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Our reference
LCR 15.0034

Your reference

Subject
Response to "An approach for benchmarking European gas transmission operators"

Dear Ms Schoenenberg,

GTS welcomes the opportunity to respond to the draft Sumicsid report on the feasibility of benchmarking European gas Transmission System operators (TSOs).

As we have indicated at the workshop which was held on 1 December, GTS does not believe that the proposed benchmarking study by Sumicsid is feasible for use in a regulatory context. The results of such a benchmarking study are simply too unreliable. The reasons for this fall into three categories: lack of structural comparability of TSOs, problems with model selection and data collection and a lack of transparency and verifiability. In the attached response we have set out our concerns with the proposed study in more detail which include our remarks and observations made at the workshop. The response also includes our answers to the questions put forward in the Sumicsid feasibility study.

I trust that the comments made by GTS in this response are helpful and should you wish to discuss any of the comments in this response then please do not hesitate to contact me. GTS is happy for this letter to be made public. A copy of this letter will be sent by e-mail to Mr. Odijk at ACM and to Mr. Per Agrell at Sumicsid.

Yours sincerely,
GASUNIE TRANSPORT SERVICES B.V.

Floris Gräper
Manager Regulation

Gasunie Transport Services B.V.

Date: 16 January 2015 Our reference: LCR 15.0034

Subject: Response to "An approach for benchmarking European gas transmission operators"

Part I.
GTS Response to "An approach for benchmarking European gas transmission system operators"

1. We should like to start with two remarks of a procedural nature. First, the legal and organizational framework within which the proposed benchmarking study is to be conducted is unclear. For instance, it is not apparent to GTS on the basis of what or whose competence the benchmarking study is to be conducted, whether the participation of TSOs is on a voluntary basis or not and how the different tasks and responsibilities are divided between SUMICSID, CEER and the various NRAs. To illustrate this point: at the workshop GTS asked who would determine whether country-specific factors that have been identified are acknowledged. At the workshop it was suggested but not confirmed that this would be decided by the consultant. GTS would therefore welcome more clarity with regard to the legal and organizational framework of the proposed benchmarking study.

2. Secondly, GTS believes that it is necessary to clarify upfront if, and to what extent, the outcome of the benchmarking study shall be applied in tariff setting. The use of outcomes in tariff setting will seriously harm the level playing field for European gas TSOs if the benchmark does not include all NRAs and TSOs. Furthermore, if some NRAs would apply the outcomes of the study in their tariff setting, whereas others would not, this may also negatively affect the outcome of the benchmarking study for the TSOs whose tariffs will be influenced by the study. If an NRA has no intention of applying the outcome of the study in rate setting this may have an adverse effect on the selection of the data by both the TSO and the NRA and therefore on the outcome of the study for TSOs of other countries. In our opinion, this also needs to be clarified before any benchmarking study can be carried out.

3. In the following paragraphs, we will give our general comments on the approach suggested by SUMICSID. Our concerns with the proposal fall into three categories: comparability, model selection and verifiability. These will be addressed below. Finally, answers to the questions raised by SUMICSID are included.

Ad 1 Comparability

4. In order to derive a meaningful conclusion on the efficiency of any TSO based on a comparison with other TSOs, it is essential that the participants are structurally comparable. Otherwise, elements that are not comparable will distort the calculations, leading to the under or overestimating of the efficiency of the TSO.

5. Benchmarking of gas TSOs is made very difficult because there is no clear and shared definition of the supply task. Especially the lack of a so-called universal service obligation means that there is no common obligation for TSOs to develop their network and offer transmission services for all relevant customers. This is because gas is substitutable for other energy sources, such as coal or oil for heating purposes.

Without a uniform definition of the supply task, any comparison of TSOs will not accurately reflect the fact that there may be different obligations (and corresponding cost consequences) being put on TSOs.

6. Benchmarking an international peer group creates other challenges too as it requires the taking into account of all structural differences between countries as well as between TSOs. Examples of such differences are the way in which costs are approved by the regulatory authority, the interpretation of out-of-scope costs, the ownership of the network, the degree of purchased services and outsourcing, the age structure of the assets and history of network development and definition and interpretation of energy and capacity data (market definitions, virtual trading points etc.). Also, price differences between countries must be taken account of as well as differences in technical definitions and in the organization of the market.

7. In our opinion, SUMICSID underestimates both the complexity of the international gas transmission industry and the multitude of aspects that define the assets and operations of a gas TSO. In our view European TSOs are not sufficiently equal to make statements on their efficiency based on a rather crude method of comparison.

8. According to SUMICSID, differences can be easily addressed by inviting the TSOs to produce any relevant factors (so-called Z-factors). This procedure will face serious challenges. First of all, in order to be able to handle structural differences, it is necessary that these differences are known. It is not possible for an individual TSO to identify relevant differences with all other TSOs. For this, the TSO –or the NRA- would have to have complete knowledge of all relevant factors, not only in its own country, but also of these aspects in all other countries. Without this knowledge, it is not possible to assess at which point all relevant factors are taken into account. To illustrate this point: In the context of a possible benchmark between GTS and German TSOs, GTS has been in discussions with ACM for more than a year now to establish the differences between GTS and the German TSOs. This has until now resulted in the identification of more than 20 structural differences (with a major impact on the relevant costs to be taken into account), yet ikt is not possible to conclude that this list is complete.

9. Even if it would be possible to identify all relevant differences in a qualitative way, it would still be very challenging to compile the relevant data for all participating TSOs on a like-for-like basis. TSOs may –and will- have different definitions and cost-accounting systems, and often data will not be available altogether. Data consistency and availability was also a major issue in the E3Grid project. The approach suggested by SUMICSID in chapter 4 with its sole focus on technical asset data is insufficient as it ignores other sources of heterogeneity.

10. The next step in trying to make a like-for-like comparison would be to establish the quantitative impact of the differences on either the cost-base or the output parameters for all participating TSOs in an objective and transparent way. This is a very difficult and time consuming task. In the GTS - German TSO comparison described above, the differences identified so far amount to over 25% of GTS's total costs.

11. The issue of comparability is complicated by the fact that differences between TSOs are not only caused by factors that exist today, but also by events and circumstances that occurred for an extensive period the past. This is because technical lifetimes and hence deprecation periods in the gas industry are very long and often exceed 50 years. Therefore, pipelines that were being laid over 50 years ago are still in the Regulated Asset Base of TSOs and are thus still part of the cost base. In order to make adjustments for differences in construction costs, market circumstances etc. between different countries over the years it will be necessary to have all of this data available, not only for today, but for a period going back many years.

12. The impact of differences on efficiency scores cannot be underestimated. Even in the German regulatory benchmark, where one could assume that all TSOs share at least the same legal framework and accounting standards, adjustments made by the regulator outside of the DEA-model to account for TSO-specific factors increased the efficiency score of several TSOs by more than 25 percentage points.

13. The approach suggested by Sumicsid (chapter 5) to mitigate the issue of comparability by focusing on the assets employed by the TSO as an output parameter fails to address the issues above. It only focusses on the costs differences of constructing assets due to geographical factors. Even when limiting the scope of the benchmark to the assets employed many factors come in to play which are not captured by the questionnaire as proposed by SUMICSID in chapter 4. An incomplete list of these factors includes market conditions for both labor, contractors and commodity prices, weather conditions, planning consent conditions, safety and environmental requirements etc.

14. Furthermore, only using the assets employed as an output parameter while using the TOTEX as an input parameter ignores the choice that each operator has to make capacity available through investments, or through measures that are mostly reflected in operational costs, for instance the procurement of flexibility and balancing services from third parties. To illustrate this point: assume two TSOs perform the exact same services to their customers under exactly the same circumstances with the exact same TOTEX. Both TSOs should in that case be equally efficient. However, one TSO has chosen to own all assets that are required to perform its tasks, while the other TSO leases certain assets and procures capacities from other TSOs. The latter TSO would have fewer assets in the Benchmarking approach suggested by Sumicsid and, having the same TOTEX, would therefore be deemed less efficient.

15. A further example is the use of compression. Some TSOs have optimized their costs by investing in compressor stations and not in pipelines. From a Totex perspective this can and often will be an optimal solution. In the method proposed by Sumicsid, TSOs that have optimized their costs in such a way, will be punished by a relative low efficiency score compared to TSOs that have invested only in pipelines. Only using assets as an output parameter can also lead to the erroneous conclusion that a TSO that produces a relatively limited amount of transmission capacity with it assets can still be highly efficient.

16. We conclude that given the complexity of the gas transmission industry, the heterogeneity of the European TSOs and the limitations to identification of differences between TSOs, in reality it will be impossible to compile a like-for-like data set on which robust conclusions of relative efficiencies can be based.

Ad 2 The use of DEA modelling

17. SUMICSID concludes that due to the limited dataset, the only benchmarking technique that is feasible in this project is the DEA (data envelopment analysis) methodology. Application of any technique that allows for meaningful statistical validation is prohibited by the very limited dataset (max 15). SUMICSID fails to address that it is not only the sample size that determines which methods are applicable, but also the homogeneity of the observations in the sample.

18. In our view, application of a DEA model in a regulatory setting is inappropriate. The principal reason is that DEA ascribes all variation in measured performance to inefficiency. Therefore, *any* error in data collection, model specification or treatment of factors caused by heterogeneity will result in a distorted efficiency score which -when used in target setting of the TSO- has a direct impact on the tariffs that the TSO is allowed to charge for its services.

19. Data errors are inevitable. This can be derived from the issues with data collection and the variations between TSOs as discussed above.

20. Even in the hypothetical case that no errors with respect to the data are made, the model choice *itself* has a decisive impact on the efficiency score of TSOs. The effect of a wrongly specified model is acknowledged by SUMICSID in 6.41 of the feasibility study:

    The importance of understanding the details of the methods is further accentuated by the frontier nature of the analysis. A wrongly specified model may lead to grossly misleading conclusions. A DEA model which does not include all relevant cost drivers, for example, will suggest excessive saving potentials.

    SUMICSID does not to describe how such errors should be avoided.

21. The risk of a wrongly specified model that covers not all relevant cost drivers is amplified by the constraints of the DEA model itself. In the DEA model suggested, because of the small dataset only three cost drivers are allowed. This means that only three parameters account for all the activities, outputs, and assets of the TSOs. Given the complexity and the heterogeneity of the TSO-industry, it is unlikely that any such model will cover all relevant factors.

22. The volatility in outcomes due to different modelling choices are shown in the German benchmark, where efficiency scores ranged from ca. 50% to 100%, fully attributable to choice of output parameters. Also, in E3Grid, adjustment of the capital costs for all TSOs resulted in a decrease in efficiency for the Dutch TSO of 15%.

23. The application of DEA on a small, heterogeneous data sample is further hampered by the fact that it is not possible to perform adequate statistical validation of the results. Users of the model simply cannot tell what causes the results that they have obtained: data-errors, modelling errors or true inefficiency. As correctly pointed out by professor Weyman-Jones[1], the only conclusion can be that in order to be able to use a benchmark with any kind of robustness a sufficiently large dataset of homogeneous TSOs should be compiled. Given the limited number of TSOs in Europe and the high degree of heterogeneity, we seriously doubt that this is achievable.

24. The suggestion of SUMICSID is to add data from American TSOs. However, adding American data would increase the size of the data sample, but at the same time increase heterogeneity and issues of data definition even more.

25. We conclude that the method proposed by SUMICSID is flawed because it lacks the power to address the complexity and heterogeneity of the gas TSO business, cannot distinguish between data- and modelling errors and true inefficiency and prohibits any meaningful statistical validation.

Ad 3. Transparency and verifiability (Sumicsid H7)

26. Given the vulnerability to errors of the DEA-benchmarking as described above and the potential impact on both TSOs´ and customers' financial outlook, any benchmarking project at the very least requires a process that includes comprehensive checks and balances, requiring full transparency in the data used and the modelling decisions made.

27. Unfortunately, this does not seem the case in the SUMICSID proposal for a procedure as described in chapter 7. The following quote from SUMICSID (7.13) gives a clear indication of this:

    Clear rules must be defined as to who can access which information and who can alter data. The idea must be to limit information sharing to an absolute minimum and to only combine and share information according to clearly defined agreements and only to the extent that it truly facilities the analyses.

28. Without access to the data it will be impossible for an individual TSO or NRA to verify the calculations made by the consultant. Even the –welcome- suggestion of SUMICSID in 7.36 to open up for audit any submitted data as well as the calculations does not allow the NRA to verify the results themselves. Note that this situation is different from national benchmarking as occurs for instance in Germany where the regulator has access to all the data and is able to validate the consultant's calculations.

[1] *Commentary on An approach for benchmarking European gas transmission system operators,* Tom Weyman Jones, November 24, 2014

29. We agree with SUMICSID that both cost as well as output data should be monitored by an independent auditor. Given the large variation in data definitions and accounting systems used by TSO's the chance of success for this auditor to come up with meaningful results can only be very limited, as he would have to have knowledge of these definitions and systems. This was also the case in the E3Grid project.

30. We conclude this topic with the observation that there is an inherent contradiction between the transparent and verifiable process that is required in a regulatory setting, and the requirements of working with confidential data that will *at best* be available in a wide variation of definitions and accounting system.

Conclusion

31. We conclude that three major obstacles impede on the feasibility of benchmarking European Gas transmission system operators: the lack of comparability between the TSOs, the defectiveness of DEA modelling and the lack of transparency and verifiability of the procedure. The approach suggested by SUMICSID does not overcome these obstacles. Furthermore, given the requirements with regard to comparability, methodology and procedure we not do not believe that top-down benchmarking can lead to any meaningful conclusion on the relative efficiency of European TSOs for use in a regulatory context.

Gasunie Transport Services B.V.

Date: 16 January 2015 Our reference: LCR 15.0034

Subject: Response to "An approach for benchmarking European gas transmission operators"

Part II.
Answers to SUMICSID questions

2.14 The current analysis focuses at TSOs rather than regional transmission operators (RTOs) – do you agree with this limitation?

This question assumes that it is possible to make an objective and clear distinction between the two types of operators. While this distinction has been made in a legal sense and with the foundation of ENTSOG, the companies within ENTSOG vary significantly from a technical and commercial viewpoint. We also note that even in the German Benchmark several so-called TSOs had in fact the technical characteristics of a DSO: dependence on up-stream networks for pressure regulation, a high number of low-capacity network points and a very dense grid. In the 2010 Benchmark, these same networks were even treated as RTOs by BNetzA. So, in so far the limitation is meant to establish comparability between the participants, we do not share the suggestion of SUMICSID.

2.15 Do (sic) what extent are the European more or less similar than operators outside of EU-28?

As we set out above, we do not have enough information to make a meaningful assessment of the similarity of the European TSOs. As we have even less information on the TSOs outside the EU, it is impossible for us to answer this question.

3.07 Are there other asset dimensions that are relevant here?

In comparison to the three asset classes described by SUMICSID, the regulatory asset base of GTS comprises 31 asset classes associated with the transport of high-pressure gas.

3.23 Do you agree with the statements regarding the access to data for pipelines, stations, LNG terminals and storage installations?

See above for the description of transport assets. In our opinion, the report oversimplifies the nature of developing and operating a high-pressure gas network. We have no information on LNG-terminals and storage installations.

3.52 The Chapter argues that the initial scope should be limited to a subset in order to assure comparability. Do you agree with this assessment?

The assessment assumes that clear and objective cost allocation rules can be developed and uniformly be applied to all participating TSOs. In our opinion and based on experiences in the E3grid project this is very challenging. Hence, limiting the scope by leaving certain costs and activities out introduces the risk of data-errors. More importantly, limiting the scope to a subset still requires a close examination of all relevant differences in order to guarantee comparability. If this is not done properly, limiting the scope can evn increase the problems of comparability.

3.53 The Chapter is negative with respect to the feasibility of comparing system operations among GTSOs. Do you agree with this assessment? If not, what information should be used to achieve comparability in this regard?

The assessment assumes that clear and objective cost allocation rules can be developed and uniformly be applied to all participating TSOs. In our opinion and based on experiences in the E3grid project this seems very challenging. Hence, limiting the scope by leaving certain costs and activities out introduces the risk of data-errors.

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4.08 Is it feasible for you to provide information corresponding to that presented in the table above for your corresponding assets?
As the definitions leave much room for interpretation, we doubt the data will be usable in a comparison between TSOs. Also, we fail to see the relevance of many of the technical characteristics that are asked.

4.11 Is it feasible for you to provide information corresponding to that presented in the table above for your corresponding assets?
As the definitions leave much room for interpretation, we doubt the data will be usable in a comparison between TSOs. Also, we fail to see the relevance of many of the technical characteristics that are asked.

4.15 Is it feasible for you to provide information corresponding to that presented in the table above for your corresponding assets?
As the definitions leave much room for interpretation, we doubt the data will be usable in a comparison between TSOs. Also, we fail to see the relevance of many of the technical characteristics that are asked.

4.17 Is it feasible for you to provide information corresponding to that presented in the table above for your corresponding assets?
We have no information on Storage Facilities

4.19 Is it feasible for you to provide information corresponding to that presented in the table above for your corresponding assets?
We have no information on Storage Facilities

4.21 Is it feasible for you to provide information corresponding to that presented in the table above for your assets?
As the definitions leave much room for interpretation, we doubt the data will be usable in a comparison between TSOs. Also, we fail to see the relevance of many of the technical characteristics that are asked.

4.23 Is it feasible for you to provide information corresponding to that presented in the table above for your assets?
We have no information on LNG Terminals

4.25 Is it feasible for you to provide information corresponding to that presented in the table below for your assets? Is it pertinent to adequately describe cost differences?
As the definitions leave much room for interpretation, we doubt the data will be usable in a comparison between TSOs. Also, we fail to see the relevance of many of the technical characteristics that are asked.

5.26 Is there any aspect (cost driving) of grid construction that you believe is not represented in the approach in this chapter?
As pointed out in Ad. 2 "Comparability", many factors not discussed by SUMICSID are relevant for the construction of pipelines

5.27 Is it feasible for you to provide information corresponding to that presented in Table 11 for your pipelines?
No. Without any further definitions (for instance: what is the difference between "stony and "rocky") we are not able to provide this data in any meaningful way. Even then, all participating TSOs would have to use the exact same definitions and interpretations. We question the feasibility of this approach.

5.28 Is heterogeneity primarily an issue for CAPEX or OPEX differences in your opinion?
Both. Furthermore, as discussed in [15] and [16] there is a interchangeability between both factors. So, only focusing on one factor will render the comparison skewed.

6.59 The Chapter argues that frontier analysis is more suited for regulatory benchmarking than other methods, such as unit-cost analysis. Do you agree with this statement?
No. See Ad. 2 Model specification. Given the small, heterogeneous sample size of European TSOs, we do not believe that benchmarking can lead to robust conclusions as required for application in a regulatory setting.

6.60 DEA is advocated to be a good alternative for a frontier model, provided an activity model is developed. Do you agree with this position?
No. See Ad. 2 Model specification in which we conclude that the DEA method proposed by SUMICSID is fundamentally flawed because it lacks the power to address the complexity and heterogeneity of the gas TSO business, cannot distinguish between data- and modelling errors and true inefficiency and prohibits any meaningful statistical validation.

6.61 The last section argues that a set of comparable non-European TSOs could be used to estimate dynamic effects, e.g. productivity improvement rate. Is this a feasible and sound approach in you view?
No. Adding the American data would increase the size of the data sample, but at the same time increase heterogeneity and issues of data definition even more.

7.06 Are the requirements above all necessary and complete for the project organization?
As discussed in [2] and [3], currently many questions on the project organization remain unanswered. During the workshop of December 1st, it was unclear which was the role and responsibly of the consultant vis-a-vis the NRAs, whether participation in the benchmark was voluntary for the TSOs and most importantly, what the end results will be used for.

7.16 The section assumes that transparency is important and feasible using a combination of workshops and project platforms. Do you agree with the assumption and the assessment?
We fully agree with the necessity of transparency. As discussed in [Ad 3 Transparency] we are not convinced of the feasibility to achieve the required level.

7.19 A full project is estimated to a year, based on other observations. Do you agree with this assessment? Is it an objective to shorten the time, even if that would require more resources mobilized at the NRA and/or TSOs respectively?

We do not know how much time it would take to address the fundamental issues we raised in the preceding chapters. Therefore, we cannot assess the timeline of the procedure. Given our experience with the Benchmark that ACM is attempting, in which we have dedicated more than a year to the identification of differences between GTS and the German grid operators, we feel that completion of the full project in a year is unrealistic.

7.32 The section outlines a procedure with two rounds of calculations, both providing feedback to TSOs. Is this a good approach?
See [29]. As long as the calculations and modelling decision cannot be verified or reproduced by a TSO, the proposed feedback will be of limited value.

7.37 To what extent is auditing a prerequisite for you to assign credibility to the results?
7.38 Is there a better way of organizing the data validation of the incoming data?
See [30] We agree that both cost as well as output data should be monitored by an independent auditor. Given the large variation in data definitions and accounting systems used by TSO's the chance of success for this auditor to come up with any meaningful results can only be very limited, as he would have to have knowledge of these definitions and systems. This was also the case in the E3Grid project.

8.21 Do you share this assessment? In particular, is it likely that you would retain valuable information from a benchmark performed along the lines in Chapter 6?
8.27 Do you share this assessment on the risks identified?
No. As discussed, we do not expect to derive valuable information from a benchmark that assesses efficiency based on only three output parameters.

8.28 Are there other risks or contingencies that should be mentioned and addressed here?
See [32] We conclude that three major obstacles impede on the feasibility of benchmarking European Gas transmission system operators: the lack of comparability between the TSOs, the defectiveness of DEA modelling (especially with a very small and heterogeneous dataset) and the lack of transparency and verifiability of the procedure, data used and outcomes. The approach suggested by SUMICSID does not overcome these obstacles. Furthermore, given the requirements with regard to comparability, methodology and procedure we not do not believe that top-down benchmarking can lead to any meaningful conclusion on the relative efficiency of European TSOs in a regulatory context.