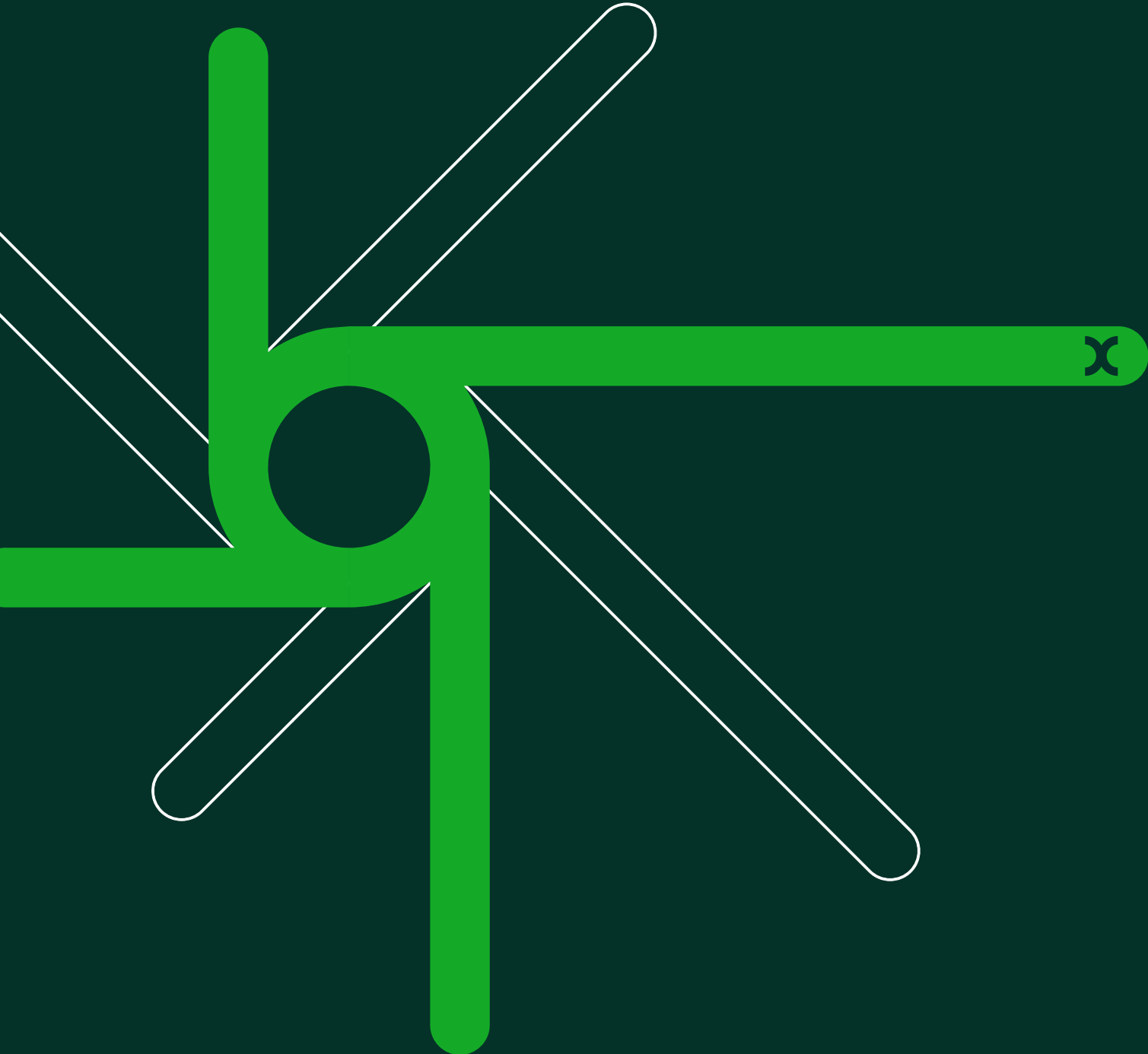


RAB indexation: the *deflatore* adjustment



Prepared for ARERA

October 2023



# Contents

1	Introduction	1
2	Some considerations on the <i>deflatore</i>	4
3	How could the <i>deflatore</i> adjustment be calculated?	5
4	Conclusions	7

Oxera Consulting LLP is a limited liability partnership registered in England no. OC392464, registered office: Park Central, 40/41 Park End Street, Oxford OX1 1JD, UK; in Belgium, no. 0651 990 151, branch office: Avenue Louise 81, 1050 Brussels, Belgium; and in Italy, REA no. RM - 1530473, branch office: Via delle Quattro Fontane 15, 00184 Rome, Italy. Oxera Consulting (France) LLP, a French branch, registered office: 60 Avenue Charles de Gaulle, CS 60016, 92573 Neuilly-sur-Seine, France and registered in Nanterre, RCS no. 844 900 407 00025. Oxera Consulting (Netherlands) LLP, a Dutch branch, registered office: Strawinskylaan 3051, 1077 ZX Amsterdam, The Netherlands and registered in Amsterdam, KvK no. 72446218. Oxera Consulting GmbH is registered in Germany, no. HRB 148781 B (Local Court of Charlottenburg), registered office: Rahel-Hirsch-Straße 10, Berlin 10557, Germany.

Although every effort has been made to ensure the accuracy of the material and the integrity of the analysis presented herein, Oxera accepts no liability for any actions taken on the basis of its contents.

No Oxera entity is either authorised or regulated by any Financial Authority or Regulation within any of the countries within which it operates or provides services. Anyone considering a specific investment should consult their own broker or other investment adviser. Oxera accepts no liability for any specific investment decision, which must be at the investor's own risk.

© Oxera 2023. All rights reserved. Except for the quotation of short passages for the purposes of criticism or review, no part may be used or reproduced without permission.

# 1 Introduction

In August 2023, ARERA published a consultation document (381/2023/R/com) discussing the criteria for the implementation of the new ROSS-base regulation for the gas transport, electricity transmission and electricity distribution services. As anticipated in the previous '*Testo integrato della regolazione per obiettivi di spesa e di servizio*' (TIROSS) publication,<sup>1</sup> one of the topics covered in the consultation was the possibility to introduce an adjustment methodology in the indexation of the Regulatory Asset Base (RAB) to ensure that no over-/under-compensation would arise in the transition from the current regulatory model to the ROSS-base model.

The RAB indexation mechanism is a pivotal component in the oversight of regulated utilities within infrastructural sectors such as energy and water. The RAB represents the assessed value of a utility's assets, inclusive of infrastructure investments. Through inflation indexation, regulatory authorities systematically recalibrate the RAB to counteract the erosive impact of inflation. In the specific case of Italian energy networks, the parameter used to update the RAB for inflation is the gross fixed assets deflator (so-called '*deflatore degli investimenti fissi lordi*' or '*deflatore*').

We understand the current regime works as follows.

- Assets that enter into operation are added to the RAB with a one-year lag, i.e. assets entering into operation (so-called '*incrementi patrimoniali*') in  $t-1$  are added to the RAB in  $t$ .
- When assets are first added to the RAB, their historical cost is not updated for inflation between  $t-1$  and  $t$ .
- The *deflatore* used to revalue the RAB captures changes in inflation with a lag. This is because, for each regulated service, the *deflatore* is computed using the most up-to-date inflation data available at the time that tariffs are set—tariff approvals takes place in the year before the relevant 'tariff year'.<sup>2</sup>
- The RAB is then updated yearly using the *deflatore*. Note that, as we explain further below, because the *deflatore* captures

---

<sup>1</sup> ARERA (2023), '*Delibera 163/2023/R/com, Allegato – TIROSS e ROSS-BASE*', April, article 32.

<sup>2</sup> Tariff approvals take place by 31 May  $t-1$  for gas transport and by 15 December  $t-1$  for electricity transmission and distribution.

inflation with a lag, the RAB is not currently expressed in year  $t$  prices.

The *deflatore* is calculated as the average change in the inflation index in the last four quarters available at the time of the tariff approval, compared with the same quarters of the previous year. This approximately translates into a one-year lag for gas transport (GT) and a 0.75-year lag for electricity distribution (ED) and transmission (ET).<sup>3</sup>

For example, with specific reference to the 2023 tariff updates, the 'latest' assets (*incrementi patrimoniali*) added to the RAB are those that entered in operation in  $t-1$  (2022). The RAB is updated until '2022', with the *deflatore* defined as follows:

$$\text{Deflatore ET/ED}_{2023} = \frac{\text{Average}(\pi_{Q2(2021)}; \pi_{Q3(2021)}; \pi_{Q4(2021)}; \pi_{Q1(2022)})}{\text{Average}(\pi_{Q2(2020)}; \pi_{Q3(2020)}; \pi_{Q4(2020)}; \pi_{Q1(2021)})}$$

$$\text{Deflatore GT}_{2023} = \frac{\text{Average}(\pi_{Q1(2021)}; \pi_{Q2(2021)}; \pi_{Q3(2021)}; \pi_{Q4(2021)})}{\text{Average}(\pi_{Q1(2020)}; \pi_{Q2(2020)}; \pi_{Q3(2020)}; \pi_{Q4(2020)})}$$

The ET/ED formula above, for electricity transmission and electricity distribution, highlights how the 2023 tariff only partially reflects the average change of inflation (as measured by the *deflatore*) in 2022, while the GT formula for gas transport reflects the average change in inflation in 2021.

With the introduction of the new ROSS-base regime in 2024, the *deflatore* will be calculated with reference to outturn inflation data for a given year and will capture the average rate of change between  $t-1$  and  $t-2$  calendar years. For instance, for 2024 tariffs, the RAB will be updated until 2023 and hence it will be expressed in  $t-1$  prices. Therefore, the introduction of the ROSS-base will reduce the lag in the indexation of the RAB. This reduction means that during the transition from the current regulation to the ROSS-base regime a gap will emerge when going from the 2023 tariffs to the 2024 tariffs.

The TIROSS (decision 163/2023) recognises that changing how the *deflatore* is calculated might give rise to discrepancies and potentially lead to over-/under-compensations. In this context, ARERA has asked Oxera to comment on what could be an appropriate way to account for the gap in the *deflatore*. In the remainder of this note we focus our

---

<sup>3</sup> The lag in the ET and ED tariffs is from Q2 to Q4 of  $t-1$ , and hence three quarters (or nine months).

attention on the electricity transmission and distribution sectors, as they present, arguably, the more contentious and complex methodology and adjustment compared with gas transport.

## 2 Some considerations on the *deflatore*

As anticipated, for electricity transmission and distribution sectors, the current regulation defines the *deflatore* for a given tariff year  $t$  as:

$$Deflatore_t = \frac{Average(\pi_{Q2(t-2)}; \pi_{Q3(t-2)}; \pi_{Q4(t-2)}; \pi_{Q1(t-1)})}{Average(\pi_{Q2(t-3)}; \pi_{Q3(t-3)}; \pi_{Q4(t-3)}; \pi_{Q1(t-2)})}$$

Where:

- $\pi$  is the quarterly value of the inflation index;
- $Q$  is the quarter.

With the introduction of the ROSS-base framework, the *deflatore* for a given year  $t$  will be constructed looking at the average rate of change between the two previous calendar years:

$$Deflatore_t = \frac{\pi_{t-1}}{\pi_{t-2}} = \frac{Average(\pi_{Q1(t-1)}; \pi_{Q2(t-1)}; \pi_{Q3(t-1)}; \pi_{Q4(t-1)})}{Average(\pi_{Q1(t-2)}; \pi_{Q2(t-2)}; \pi_{Q3(t-2)}; \pi_{Q4(t-2)})}$$

We can see from the equations above that the difference between the two methodologies lies in the use of Q2–Q4 data for the year  $t-1$ . Therefore, to account for inflation in the transition between the two models, an adjustment should be made to consider Q2–Q4 of  $t-1$ . More specifically, in the context of setting the tariffs for 2024, the data from Q2 to Q4 2022 should be considered—i.e. the quarters that are not captured in the *deflatore* used for the 2023 tariff update.

To put it differently, the current *deflatore* updates the RAB value to Q1  $t-1$  and, with the introduction of the new ROSS regulation, the new *deflatore* will be designed so as to update the RAB value to Q4  $t-1$ . Hence, in the transition between the two regimes, the inflation between the end of Q1 and Q4 of  $t-1$  should be considered. Taking 2023 as an example, the inflation level in the nine-month period (from the end of Q1 to the end of Q4) of 2022 should be considered.

### 3 How could the *deflators* adjustment be calculated?

One way to calculate this inflation differential is to take the difference between the last datapoint used as part of the 2023 tariff update (Q1 of  $t-1$ ) and the most recent datapoint for 2022 (Q4 of  $t-1$ ):

$$\text{Deflators adjustment} = \frac{\pi_{Q4(t-1)}}{\pi_{Q1(t-1)}}$$

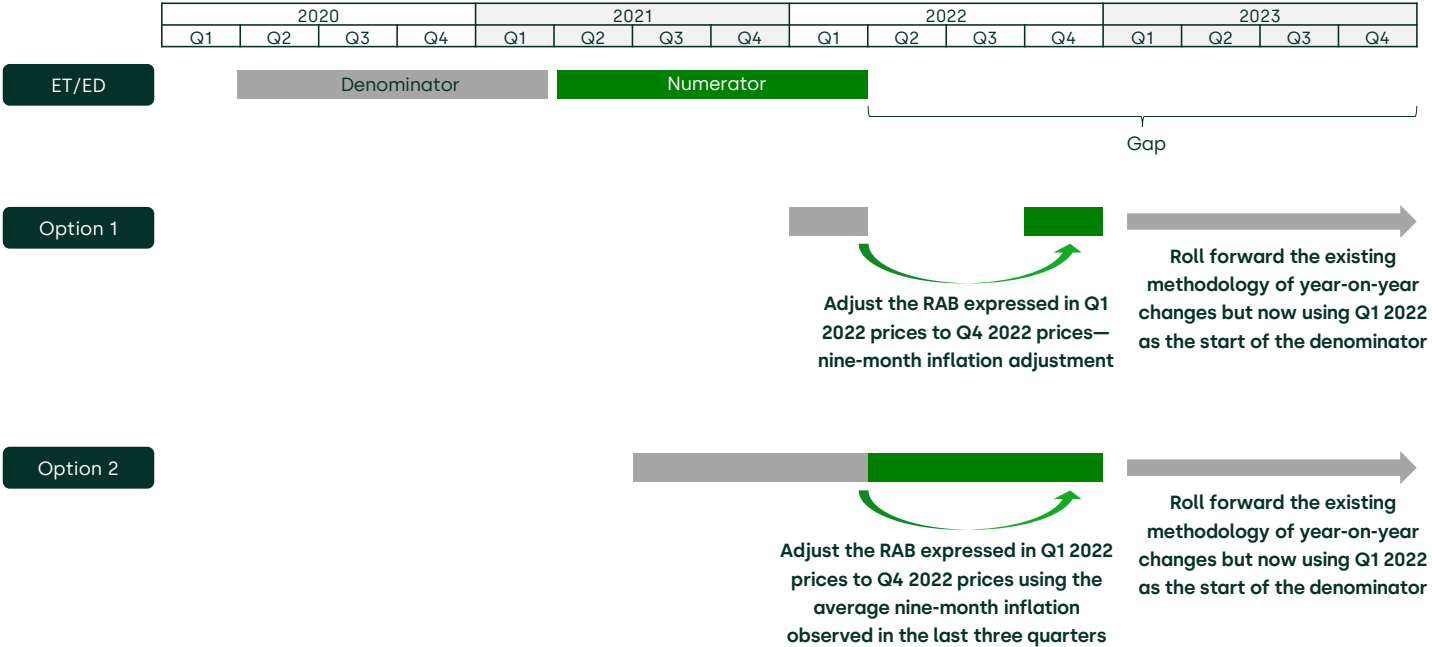
This methodology is straightforward to implement, and would ensure that the actual inflation between Q1 and Q4 of  $t-1$  is captured—including, by construction, Q2 and Q3 of  $t-1$ .

An alternative methodology is to estimate the average nine-month inflation over the last quarters of  $t-1$ :

$$\text{Deflators adjustment} = \frac{\text{Average}(\pi_{Q2(t-1)}; \pi_{Q3(t-1)}; \pi_{Q4(t-1)})}{\text{Average}(\pi_{Q3(t-2)}; \pi_{Q4(t-2)}; \pi_{Q1(t-1)})}$$

However, it is worth noting that this methodology does not reflect the actual inflation level between Q1 and Q4 of  $t-1$ . Rather, it would represent a proxy to estimate the actual inflation level, in line with how the current *deflators* is calculated. The two options are summarised in Figure 1 below.

Figure 1 Illustrative example of the *deflatore* adjustment for ET/ED



Source: Oxera.



## 4 Conclusions

As part of the latest tariff approvals for 2023, the RAB of all regulated energy networks has been updated using the *deflatore*, and expressed in 2021 prices for GT and on Q1 2022 prices for ET/ED. Hence, the current methodology used to calculate the *deflatore* (which differs between regulated services) reflects changes in inflation with a lag. While the current methodology does not create problems if 'extended in perpetuity', as the following/most recent quarters will be recovered in subsequent tariff years, but with a lag, this will create a gap when the ROSS-base framework is introduced.

In order to 'bridge' the inflation gap between the 2023 and 2024 tariffs, the *deflatore* should be adjusted to account for the missing quarters (from end of Q1 to end of Q4 2022 for ET/ED and Q1–Q4 2022 for GT). We outlined two options to adjust the *deflatore* to account for that when setting 2024 tariffs. In short, the two options consist of revaluating the RAB in a two steps process:

- first, the latest RAB value should be revalued to 31 December 2022 prices;
- second, the RAB in 31 December 2022 prices should then be revalued to 31 December 2023 prices.

Hence, the *deflatore* used in the first year of the ROSS-base regime will reflect a 1.75-year period for the ET and ED sectors, and a two-year period for the GT sector.



Contact

Leonardo Mautino  
Partner  
+44 (0) 1865 253036  
leonardo.mautino@oxera.com

[oxera.com](http://oxera.com)

