SUMICSID SPRL

Post-run audit of the international gas transmission benchmarking e2GAS

FINAL REPORT (short version)

23/12/2016

KPMG Advisory

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1   Introduction

A taskforce composed of 10 national regulatory authorities (NRAs) within the Council of European Energy Regulators (CEER) decided to undertake an international benchmarking of gas transmission system operators. The Dutch NRA, ACM, acted as contractual counterpart and issued a Request for Quotation on 23/04/2015. SUMICSID was awarded the contract based on their proposal 27/07/2015. The project operated from 01/08/2015 to 02/06/2016 when the final report was released.

The original data were collected from the Transmission System Operators (TSOs) bilaterally by each NRA on a voluntary or mandatory basis. Each NRA was responsible for the endorsement of the original data.

SUMICSID SPRL (later called 'SUMICSID') performed the e2GAS work in collaboration with Swiss Economics, Zurich, who were responsible for data management, including internal data validation.

As stated in the e2GAS project plan, the project offers an option for a post-run audit. KPMG was requested by SUMICSID to execute this audit.

2 Scope and objectives

SUMICSID requests KPMG to validate that the reported scores in the final e2Gas Report result from the application of the benchmarking methods and parameters stated in the documentation. The final report is available in Appendix 6.2.

The scope of the audit was detailed following the planning phase in which we have performed a detailed process walkthrough as described in Appendix 6.1. 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:
- Determine whether the endorsed data is used for analysis.
- 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 point 5 infra.

Explicitly excluded from the scope are the following:
- Determine whether alternative specifications of data, process, methods or models could have resulted in other scores.
- Work by the NRAs 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; i.e their specification and actual calculations for various parameters documented in the final report.
- Work by the technical consultants in the project in deriving the weight system for the normalized grid.
- Process communication by phone or email prior or during the project between consultants and between SUMICSID and NRAs and/or TSOs.
- Access limitation to the WorkSmart collaboration tool.
- Correctness of benchmarking methodology.
- Configuration values in the R code (R configuration file).
- The correctness of R functions.

3   Executive summary

The audit of the international gas transmission benchmarking e2GAS was performed over the period 07/11/2016 and 23/12/2016.
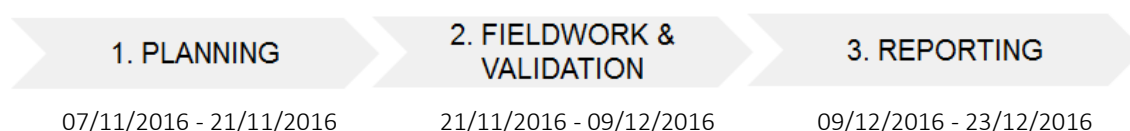
During the audit we have performed inquiries with key personnel from SUMICSID, inspection of documents, observations and system queries in order to determine whether reported scores in the final e2Gas Report effectively result from the application of the benchmarking methods and parameters stated in the documentation.

Our audit procedures revealed no exceptions that impact the results in the final e2gas benchmarking report as issued by SUMICSID.

Therefore we conclude that the results as reported in the e2GAS reports are reliable.

4   Methodology and approach

4.1.1   Approach

1. PLANNING	2. FIELDWORK & VALIDATION	3. REPORTING
07/11/2016 - 21/11/2016	21/11/2016 - 09/12/2016	09/12/2016 - 23/12/2016

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 etc.).

Draft audit plan
Based on the walkthrough of the methodology as proposed supra we will draft 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. 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 agreed during the planning phase to deliver a detailed report for SUMICSID as well as a condensed one for the Dutch NRA.

5   Audit test plan

1. Data Collection
Excluded from scope
2. Data Management/ Validation
2.1 Determine whether the data used for Data Management/Validation corresponds to the data available to the TSOs on the WorkSmart and is endorsed by the NRAs
— Obtain access to the WorkSmart platform and trace back the endorsement date and who uploaded the endorsement form. — Obtain a copy of the endorsed files on WorkSmart and a copy of the files used for Data Management/ Validation and compare the files (consider a selection of a sample of files – minimum 8).
2.2 Determine whether the STATA code executes the steps as being defined in the Data Import and Validation report
Obtain the STATA script and execute the following: — starting from the last endorsed XLS files, reproduce the CSV files used as input for the data analysis (consider selection of a sample – minimum 8); — verify the data reformatting; — observation of the exploratory analysis and data integrity checks.
3. Data analysis
3.1 Determine whether the CSV files created by the Data Management team are used as input for the data analysis
Obtain a copy of the CSV files and check whether they match the input files in the run directory (consider selection of a sample – minimum 8).
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 on any errors 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 (8) 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 (8) from the R script and verify whether these effectively 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 results are the result of the R-script*
Re-run the R-script and verify whether the results of the re-run are the same as the ones reported.

6 Appendices

Final e2Gas report

e2gas_final_report_
160602_V16.pdf

6.1 Contact details

6.1.1 Auditees

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As set out in the engagement letter, we are prepared to allow you to disclose an extract or our report to the Dutch NRA on the condition that:
— We accept no responsibility to any third parties for the contents of our report;
— You have all necessary permissions from relevant parties to disclose our report in the legal proceedings and there are no duties of confidentiality owed by you to any party which would prevent the report to be used in the legal proceedings;
— You will accept the risk and not hold KPMG responsible in any way, if the use of our report in the legal proceedings causes or gives rise to or leads to any action or claim against you, or if anyone acquiring such information misuses that information in any way;
— You shall indemnify and hold us harmless against all and any claims, actions, demands or judgments brought or threatened against us and all loss, damage and expense relating

thereto, incurred or suffered by us in any way arising out of or in connection with the disclosure of our report in any legal proceedings between you and any third party.