SUMICSID SPRL

Post-run audit of the international transmission benchmarking TCB21 for gas

FINAL REPORT

19/12/2024

KPMG Advisory

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1 Introduction

European directives 714/2008 (electricity) and 715/2009 (gas) clearly state that the tariffs of a transmission system operator (TSO) should reflect the cost of an efficient and structurally comparable network operator. Given the limited number of TSOs in each jurisdiction, this naturally creates a need for the NRAs to regularly benchmark the relevant cost across TSOs in the sector.

Based on the long experience with international electricity TSO benchmarking (ECOM 2003, ECOM+ 2005, e3GRID 2009 and 2013) CEER and the gas benchmarking e2GAS in 2015, CEER organized the first multi-energy benchmarking of gas and electricity TSO, TCB18, in 2018-2019, involving 17 electricity TSOs (TSO-E) and 29 gas TSO (TSO-G).

The benchmarking study contains three types of information: cost data extracted from the accounting systems of the operators, technical data concerning assets and operations reported by the operators, as well as contextual data partially or fully obtained through public sources (EUROSTAT, national geographical data, etc.). The validation of the cost allocation and the consolidation of the decomposed data should be controlled prior to submission.

The benchmarking project being assigned to Sumicsid and Swiss Economics includes an independent audit and control of the data processing, calculations and documentation for the project.

2 Scope and objectives

SUMICSID requests KPMG to validate that the reported scores in the "TCB21 Model Specification GAS - FINAL REPORT" result from the application of the benchmarking methods and parameters stated in the documentation. The final report is available in Appendix 7.2.

The scope of the audit was detailed following the planning phase in which we have performed a detailed process walkthrough as described in Appendix 7.1. This process walkthrough resulted in the detailed audit test plan including the audit objectives and related audit procedures as agreed with SUMICSID.

The scope included the following:

- Reproduce RDS files based on input.
- Determine the reproducibility of the benchmarking results.
- Determine whether the R code effectively executes the steps as being defined in the benchmarking methodology.
- Determine whether the reported results are the result of the R script.

As extension to this scope definition we would therefore like to refer to the audit test plan as available in section 5 infra.

Explicitly excluded from the scope are the following:

- Dynamic calculations for the productivity changes.
- Work by the CEER PSG, NRA or TSO in data validation prior to the delivery of the final data.
- Model specification, process and results; i.e. statistical work to derive the final model.
- Sensitivity analysis; design and simulations for various parameters documented in the final report.
- The normalized grid coefficients derived by the technical consultants.
- Process communication prior or during the project between consultants and between SUMICSID and NRAs and/or TSOs.
- Determine whether the endorsed data is used for analysis.
- Determine whether alternative specifications of data, process, methods or models could have resulted in other scores.
- Access limitation to the WorkSmart collaboration tool.
- Correctness of benchmarking methodology.
- The correctness of R functions.

3 Executive summary

The audit of the international gas transmission benchmarking TCB21 for Gas was performed over the period 18/10/2024 and 18/12/2024.

During the audit we have performed inquiries with key personnel from SUMICSID, inspection of documents, observations and system queries in order to determine whether reported scores in the "TCB21 Model Specification GAS - FINAL REPORT" effectively result from the application of the benchmarking methods and parameters stated in the documentation.

Our audit procedures revealed no exceptions concerning the application of the benchmarking methodology. Therefore we conclude that the benchmarking methodology as described in the report "TCB21 Model Specification GAS - FINAL REPORT" has been effectively applied.

Nevertheless, we found two attention points that may be useful to consider by SUMICSID when executing future benchmarking studies:

- Ensure to apply a consistent methodology with respect to defining variables;
- Include references to the exact versions of scripts used to generate all the reports.

4 Methodology and approach

4.1.1 Approach

1. PLANNING	2. FIELDWORK & VALIDATION	3. REPORTING
18/10/2024 – 07/11/2024	07/11/2024 - 10/12/2024	10/12/2024 - 18/12/2024

4.1.2 Planning

Kick-off
A kick-off meeting was held with the relevant stakeholders from SUMICSID to present the team, confirm the scope, planning and other practical arrangements.

Gain understanding
In order to establish an audit test plan to meet our audit objectives we went through the methodology together with SUMICSID knowledgeable personnel who explained us the process steps that have been performed to come to the reported scores. This ‘walkthrough’ enabled us to understand how it has been applied in practice (use of tools, programming, parameters, documentation etc.).

Draft audit plan
Based on the walkthrough of the methodology as proposed supra drafted an audit plan for execution in phase 2. We refer to point 5 infra including the detailed audit test plan.
For purposes of transparency and quality control this audit test plan was agreed with SUMICSID.

4.1.3 Fieldwork & Validation

Fieldwork
During this phase the agreed audit test plan has been executed. Our audit procedures included:
- Interviews: inquiry with people knowledgeable about the applied benchmarking methodologies and how exactly the results have been produced.
- Observations (on-screen)
- Inspection of documentation: e.g. source data, review of codes and calculations, results and reports (*)
- System queries: re-run of process to come to same scores as reported

(*) In certain cases we have selected a number of items for testing only.

Validation
Our findings resulting from the above procedures have been communicated directly to SUMICSID for the purpose of validation.

4.1.4 Reporting

Presentation of the preliminary findings
The audit findings individually validated during the execution of the fieldwork have been presented to Management. Where applicable we make a distinction between findings which may impact the benchmarking results and those that do not impact those results ('points of attention').

Delivery of the reports
We have agreed during the planning phase to deliver a detailed report for SUMICSID as well as a condensed one for the for the chairman of CEER TF IRB (Incentive Regulation and Benchmarking).

4.1.5 Audit data management

The external drive in 6.3.2 will be returned to SUMICSID on January 7th 2025 and any (partial) copy of data is deleted by the final delivery of the report. The supporting audit evidence (including a PDF of the reports and all scripts used) are saved on the drive for the record.

5 Audit test plan

1. Data Collection
Excluded from scope
2. Data Management/ Validation
Excluded from scope
3. Data analysis
3.1 Determine whether the rds files created by the Data Management team are used as input for the data analysis
— Check whether the .rds files are generated by the R script provided by the Data Management team (perform a re-run of the R script) — Check whether the re-generated .rds files match the input files in the run directory.
3.2 Determine the reproducibility of the benchmarking results
Obtain a copy of the input files, configuration script and R scripts and: — walkthrough configuration script and R script — re-run the R script — obtain a copy of the results and check against the R logging and verify that the results of the re-run are the same as the ones reported (consider selection of a sample – minimum 8) — investigate whether any errors are logged by the system (execution of R script)
3.3 Determine whether the R code effectively executes the steps as being defined in the benchmarking methodology
Obtain a copy of the R script and execute the following: — selection of a number (15) of process steps as described in the Report and verify whether these are reflected in the R script — selection of a number of process steps (15) from the R script and verify whether these effectively are related to the described methodology
3.4 Assess the impact of the input on the results
Execute the following: — change an input file and/or a parameter in the configuration file and re-run the R-script — assess whether the impact of the change on the results is as expected (expectation determined through inquiry)
4. Reporting
4.1 Determine whether the reported figures are the result of the R-script execution
Re-run the R-script and verify whether: — the results of the re-run are the same as the ones reported

6 Appendices

6.1 Final Report TCB21 Gas

2024-07-31
tcb21_note_modelspe

6.2 Contact details

6.2.1 Auditees

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6.2.2 KPMG

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Disclaimer

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