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# RESPONSE TO MAY 2022 CONSULTATION ON SMNCC ALLOWANCES

Prepared on behalf of British Gas

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## EXECUTIVE SUMMARY

Ofgem has consulted on its choice of inflation measure to use in the SMNCC model. Ofgem is proposing to continue to measure inflation using the GDP deflator and is planning to update the specific estimates and forecasts it has used to a set that dates from July 2021.

Ofgem is proposing to use an increasingly inappropriate inflation measure, the GDP deflator, to update the inflation data in the SMNCC model. Ofgem should instead update the inflation measure in the model to the Consumer Price Index (including owner occupiers' housing costs), known as "CPIH". There are three key reasons for this:

- The reliability of the GDP deflator has been negatively impacted due to the effects of the pandemic. This is because of problems that have emerged in how to measure the output of the public sector. CPIH has not been adversely affected in this way by the pandemic.
- In any case, given the SMNCC model's purpose, CPIH is the more appropriate inflation measure, compared to the GDP deflator. The GDP deflator tracks changes in a far broader set of prices, than CPIH, including many that are not relevant to the smart meter rollout.
- Using CPIH would remove a historical inconsistency with the rest of the default tariff price cap, which uses CPIH to measure inflation.

Switching the SMNCC model to use the most up-to-date CPIH data would result in the SMNCC allowances shown in Table 1.

### TABLE 1 SMNCC ALLOWANCES WHEN INFLATION IS MEASURED USING CPIH

| | CAP 9 | CAP 10 | CAP 11 |
|---|---|---|---|
| Electricity – Credit | £10.72 | £11.11 | £11.11 |
| Gas - Credit | -£0.69 | -£0.77 | -£0.77 |
| Electricity – PPM | -£5.35 | -£6.37 | -£6.37 |
| Gas – PPM | -£24.09 | -£27.07 | -£27.07 |

*Source: Frontier Economics*

*Note: PPM allowances are before PPM offset. Analysis based on using the ONS's L522 data series (CPIH Index) last updated by the ONS on 13 April 2022 as the inflation measure for 2006 to 2021 and the OBR's forward-looking forecasts for CPI.*

We cannot see any valid argument in favour of continuing to use the GDP deflator, when the more appropriate CPIH data are readily available. However, regardless of the inflation measure used in the SMNCC model, Ofgem must consult primary data sources (i.e. the ONS and OBR) directly, and not rely on outdated figures from the Green Book. There is no objective benefit to relying on an irregularly updated secondary source which is one year out of date. If Ofgem continues using outdated inflation data, it risks introducing material errors into the SMNCC model, particularly in light of the current high inflation rate environment.[1]

[1] The impact of this change on the SMNCC, after correcting the error discussed in Section 4, is presented on Table 3 on page 10.

# 1 INTRODUCTION

British Gas has commissioned Frontier Economics to review Ofgem's May 2022 consultation on the Smart Metering Net Cost Change allowance (SMNCC allowance) in the default tariff cap (for Winter 2022 onwards), and in particular Ofgem's treatment of inflation. This report is the outcome of our study, and is informed by our analysis of the SMNCC model and the supporting data that Ofgem has disclosed to us, and the SMNCC consultation document.

As part of the consultation, Ofgem proposes to continue to use the GDP deflator but to update the inflation measure used in the SMNCC model and the supporting data to those published in July 2021 (from those previously published in April 2019).

We believe that Ofgem's decision to continue to use the GDP deflator is wrong and it should instead use the CPIH measure as it is a more relevant and more reliable measure of inflation. Ofgem should also use the most up-to-date inflation data (regardless of the specific inflation measure used).

The structure of this report is as follows:

- Section 2 explains why Ofgem should use CPIH rather than the GDP deflator in the SMNCC model; and
- Section 3 discusses the importance of using up-to-date inflation data.

# 2 OFGEM SHOULD USE CPIH RATHER THAN THE GDP DEFLATOR TO MEASURE INFLATION

There are different approaches to measuring inflation, including tracking changes in the GDP deflator, the CPIH or other price indices. Both the GDP deflator and CPIH are price indices. They measure the level of 'prices' in an economy at a point in time. Changes in the GDP deflator and CPIH over time are both measures of inflation.

Different inflation measures are better suited to different purposes, and the reliability of some inflation measures has been adversely impacted due to the pandemic. In this section we explain why it is more appropriate for the SMNCC model to measure inflation using CPIH rather than the GDP deflator.

## 2.1 DUE TO THE PANDEMIC, THE GDP DEFLATOR IS NO LONGER FIT FOR PURPOSE

The effects of the pandemic have reduced the reliability of the GDP deflator such that it is no longer fit for purpose as a measure of inflation within the SMNCC model. There are two main reasons for this.

First, the GDP deflator is derived from GDP estimates where GDP is the value of the economy's output. It can be recorded using either:

- the value of goods and services produced in current prices (i.e. 'nominal' GDP); or
- the volume of goods and services produced (i.e. 'real' GDP).

The GDP deflator is calculated as nominal GDP divided by real GDP. Changes in the GDP deflator over time indicate changes in the price level over time (i.e. inflation).

GDP includes goods and services produced by the government (such as defence, education and healthcare). As such, the GDP deflator reflects changes in the 'price' of these services, even though they are not bought or sold in a market, and no one faces a price when benefiting from them.

The pandemic had very different impacts on nominal public sector GDP and real public sector GDP.

- The pandemic led to an increase in government spending, and thus public sector nominal GDP.
- The pandemic also significantly reduced the volume of public sector output (particularly in the health and education sectors). A&E attendance fell, and there were fewer elective care 'episodes', and fewer general practice consultations. Schoolchildren spent fewer days in school. Since public sector real GDP is calculated using volume measures, the pandemic meant a large fall in public sector real GDP.

The increase in public sector nominal GDP combined with the decrease in public sector real GDP results in inflation in the 'implied price' of public sector output. This raises the overall level of inflation measured by the GDP deflator, even though no one in the economy faces these higher prices. The Office for Budget Responsibility describes *"whole economy inflation (as measured by the GDP deflator)"* as *"erratic"* and *"driven by the statistical treatment of public sector output"*.[2] CPIH is calculated on a different basis that means it is not impacted by this issue.

Second, the pandemic has changed the nature of government outputs, causing the Office for National Statistics (ONS) to consider how to adjust how it measures the output of the public sector.

Schooling offers a good example of complications caused. According to the ONS, *"the closure of schools renders [the ONS's] 'usual' annual data on the number of children at school inaccurate."*[3] Furthermore, pandemic resulted in an expansion of remote learning which is not covered by the ONS's existing conceptual framework. For the ONS, *"this poses questions about whether learning at home 'counts' to the same extent as a student attending in person."*[4] The result of these complications is that it will take time for the ONS to refine how it calculates the volume of public sector output. This in turn means it will be more likely that there will be more substantial revisions to GDP estimates, causing significant revisions to the GDP deflator. This would make the GDP deflator a more unreliable measure of inflation.

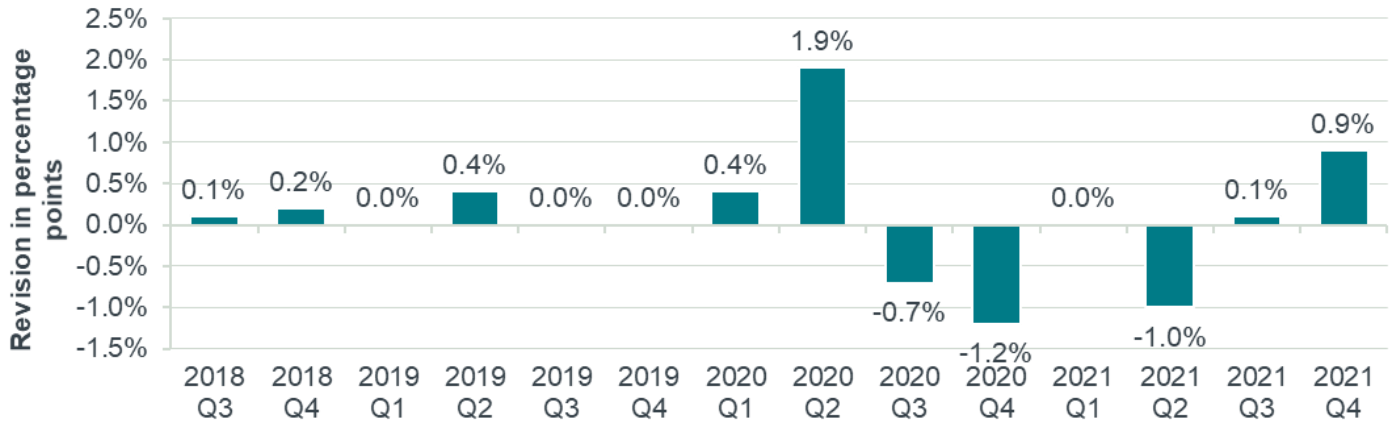
This is not just a conceptual argument: there is already empirical evidence that the GDP deflator is subject to greater uncertainty. Table 0 below shows how the ONS has revised recent estimates of the GDP deflator between its initial estimate and its estimate one month later. The figure shows that the size of the revisions increased significantly following the pandemic. Since the pandemic began, GDP deflator estimates have been revised by as much as 1.9 percentage points within one month of publication.

[2] OBR (2020) Economic and fiscal outlook – November 2020, paragraph 1.27. https://obr.uk//docs/dlm_uploads/CCS1020397650-001_OBR-November2020-EFO-v2-Web-accessible.pdf

[3] ONS (2020) Coronavirus and the impact on measures of UK government education output. Accessed 20 May 2022. https://www.ons.gov.uk/economy/grossdomesticproductgdp/articles/coronavirusandtheimpactonmeasuresofukgovernmenteducationoutput/2020-05-13

[4] ONS (2020) Coronavirus and the impact on measures of UK government education output. Accessed 20 May 2022. https://www.ons.gov.uk/economy/grossdomesticproductgdp/articles/coronavirusandtheimpactonmeasuresofukgovernmenteducationoutput/2020-05-13

## FIGURE 1: RECENT REVISIONS TO GDP DEFLATOR ESTIMATES MADE BY THE ONS




*Source: Frontier Economics analysis of ONS GDP deflator revision triangles (Quarter 4 (Oct to Dec) 2021, quarterly national accounts edition)*

*Note: This graph shows the change in the GDP implied deflator (YBGB) quarter-on-quarter a year ago growth between the 'Month 2 estimate' and the 'Month 3 estimate'.*

While the GDP deflator estimates for 2020 and 2021 are likely to be subject to significant ongoing revisions, CPIH on the other hand will not. Because CPIH is calculated using market prices, which can be assessed easily using surveys, it is much less likely that CPIH estimates will need to be revised. CPIH estimates have been retrospectively revised only twice since 2013.[5] This provides another important justification for using CPIH instead of the GDP deflator.

### 2.2 THE GDP DEFLATOR REFLECTS CHANGES IN PRICES THAT ARE NOT RELEVANT TO SMNCC ALLOWANCE

When an inflation measure is used for analytical purposes, the choice of measure is not trivial. This is because the price indices underlying different inflation measures track different prices in the economy, and also put different emphasis on each of the individual prices they track.

Therefore, it is necessary to properly consider which inflation measure to use. This process should involve two assessments:

1 Determining the purpose of using the inflation measure; and

2 Determining the most appropriate inflation measure for that purpose.

Regarding the first point, the SMNCC model uses data and assumptions on the costs and benefits of the smart meter rollout expressed in nominal (i.e. non-inflation adjusted) amounts across several years. Using nominal inputs from different points in time makes it necessary to use an inflation measure to convert the inputs into real inputs (to strip out inflation). Furthermore, because the final SMNCC allowance is specified in nominal terms, an inflation measure is further used to convert the SMNCC allowance calculations from real terms into a nominal result.

Given this purpose, the ideal inflation measure, theoretically, is a bespoke inflation measure which measures changes in only the prices involved in the smart meter rollout (on both the cost and benefit

[5] ONS (2017) Revisions policy for consumer price inflation statistics. Accessed 20 May 2022. https://www.ons.gov.uk/economy/inflationandpriceindices/articles/revisionspolicyforconsumerpriceinflationstatistics/2017-03-21

side). This is because changes in any other price in the economy is not relevant. It is, however, unrealistic to construct this ideal inflation measure, so we must choose the most suitable measure from those that are available.

### 2.2.1 ASSESSMENT OF THE SUITABILITY OF THE GDP DEFLATOR

The GDP deflator tracks changes in a very broad set of prices. It measures:

- the price of goods and services purchased by households;
- the 'implied price' of goods and services provided by the government (e.g. the 'price' of a GP consultation implied by dividing the number of GP consultations delivered in a period by government expenditure on General Practice, or the 'price' of schooling implied by dividing the total number of hours spent in school by pupils divided by government expenditure on schools);
- the price of investment goods; and
- the price of UK exports, net of the price of UK imports.

In short, the GDP deflator tracks the prices of all domestically produced goods and services. A significant proportion of prices tracked by the GDP deflator are not relevant to the smart meter rollout: the 'implied price' of government provided services (such as national defence, education and healthcare) and the price of UK exports. These prices are not relevant as the rollout of smart meters does not involve or impact these areas of the economy.

The use of the GDP deflator in the SMNCC model is not motivated by its relevance or suitability. Rather, the SMNCC model's usage of the GDP deflator is an historical artefact explained by the model's history. The SMNCC model evolved from a BEIS smart meter rollout model that was used for a social cost benefit analysis. The GDP deflator is an appropriate inflation measure for that type of analysis, because of the focus on 'whole economy' net impacts. However, the GDP deflator's suitability for the model's previous purpose is not a valid reason to continue using it, particularly given the estimation issues caused by the pandemic.

### 2.2.2 ASSESSMENT OF THE SUITABILITY OF CPIH

CPIH is a 'market based' inflation measure. It reflects the market prices of goods and services purchased by households. It does not measure the 'implied price' of government provided services nor the price of UK exports. Although households and energy suppliers will purchase different goods and services from each other, there will be a closer correspondence between the prices faced by energy suppliers and UK households than between the prices faced by energy suppliers and the agglomeration of UK households, purchasers of UK exports, and the hypothetical purchaser of UK government provided goods and services. As a market based inflation measure, CPIH is therefore a closer approximation of a bespoke SMNCC inflation measure than the GDP deflator.

Ofgem recognises the appropriateness of CPIH for use as an inflation measure for energy industry price and revenue controls:

- Ofgem already uses CPIH to index operating costs in the default tariff price cap.[6] Energy suppliers' broader operating cost base is similar to the cost base being adjusted in the SMNCC model. As Ofgem considers CPIH is relevant for indexing energy suppliers' non-smart meter operating costs, then it should use CPIH to index the SMNCC allowance (which is, in essence, a subset of energy suppliers' operating costs, netted off against some benefits).
- Ofgem uses CPIH in RIIO-2 price controls, and used the Retail Price Index (RPI) in RIIO-1. RPI is another 'market based' inflation measure and is more similar to CPIH than it is to the GDP deflator.

Switching the SMNCC model to use the most up-to-date CPIH data would result in the SMNCC allowances shown in Table 2.

### TABLE 2 SMNCC ALLOWANCES WHEN INFLATION IS MEASURED USING CPIH

| | CAP 9 | CAP 10 | CAP 11 |
|---|---|---|---|
| Electricity – Credit | £10.72 | £11.11 | £11.11 |
| Gas - Credit | -£0.69 | -£0.77 | -£0.77 |
| Electricity – PPM | -£5.35 | -£6.37 | -£6.37 |
| Gas – PPM | -£24.09 | -£27.07 | -£27.07 |

*Source: Frontier Economics*

*Note: PPM allowances are before PPM offset. Analysis based on using the ONS's L522 data series (CPIH Index) last updated by the ONS on 13 April 2022 as the inflation measure for 2006 to 2021 and the OBR's forward-looking forecasts for CPI.*

## 3 OFGEM SHOULD UPDATE THE SMNCC MODEL TO USE THE MOST UP-TO-DATE INFLATION DATA AVAILABLE

Ofgem's decision to update the inflation data in the SMNCC model reflects an intention to maximise the accuracy of, and minimise the uncertainty in, the SMNCC allowances. However, to achieve that aim, Ofgem should use the most up-to-date inflation data in the SMNCC model, and not use already outdated data.

The SMNCC model currently relies on inflation data in the HM Treasury's Green Book supplementary guidance. The model previously used a version published in April 2019. The May 2022 consultation proposes using the values contained within the July 2021 edition. However, the Green Book is a secondary source: it reproduces the ONS's inflation estimates, and the OBR's inflation forecasts. Since the Green Book data is updated irregularly and infrequently compared to the underlying ONS and OBR sources, it therefore provides outdated inflation data. This means that the SMNCC model currently relies on outdated inflation forecasts for 2021, 2022 and 2023.

The SMNCC model's reliance on the Green Book is a consequence of the model's history. The SMNCC model was originally authored by BEIS as part of a social cost benefit analysis, where BEIS would

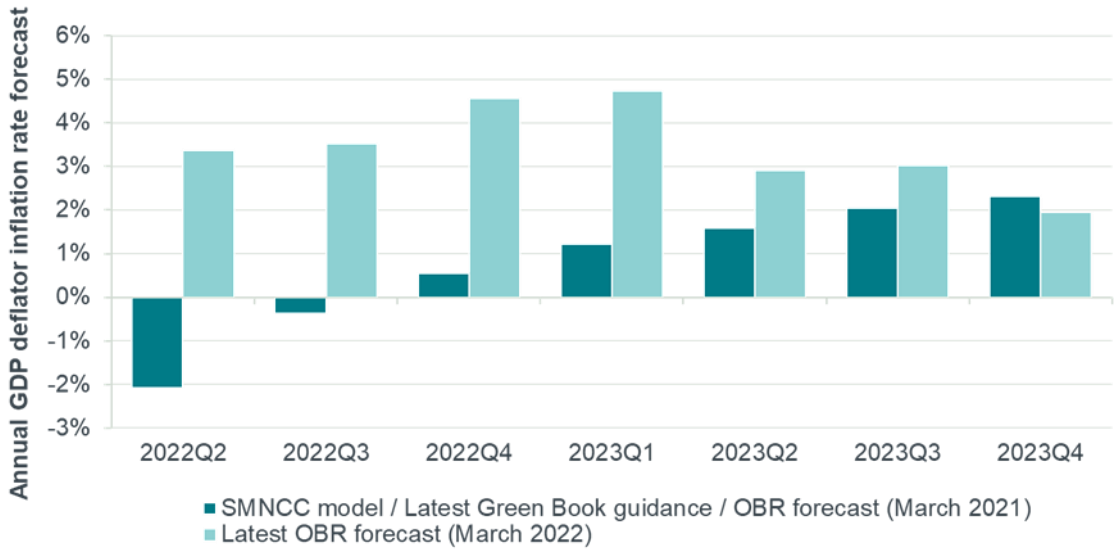
[6] Ofgem (2018) Default Tariff Cap: Decision. Appendix 6 – Operating costs, paragraph 2.32. https://www.ofgem.gov.uk/sites/default/files/docs/2018/11/appendix_6_-_operating_costs.pdf

have been required to use the Green Book. Ofgem is not bound by this requirement and can instead use the primary sources that inform the Green Book.

Using up-to-date inflation data has always been desirable. However, it is now critical given that the UK economy is experiencing high inflation rates. A consequence of high inflation rates is that inflation forecasts can become outdated quickly. For example, the Bank of England's forecasts of inflation over 2022 have approximately doubled between November 2021 and May 2022.

Table 0 shows the annual inflation rate, based on the GDP deflator, over 2022 and 2023 according to the OBR's most recent forecast (from March 2022) and the OBR forecast used in the SMNCC model (from March 2021). Compared to the GDP deflator forecasts used in the SMNCC model, the OBR's revised forecasts are between one percentage point and five percentage points higher between 2022 Q2 and 2023 Q2.

**FIGURE 2: GDP DEFLATOR FORECASTS IN THE SMNCC MODEL COMPARED TO UP-TO-DATE FORECASTS**




*Source: Frontier Economics analysis of the OBR's Economic and fiscal outlook – March 2022 and the OBR's Economic and fiscal outlook – March 2021.*

A second reason to use up-to-date inflation data is that it would no longer be necessary to use forecasts of inflation in 2021. Estimates of outturn inflation in 2021 are available. We would expect estimates of outturn inflation to more closely resemble the 'true' inflation rate than forward looking forecasts.

We believe that the use of the values from the Green Book is just an historic anomaly given that Ofgem uses up-to-date CPIH data when indexing the operating costs element of the default tariff price cap: "*To reflect the changes in efficient operating costs that we expect to take place over time, we update the operating costs component of the default tariff cap using the most recent value of CPIH (ie the Consumer Prices Index, including owner occupiers' housing costs), as observed prior to the level*

*of the cap being set.*"[7] If Ofgem adopt CPIH in the SMNCC model, as we are suggesting, then it can follow its own precedent in this regard.

The case for using CPIH, rather than the GDP deflator, is strong. But the case for using the most up-to-date inflation data remains true regardless of the inflation measure used. For illustrative purposes, Table 3 shows the impact of applying the most up-to-date data on the SMNCC allowances if Ofgem were to (in our view inappropriately) continue using the GDP deflator.

## TABLE 3 SMNCC ALLOWANCES WHEN LATEST GDP DEFLATOR DATA IS USED

| | CAP 9 | CAP 10 | CAP 11 |
|---|---|---|---|
| Electricity – Credit | £10.34 | £10.72 | £10.72 |
| Gas - Credit | -£0.82 | -£0.90 | -£0.90 |
| Electricity – PPM | -£5.30 | -£6.30 | -£6.30 |
| Gas – PPM | -£23.65 | -£26.56 | -£26.56 |

*Source: Frontier Economics*
*Note: PPM allowances are before PPM offset. SMNCC allowances are shown after correcting the error discussed in Section 3.1.*

We also have practical concerns about Ofgem's rationale for continuing to 'indirectly' use ONS and OBR GDP deflator data (via the Green Book supplementary guidance). Ofgem's reasoning is that:

- although today's version of the Green Book supplementary guidance does not include the most up-to-date ONS and OBR data, "subsequent updates" to the Green Book will incorporate the most up-to-date ONS and OBR data at the time of its publication; and
- the advanced payments calculation in the SMNCC model will allow future SMNCC allowances to account for the impact of revising the inflation data in the model.

It is unclear whether this reasoning is compatible with the framework Ofgem have adopted for advanced payments. The SMNCC model accommodates advanced payments up and until the October 2023 – December 2023 cap period. In effect, Ofgem have defined the window by which adjustments will need to be made.

The last opportunity to use the advanced payments calculation to account for updates to the SMNCC model's inflation data will be when setting the October – December 2023 SMNCC allowance. Therefore, if Ofgem continues to depend on the Green Book supplementary guidance, it will only be able to include updates to the inflation data, under the current SMNCC methodology, if the Green Book supplementary guidance is updated in time.

Our assessment is that it is an unsafe for Ofgem to assume that the Green Book supplementary guidance will be updated before it decides the SMNCC allowance for the last quarter of 2023.

[7] Ofgem (2018) Default Tariff Cap: Decision. Appendix 6 — Operating costs, paragraph 2.32.

The specific Green Book supplementary guidance document that Ofgem uses for inflation data is the accompany spreadsheet for 'Green Book supplementary guidance: valuation of energy use and greenhouse gas emissions for appraisal'. This is a document produced by BEIS. We are not aware of any obligation on BEIS to update this document. Furthermore, in the future, BEIS may elect to only update selected parts of the supplementary guidance, and the inflation data may fall outside the scope of the update.

Furthermore, the length of time that elapsed between the most recent updates (29 months, April 2019 to July 2021) indicates that the next update may not be made before the final SMNCC allowance is decided. If the duration between the last two updates is projected forward, then the next update to the Green Book supplementary guidance will be October 2023. This will almost certainly be too late to be factored into the final SMNCC allowance.

In contrast, there is much more certainty around when the ONS will publish upcoming inflation estimates. The ONS has already scheduled the dates and times it will publish inflation estimates for the remaining months of 2022 and 2023. This further supplements the case for using the most appropriate and up-to-date data that is fit for purpose.

## 3.1 OFGEM'S IMPLEMENTATION OF ITS INFLATION UPDATE CONTAINS AN ERROR

Ofgem has decided to update the SMNCC model with GDP deflator from the July 2021 Green Book supplementary guidance. To implement this update correctly, Ofgem would need to identify all instances of inflation input data in the SMNCC model (and the supporting disclosed data spreadsheets) and enter the new data.

However, our review of the disclosed materials suggests that the SMNCC model, and supporting spreadsheets, have not been properly updated to use the data from the 2021 Green Book supplementary guidance.

The issue concerns the SMNCC supporting spreadsheet that calculates productive installation and sunk installation costs in 2020.[8] This spreadsheet continues to use the GDP deflator data from the 2019 Green Book guidance whereas the SMNCC model, and other supporting spreadsheets, use the updated source. This makes the SMNCC model internally inconsistent. We note that updating the model for this error alone would reduce the value of SMNCC.

While it is appropriate to correct a clear error in the SMNCC model to achieve internal consistency, it would not be sufficient for Ofgem to stop at fixing the error. As this report has shown, there is an overwhelming case for measuring inflation using the most up-to-date CPIH data (rather than outdated GDP deflator data).

[8] The specific sheet impacted is '2020 Installation costs - May 2022 consultation disclosure.xlsx'.

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