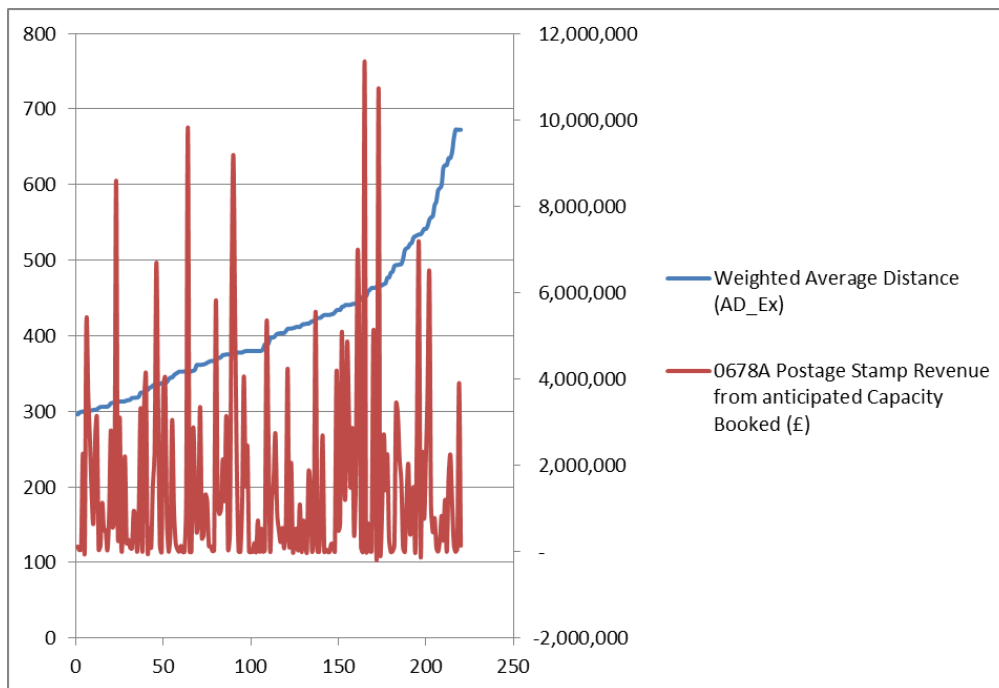
- Weighted average distance is the left hand axis in km
- The revenue recovery by exit point under 0678 CWD is the right hand axis in £
- The x-axis is the exit point



- 4.6. If distance is a “cost driver” in relation to network investment or operation, then it would be expected that there would be a strong relationship between distance and revenue recovery under the 0678 CWD Model. However, the information in Figure 2 does not demonstrate that this is the case. Indeed there appear to be a number of exit points with low distance and high revenue recovery and a number of exit points with long distance and low revenue recovery. This may reflect lower capacity weightings under the FCC, but it is difficult to detect relationship between revenue recovery and distance under 0678 CWD RPM.
- 4.7. For the purpose of comparison Figure 3 presents the revenue recovery and distance data under the 0678A Postage Stamp RPM. Note that 0678A Postage Stamp RPM does not include distance as a cost driver. It will recover historic sunk costs associated with allowed transmission service revenue by allocating revenue according to the FCC of each exit point.

**Figure 3: Revenue recovery and Distance under the 0678 Postage Stamp RPM for exit points**

- Weighted average distance is the left hand axis in km
- The revenue recovery by exit point under 0678 Postage Stamp RPM is the right hand axis in £
- The x-axis is the exit point



## 5. Summary

- 5.1. This paper has considered the potential difference in revenue recovery across different categories of user and for specific entry and exit points that occur through the application of the 0678A Postage stamp RPM when compared with the 0678 CWD RPM (the GB counterfactual).
- 5.2. It should be noted that the removal of “distance” as a weighting factor has the effect of reducing revenue recovery from entry and exit points that are at the periphery of the NTS. This is consistent with the observations expressed in the Ofgem 0621 decision letter<sup>4</sup> which noted that:
  - “*distance-based allocation of revenue recovery charges (i.e. CWD methodology and variants on CWD) would attribute a greater proportion of network costs to points on the network associated with longer average distances to other points on the network. Our current view is that there are several potential weaknesses with using distance as a factor for setting the reference price*”.

<sup>4</sup> See <https://gasgov-mst-files.s3.eu-west-1.amazonaws.com/s3fs-public/ggf/page/2018-12/Ofgem%20Decision%20Letter%200621.pdf>



## Annex 1: Some thoughts on Cost Recovery associated with 0678A Postage Stamp RPM

The 0678A Modification proposal sets out that the postage stamp approach is not designed to reflect current and future expectations related to investment in or the “use” or operation of the NTS and does not seek to influence NTS investment or its use or operation (driven through market behaviour).

In developing a postage stamp approach the following Ofgem views are relevant<sup>5</sup>

- *“cost-reflectivity is more relevant to forward-looking charges than revenue recovery charges”;*
- *“the following principles are relevant for assessing revenue recovery charges: i) reducing harmful distortions, ii) fairness to end consumers and iii) proportionality and practical considerations”*
- *“In making a decision on gas network charges, we will keep these principles in mind, taking account of differences in gas and electricity charging and systems”;*
- *The RPM methodology “has the effect of combining both revenue recovery charges and forward-looking signals into a single capacity-based charge. Given low levels of anticipated new investment in gas network capacity in the near term, we anticipate this type of capacity charge would serve a predominantly revenue recovery function. We also note that in this context, the value of forward-looking signals is likely to be of lesser importance”.*
- *“Only a limited proportion of the costs of a meshed network are directly attributable to particular points, and therefore a substantial proportion of NGGT’s revenue requirement cannot be unambiguously attributed to individual entry and exit points.”*
- *“distance-based allocation of revenue recovery charges (i.e. CWD methodology and variants on CWD) would attribute a greater proportion of network costs to points on the network associated with longer average distances to other points on the network. Our current view is that there are several potential weaknesses with using distance as a factor for setting the reference price:*
  - *Setting higher charges to those bringing gas onto and taking gas off the system at points which are located further away would increase incentives on those users to reduce their usage of the network, for which there are unlikely to be any short to medium term associated cost savings.*
  - *The distances used in the CWD methodologies are typically averaged across all points for the purposes of setting prices, and the actual costs of a particular entry*

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<sup>5</sup> See <https://gasgov-mst-files.s3.eu-west-1.amazonaws.com/s3fs-public/ggf/page/2018-12/Ofgem%20Decision%20Letter%200621.pdf>

*point to a particular exit point might not be “real” (i.e. such physical flows may never occur). Shippers book entry and exit capacity independently and nominate flows without specifying specific routes and therefore it is very difficult to allocate flows to specific assets. This type of treatment of distance is therefore unlikely to generate prices that are accurately cost-reflective of the physical transportation routes actually used. Although as we consider the charges resulting from the RPMs to be largely functioning as revenue recovery charges, cost-reflectivity is less relevant in any case.*

- *Using distance in setting transmission entry and exit charges would mean those consumers who are located in more remote locations would pay higher transmission charges for entry and exit (other things being equal). This may not be considered a fair outcome as those consumers are not driving significant additional costs from their use of a shared network that is already built and that has spare capacity available.”*
- *“Incentives for a party to choose a particular location to benefit from lower transmission charges are likely to be lower under all proposals compared to the status quo, but higher under the CWD options compared to the PS option, which has no locational incentives”*

The Compliance Statement for 0678A it was noted that distance is not a “cost driver” for GB transmission services where these relate to historic sunk costs. The TAR Network Code arrangements combine both revenue recovery and locational signals in a single capacity based charging methodology. If a methodology was purely designed to produce locational signals then these should be included in cost reflective locational tariffs that relate to the marginal costs of investment in the transmission network. It is clear that is not envisaged for the TAR Reference Price Methodology which relates to “cost drivers” rather than “cost reflective tariffs”.

Under the postage stamp approach it seem relevant that there is no basis for “correlating” historical sunk costs of the transmission system operator with distance. 0678A notes that “*there are several potential weaknesses with using distance as a factor for setting the reference price*” (Ofgem decision letter UNC0621<sup>6</sup>). These include potential for

- distortive locational signals;
- that the simple “distance” in the methodology does not reflect “real” flows on the gas network; and
- outcomes of a reference price methodology using distance may not be “fair” particularly in relation to users in more remote locations pay higher charges but do not drive significant additional costs from their use of a shared network that is already built and that has spare capacity (as set out in UNC0621 decision letter)

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<sup>6</sup> Ofgem decision letter on Modification Proposal UNC0621 can be found at: <https://gasgov-mst-files.s3.eu-west-1.amazonaws.com/s3fs-public/ggf/page/2018-12/Ofgem%20Decision%20Letter%200621.pdf>