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Draft Final Assurance on SES Water's Tariff Model 2023-24

Dear Paul

NERA Economic Consulting (NERA) has been commissioned to review, and subsequently provide an assurance statement in relation to SES Water's tariff model, which will be used to set tariffs for the year from 1 April 2023. I led the team that performed this review, so any references to "we" below represent the independent opinions of me and the NERA project team engaged on this matter.

The purpose of this assurance letter is to provide you with a description of our scope of work, our approach to performing the model review, our preliminary findings, and the subsequent action taken by SES Water and the NERA project team. At the end of the letter, we also provide further advice on recommended next steps to further improve the quality of the model for use in future tariff periods.

Scope of Work

NERA's scope of work is outlined based on the following:

- Ensure that the calculations in the model are free of computational errors, and that they correctly feed from the relevant inputs;
- To make recommendations for improving the model structure to increase its efficiency and reduce risk of error;
- Ensure that the tariffs resulting from the model recover SES Water's allowed revenues, taking as given input assumptions to the model; and
- Ensure the model accords with the principles set out in Ofwat's Charges Scheme Rules, to the extent they are relevant to the modelling exercise at hand.

Therefore, for the avoidance of doubt, the following topics fall outside the scope of this assignment:

- We do not provide assurance on the calculation of the allowed revenue to be recovered from the 2023-24 water tariffs, as the calculations in the model are based on inputs from Ofwat's financial models and/or SESW's manipulated versions of these financial models, which we have not reviewed within the scope of this assignment;

- We do not provide assurance on the methodology and data underlying SES Water's forecasts of customer numbers and average consumption per customer. Instead, we have focused our review on ensuring that such assumptions feed correctly into the tariff model calculations and are internally consistent within the model; and
- We do not provide assurance on those sheets within the model that do not feed into the model calculations and are for internal use only (e.g. sheet "Revenue Impact Analysis" of the latest version of the model).

However, as set out below, to the extent our review of the model identified some scope for improvement in the above areas, we have flagged those to SES Water for future consideration.

Our Approach to Reviewing the Model

Following our discussion with the company, we understand that the intended "logic" for the calculations performed in the model is to calculate tariffs for 2023/24 across all customer types, using the previous year's tariffs as a starting point. It then takes data on the expected changes since last year in terms of customer numbers and consumption, the change in the company's revenue requirement, and thereby derives the percentage change in last year's tariffs necessary to recover the revenue requirement.

Additionally, to ensure that SES Water's 2023/24 tariff model is functioning correctly and in accordance with the intended logic, we have conducted a range of checks to ensure the calculations perform the intended calculations, including:

- Examining the logic of the modelling steps included in the model;
- Checking that inputs to the model enter the model correctly; and
- Reviewing formulas applied in the tariff model to identify any errors in the implementation of the tariff model; and
- Our scope of work did not include a detailed review of the allowed revenue calculation, so we cannot comment on the validity or plausibility of the allowed revenue figures used in tariff calculations.

Upon review of the first version of the model provided to us by SES Water on 5 September 2022 ("Tariff model 2023-24 v0.xlsx"), we provided an initial issues log, for discussion with SES Water. Our draft assurance letter provided to you on 22 September 2022 summarised the outcomes of such initial discussions, and our recommendations on next steps.

In response to our feedback, SES Water provided to us a revised version of the model on 16 November 2022 ("Tariff 2023-24 v3.xlsx") and an additional file ("NERA queries, response v2.xlsx) which included a response to each of the issues we had flagged. While this revised version had addressed the majority of our comments, there were a number of outstanding comments which we implemented directly into the model, following further discussions with SES Water.

Therefore, our final assurance findings are based on the last version of the model which incorporates our own edits and SESW's final adjustments to the model. We provided SESW with a model containing our edits on 19 December 2022 ("220119 Tariff model 2023-24 v4 with NERA edits - sent.xlsx"). This version also includes a detailed log of our changes in sheet "NERA – Change Log". Subsequently, SESW provided us with an updated model on 9 January 2023 ("221219 Tariff 2023-24 v7 (Excluded Leakage reward).xlsx"), which we checked for outstanding points and errors and used as the basis for this assurance letter.

Key Findings

Following the recommended edits and corrections to the model structure and calculations, we can confirm that the calculation of the increase in tariffs, draws from the intended inputs within the model, and it is structured correctly so that recovery of the target revenue is ensured under SES Water's forecast assumptions.

Based on the latest forecast assumptions from SES Water, the model forecasts the equivalent of a 14.4 per cent uniform increase in charges to recover allowed revenue. We note that this represents a c.6-percentage point decrease from the tariff increase used to set the initial charges in September 2022 (when SESW was forecasted the need for a c. 20 per cent increase). The two main drivers of this change are as follows:

- **The correction of the inflation indexation of allowed revenues**: in our September assurance letter we flagged some outstanding concerns with the method used to index allowed revenues for the estimation of tariffs for 2023/24, and the need to ensure that input assumptions such as inflation and allowed revenues were traceable within the model to minimise the scope for error. After SESW's modelling improvements since September, we were able to recheck the inflation adjustment and identify a double count of inflation, which impacted the allowed revenue figures used to estimate tariffs for 2023/24. See Appendix A for details on this error and suggestions for how to improve the assurance process going forward to avoid such errors recurring;
- **The removal of Developer Services (DS) under-recovery from allowed revenues recovered through HH and NHH charges:** SESW removed the under-recovery from DS from the estimation of allowed revenues in the version of the model we received in November. We understand that this under-recovery will instead be addressed in the update of DS charges later this quarter.

The need for tariff increases is largely driven by imbalances between allowed revenue and actual revenue in past years, causing an under-recovery in these years. This under-recovery has been driven by higher inflation than anticipated and a decrease in consumption volume.

Whilst part of this recovery may be deferred to later in the AMP, it is likely that the causes of under recovery will persist, as we understand from SES Water that there is uncertainty around when consumption volumes will return to pre-Covid levels and the latest macro-economic forecasts suggest that inflation will remain high.[1] Furthermore, if SES Water was

[1] The Office of Budget Responsibility (OBR) is forecasting inflation to remain high (at 7.4 per cent) in 2023. Source: OBR, Historical_official_forecasts_database_November_2022.xlsx, CPI sheet. Obtained from Data Office for Budget Responsibility website (obr.uk) on 15/12/2022

to defer its revenue recovery, this may put a significant burden on recovery in future years given the limited length of the control period. As such, it may be necessary to recover the full imbalance in the next year.

The 14.4 per cent uniform tariff increase itself is based on the following assumptions, which we have taken as given, as per our scope of work:

- A target total revenue of £72.3 million for the 2023-24 charging year, which includes water resources, water network plus (net of grants and contributions), household retail allowances, a penalty for a forecast error during the price control period and a full recovery of the under-recovered revenue for HH and NHH customers (excluding grants and contributions), all adjusted by the latest inflation data available;
- A forecast breakdown of household customer numbers by customer group, based on SES Water's assumptions on switches from unmeasured to measured customers, and an assumption that all expected new connections will be measured;
- A forecast average consumption per-household customer type based on available average historical data. We understand that this is based on SES Water's expectation that consumption for household customers over the period is forecast to match average monthly consumption from April 2020 to now scaled to an annual forecast estimate;
- An assumption that the number of non-household customers for 2023-24 will be equal to the average monthly number for the period April 2022 to October 2022, adjusted for a fall in vacancy rates; and
- An assumption that total non-household consumption for 2023-24 will return to pre-Covid levels.

Adherence with Ofwat Charges Scheme Rules

As part of our review, we have assessed the reasonableness of this modelling logic, and in particular whether it adheres to Ofwat's Charges Schemes Rules (as per our scope of work set out above). The table below lists the Ofwat rules that could potentially be relevant to this tariff-setting process, and assesses the adherence of the model with them.

Our assessment of SES Water's proposed tariff uplift is that it may not align with Ofwat's Charges Scheme Rules on cost reflectivity grounds. Criteria 12 to 15 detail the principles for determining the amounts of charges. For instance:

- Criterion 13 sets out that charging structures must reflect the long run costs of providing the relevant service; and
- Criteria 14 and 15 detail that differences in charges to metered and unmetered customers and to larger and smaller users of water respectively must be based only on differences in costs of, and additional benefits of, the provision of one service compared to the other.

As detailed in Table 1 below, in considering whether SES Water's tariff charges are cost-reflective, this requires a periodic review of the drivers of SES Water's costs, to what extent these vary with changes in consumption, and how different customer types affect SES

Water's costs differently. A uniform increase may violate the criteria on cost-reflectivity if such a cost review has not taken place for a number of years.

Table 1: Assessment of the Model Against Ofwat Criteria

Ofwat Criteria We Consider Relevant	Assessment of Model's Compliance with Criteria
Bill stability (Ofwat Criterion # 8)	▪ Given the effects of high inflation and low consumption, it is likely that bills may need to change by a larger percentage than normal to recover the revenue requirement. For example, we understand that, even if SES Water were to not recover its revenue imbalance from the previous year, bills would need to rise by more than the 5 per cent limit advocated by CCWater. ▪ After considering the recommendations set out above, it may be appropriate (and accord with this objective) for SES Water to consider mechanisms to limit bill volatility as much as is possible. However, given the need to recover the revenue requirement and the high inflation environment, in our view substantial tariff increases across all customer types are likely unavoidable.
Principles for determining the amounts of charges (Ofwat Criterion # 12 – 15)	▪ Ofwat requires that the charging structure reflects the long run costs associated with providing the relevant services, and that differences between charges of certain customer groups must be based on differences associated with providing differential services and that consistent principles and approaches are applied in the calculation of charges. ▪ To the extent that the cost structures built into last year's tariffs are reflective of the cost-structure of the business, it is reasonable to assume that applying a common percentage uplift to all tariffs will result in the tariffs remaining cost-reflective. However, if this approach is applied continuously for multiple years, there is a risk that the tariffs may fall out of line with the cost structure of the business. This should be examined periodically by studying the breakdown of different costs within the business, and assessing the degree to which they vary with consumption or can be attributed to particular groups of customers. But in our expert opinion, it would be disproportionate to do this every year, and it may be more efficient for the work required to develop more cost reflective tariffs to be conducted at the industry level (i.e. not led by a WoC). ▪ We understand that SESW has conducted an assessment of how costs in the business hav changed between 2020/21 and 2021/22 at the granularity of opex, financing and capex categories. Whilst this is an important first step, we suggest how SESW can build on this analysis to assess the contribution of different customer categories to cost increases. We understand that SESW has not conducted such an assessment for this year's charges review, and does not plan to conduct one before finalising the charges in January 2023.
Assessed charges (Ofwat Criterion # 18)	▪ SES Water offers assessed charges to household (sole/multiple occupancy) and non-household customers. ▪ Following the reasoning for #12 -15: To the extent that last year's assessed charges reflect last year's metered charges that would apply in relation to the volume of water likely to be supplied, it is reasonable to assume that applying a common percentage uplift to all tariffs complies with the criterion.

Recommendations for further improvement

Besides the recommendations set out in Table 1 above, we further suggest the following next steps for SES Water to consider implementing in future versions of the model:

- To calculate allowed revenues, the model currently takes some inputs from Ofwat's FD models, but then replicates some of the calculations (namely, reconciliation elements to update for outturn inflation and incentive rates) within the tariff model. We have taken the methodology for those calculations as given (checking that they are internally consistent), as we have not conducted a review of Ofwat's FD models for this assignment. However, for future versions, we would recommend re-structuring the tariff model so that its links with Ofwat's FD models are more direct and transparent.
- Moreover, the initial version of the model sent by SES Water contained several inputs that had been "hard pasted". We recommend that, where possible, SES Water should copy the source data into the model and link it directly as an input. This ensures that the tariff model is more transparent and less prone to error. In cases where "hard-pasted" inputs are necessary, it is particularly important to ensure that the inflation base year of the figures (if relevant) are correct.
- We understand from discussions with SES Water that its forecast assumptions on customer numbers and consumption by customer group are based on the best data that was available. Once data availability improves, we recommend SES Water collects a more detailed time series of monthly historical data for at least the last three years, to provide a robust basis for further analysis of historical trend, and the expected evolution of such trends in the future.
- Finally, to ensure cost-reflectivity is maintained in future versions of the model, we would recommend SES Water conducts a detailed analysis of its cost drivers by customer group, to sense-check the cost allocation assumptions underlying its current tariff structure. As noted above, we understand SESW has conducted an assessment of how opex, capex and financing cost changed between 2020/21 and 2021/22. However, we suggest considering taking this analysis further by:
    - Splitting cost categories further to enable SESW to more easily attribute cost and cost changes to individual customer categories;
    - Identify drivers of each cost items, which can be measured at a customer category level (e.g., peak demand); and
    - Analyse the contribution of each customer category to changes in cost items based on the drivers identified

We would be delighted to discuss with you any of the above points in more details, including how we could help designing and implementing any of the recommendations going forward.

Yours sincerely

Richard Druce
Managing Director

Appendix A. Explanation of the Inflation Double Count Error in the Estimation of Initial Tariffs

As explained above, the tariff increase for final HH and NHH charges has fallen by c. 6 percentage points. This reduction was in part caused by the correction of a double count of inflation in the September model, which impacted the allowed revenue figures used to estimate tariffs for 2023/24. Below I set out the origins of the error and how we suggest adjusting the assurance process to avoid similar errors in the future:

- **Where the error came from:**
  - The error stemmed from a conversion to the initial allowed revenue figure (from PR19) from the 2017/18 real terms base year to 2019/20 prices. This created a double count of inflation as the 2019/20 allowed revenue figure was combined with the inflation indexation from last year's model, which was based on an initial allowed revenue figure specified in 2017/18 real terms.
- **Why the error was not spotted in the September assurance process:**
  - We flagged a number of issues on the inflation indexation, one of which is that the inflation and allowed revenue inputs were hard pasted so we could not validate them.
  - In addition to those, there was an incorrect units column (which stated the initial figure was in 2017/18 real terms), which we did not spot (and could not easily have done without interrogating further where the hard pasted inputs had come from).
  - In principle, we could have done a line-by-line comparison to last year's model inputs and might have spotted it. However, as stated in the above scope of work, NERA's approach has been to take data inputs into the model as given.
  - We might also have been able to prevent this if we had edited the Excel calculations ourselves to address the issues we found, and not simply sent SESW a list of issues, which prevents things falling between the gaps.
- **How we can prevent similar issues from happening again:**
  - We suggest that the party tasked with assurance takes ownership of changing the model where we identify methodological issues (SESW would presumably still have to clarify inputs to their model) and SESW take the role of verifying whether they agree with the changes.
  - This would avoid scope for miscommunication, and saves the time required for multiple iterations before the deadline for initial/final HH charges.
  - It might also help if we had more visibility than we have to date on where inputs come from, but it's hard for us to comment on whether this is viable.
  - We could also reduce the scope for error (as noted above) by doing a line-by-line comparison with last year's model, but this will always be difficult as input data will routinely change and it won't necessarily be helpful for us to query why specific numbers have changed from year-to-year.

As for how we can ensure that no such error impacts the final HH tariffs for 2023/24: we are now confident in the inflation indexation of allowed revenues in the model, as we have verified it by:

- Checking that the adjusted allowed revenues for historical years matches those presented in last year's tariff models; and
- The inflation indexation in Ofwat's RFI model template match the inflation indexation in the latest tariff model, when updated for the latest inflation numbers. We did not conduct this cross-check before, due to the fact that the RFI model includes superseded values for certain parameters such as the k-factor.