



swiss economics

Cost Reporting Guide (Call C)

E2GAS PROJECT

SUMICSID
Swiss Economics

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Summary

The development of a transmission system cost benchmarking poses several methodological challenges, but the ultimate quality of the outcome stands and falls with the accuracy and comparability of the reported data on costs and asset base. To pursue these aims, the e²GAS applies a functional decomposition of gas TSOs activities and costs, which not only implies consistent and transparent allocation of costs from the integrated transmission operators, but also the notion of a common “base level” grid operation and investment level.

The earlier e³GRID project for electricity TSOs and the feasibility study pe²GAS to this project highlighted a number of critical interfaces between the benchmarked activities and the organizational and accounting reality of the integrated transmission system operators. There is substantial diversity in the way operations are organized, expended and costs allocated, all of which affect the benchmarking. Cost data collection relying directly on actual practices will therefore be arbitrary and incomparable in the separation and allocation of common activities.

This guide addresses this need for an unambiguous cost reporting of the benchmarked activities in construction and maintenance by first defining the transmission service functions such as grid planning and construction. Then, five important principles for the cost reporting are introduced: capitalization, correspondence, separation, verifiability and comparability. The cost-type section of the guide applies the principles to determine the reporting of benchmarked costs in a manner that facilitates reporting, verification and validation. The guide is closed by providing the reporting format used in e²GRID.

The deadline for data collection for Call C is four weeks after the issue of V1 of this guide (X refer to drafts).

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1. Introduction

Background

- 1.01 This Cost Reporting Guide is developed to support the e2GAS benchmarking project for gas TSOs.
- 1.02 The aim of the guide is to outline the general principles used and some important choice to be made in the cost reporting. The cost reporting template does not contain the information given in this guide in order to improve the revision management.
- 1.03 As far as appropriate, the guide builds on material and experiences from the e³GRID 2012 benchmarking project for electricity TSOs and the feasibility study to this project, pe²GAS.

Principles

- 1.04 The guide concerns the reporting from the TSO accounting system for use in the e²GAS benchmark. It does not specifically address cost effects of planned or actual quality in grid operation, subject to other data collection.
- 1.05 Any benchmarking is an imperfect attempt to create comparability across heterogeneous firms with varying investment profile, asset age, technical standards and accounting principles. As such, the results of the exercise cannot be directly used to inform detailed decisions as to the valuation and maintenance of grid assets. Omission of specific costs or functions in the definition of the benchmarked entity does not constitute claim of the past or current possibility to operate the organization with the given resources. This disclaimer is important to highlight when using the final or decomposed results from the e²GAS benchmarking in regulation.

Objectives

- 1.06 According to the Project Plan, the e²GAS involves a number of data calls for information
- 1) *Operating cost, C*
Scope and decomposition of costs to be reported in the benchmarking, methodology and definitions.
 - 2) *Asset data X and output indicators Y*
Asset data and technical characteristics, data related to system services performed.
 - 3) *Operator Specific Conditions Z*
Guidelines for submission of cost drivers, costs and asset types that have been omitted in the other calls for some individual operator.
- 1.07 This guide and its associated reporting template constitute Call C above.

2. System description

2.01 The fundamental objective of a transmission system operator is to transport gas to distribution networks and other connected clients.

2.02 By distinguishing activities the autonomy and independency of an operator may be put in a correct context to enable, among other things, performance assessments. The activities are (more detailed description below):

- F** **Grid ownership**
- P** **Grid planning**
- C** **Grid construction**
- M** **Grid maintenance**
- T** **Gas transport and metering**
- A** **Administrative support**

- G* *Gas storage operations (out of scope)*
- L* *LNG terminal operations (out of scope)*
- S* *System operations (out of scope)*
- X* *Market facilitation (out of scope)*
- O* *Any other activity (out of scope)*

2.03 Some activities are strategic with long-term impact on system performance. Others such as T are operational with comparatively less long-term system-wide impact. The ownership is normally tightly connected to regulatory and institutional practices. The administration activity is indirect and delivers no specific service to the grid. Some TSOs may have further regulated or non-regulated activities, which can be captured by the residual activity O.

F Grid ownership

2.04 The grid owner ensures the long-term minimal cost financing of the network assets and its cash flows, including debt financing, floating bonds, equity management, general and centralized procurement policies, leasing arrangements for grid and non-grid assets, management of receivables and adequate provision for liabilities (suppliers, pensions, etc). The purely financial part of grid ownership (the cost of external capital) is not benchmarked in this project. To compare the financial costs for the operators, a specific analysis

would be necessary to control for ownership structure, risk ratings and financial leverage with respect to national regulation. The grid owner function is evaluated through a standardized capital expenditure resulting from the original investments, corresponding to a comparable capital cost for the grid assets.

P Grid planning

- 2.05 The analysis, planning and drafting of gas network expansion and network installations involve the internal and /or external human and technical resources, including access to technical consultants, legal advice, communication advisors and possible interaction with European, governmental and regional agencies for preapproval granting.
- 2.06 Grid planning also covers the general competence acquisition by the TSO to perform system-wide coordination, in line with the IEM directive, the TEN corridors and the associated ENTSOG tasks. Consequently, costs for research, development and testing, both performed in-house and subcontracted, related to functioning of the transmission system, coordination with other grids and stakeholders are reported specified under grid planning P.

C Grid construction

- 2.07 The grid construction activity is about implementing the plans from the grid planning once all necessary authorizations have been granted. Construction involves tendering for construction and procurement of material, interactions, monitoring and coordination of contractors or own staff performing ground preparation, disassembly of potential incumbent installations, temporary site constructions and installations, installation of equipment and infrastructure, recovery of land and material, test, certification and closure of the construction site.
- 2.08 In particular, all expenses related to site selection and environmental impact analyses are classified as grid construction since such expenses normally are capitalized with the asset investment.
- 2.09 Costs related to the expropriation of land for construction, remodeling or dismantling of grid assets, including direct legal costs for the process and costs potentially paid to claimants as consequences of legal proceedings are to be excluded as country-specific costs out of scope (in sheet "global P&L and out of scope"), see Section 3 below.

M Grid maintenance

- 2.10 The maintenance of a given grid involves the preventive and reactive service of assets, the staffing of facilities and the incremental replacement of degraded or faulty equipment. Both planned and prompted maintenance are included, as well as the direct costs of time, material and other resources to maintain the grid installations. It includes routine planned and scheduled work to maintain the equipment operating qualities to avoid failures, field assessment and reporting of actual condition of equipment, planning and reporting of work and eventual observations, supervision on equipment condition, planning of operations and data-collection/evaluation, and emergency action.

T Gas transport and metering

- 2.11 The transport task includes the operation of the injection, transport and delivery of natural gas through the gas transmission system, from defined injection points to connection points interfacing a client, a downstream network, a storage facility or an interconnection to another transmission network. The transport activity is enabled by the operations of compressors, valves and in-line stations. The assets utilized for transport constitute the pipeline system characterizing the TSO. The operational expenses for transport include staffing control centers, inspections, safety and related activities. The volume of energy (gas or electrical) spent in compressors for transport is also comprised in transport. Note that the cost for energy used in transport is standardized to control for structural comparability (Cf. art 5.17)
- 2.12 The TSO operates metering of the flow of gas in segments of the pipelines, at stations and at interconnections to other grids or terminals, including the IT-systems and administrative resources necessary for such services. SCADA and control stations are included in the transport and metering activity, both as investments and operating costs.

G Gas storage

- 2.13 The operation of gas storage facilities, including their maintenance and internal energy consumption, can be considered as separate service of gas storage, analogous to that of non-TSOs.
- 2.14 Costs concerning gas storage are separable according to the Directive 2009/73/EC Art 23 §1 (principle), Art 30§3 (obligation) and Art 41 §1(f), 6(a) (NRA authority to request data), both in terms of ownership of assets and their operation.

L LNG terminals

- 2.15 The operation and maintenance of LNG terminals and peak-shaving plants, the interfaces with ports and other infrastructure, the administration and specific actions necessary to enable such operations are considered part of a specific service.
- 2.16 Costs concerning LNG terminals are in principle separable according to the Directive 2009/73/EC Art 23 §1 (principle), Art 30§3 (obligation) and Art 41 §1(f), 6(a) (NRA authority to request data), both in terms of ownership of assets and their operation.

S System Operations

- 2.17 Within system operations for gas transmission, ancillary services are retained as defined in 2009/73/EC and congestion management (compliant with the ENTSO-G classification).
- 2.18 Ancillary services include all services related to access to and operation of gas networks, gas storage and LNG installations, including local balancing, blending and injection of inert gases, but exclude “facilities reserved exclusively for transmission system operators carrying out their functions”, 2009/73/EC Art 2(14).
- 2.19 System operations may entail delegating operational balance services to subordinate (regional) gas transmission coordinators with limited decision rights. If this delegation entails a contractual relationship with another grid, these costs are included in system operations to the extent that the services correspond to the services defined above.
- 2.20 ENTSO-G further considers the transparency in data exchange with the purpose of interoperability as a specific point in system operations. In consequence, costs related to this activity per se are to be considered as system operations.
- 2.21 Note that the day-to-day management of the network functionality, including personnel safety (instructions, training), equipment security including relay protection, operation security, coordination with operations management of the interconnected grids, coupling and decoupling in the network and allowances to contractors acting on the live grid are included in the transport activity T. This entails asset used or leased, own and subcontracted staff and other costs.

X Market Facilitation

- 2.22 The classification of ENTSO-G for market facilitation services includes capacity allocation mechanisms, congestion management,

incremental capacity auctioning mechanisms, balancing and tariff structure. For the purposes of this benchmarking, the market facilitation activity is composed uniquely of direct expenses related to the contractual relations excluding transport and storage, including purchase and sales of natural gas, capacity from interfacing networks or reserves offered to clients. The activity has no eligible assets and no staff costs.

A Administrative Support

- 2.23 With administration, we refer all costs related to the general management of the undertaking, the support functions (legal, human resources, regulatory affairs, IT, facilities services etc.) that are not directly assigned to an activity above. Central management, including CEO, Board of directors and equivalent is also explicitly included.
- 2.24 In principle, the residual assets for a gas transmission system operator (e.g. office buildings, general infrastructure) could be considered as assets for Administration. However, to the extent that this entails the incorporation of land, land installations and non-grid buildings in the analysis, all of which are susceptible to be country specific investments, such elements are listed in section 2c) of out of scope costs and are hence excluded from the benchmarking.

O Other activities

- 2.25 Exceptionally, a TSO may have marginal activities that are not covered by the classification above, such as external operator training, field testing for manufacturers, leasing of land and assets for non-transport use. These activities should be listed, the costs and assets should be specified and excluded from the benchmarking.

Summary

- 2.26 The benchmarking scope includes the main transport function for a gas transmission operator, the assets and costs necessary to maintain a going concern. Whenever relevant, the costs may be standardized to assure comparability, e.g. for labor and energy purchased.
- 2.27 Activities that are not commonly performed (gas storage and LNG terminals) are excluded.
- 2.28 Costs in system operations and market facilitation that result from country-specific, time-specific or structurally incomparable processes (ancillary services, capacity reservation contracts, reserves etc) are also excluded from the benchmarking.

- 2.29 The remainder of this guide provides an example of how to recreate this basis of comparison from an arbitrary organizational model under separated accounts as governed in EC directive 2009/73/EC.

3. Out-of-scope items

- 3.01 As the objective of the e2GAS study is to compare the relative performance of TSOs in Europe, it requires a set of structurally comparable units. Although corrections can be made for many specific conditions, such as labor cost differences, equipment specifications and service requirements, certain costs are intrinsically related to national cost levels and legislations. Including such costs in the benchmarking, even after some partial adjustments, would potentially create misleading targets and decrease the applicability of the results. Also, the benchmarking is done on the level of operating costs and financial elements of the P&L. Therefore, all costs and revenues linked to extraordinary elements are out of scope.
- 3.02 Starting from audited profit and loss accounts (1), certain costs are to be specified and excluded in their entirety from the study. This also means that their amount will have to be audited by an NRA, auditor or equivalent.
- 3.03 Three types of costs are out of scope:
- 1) *Extraordinary costs (2a)*
 - 2) *Out-of scope activities, i.e. G, L, X, S, O (2b)*
 - 3) *Non-controllable cost types as listed below (2c)*

Extraordinary costs

- 3.04 Costs that are classified as extraordinary in the annual accounts should be specified and excluded, subject to the validation of the NRA.

Out of scope activities

- 3.05 As discussed in the previous Chapter, the assets and costs for out-of-scope activities are to be specified prior to exclusion. The specification is made to enable validation and control, the corresponding costs and investments are not included in the benchmarking.

Specific non-controllable costs

- 3.06 The following cost types (2c) are out of scope: all costs related to material and immaterial assets related to land or buildings, all types

of taxes and levies on properties and activities. More specifically, this concerns:

- 1) *Land-owner compensation*
- 2) *Right-of-way and easement fees*
- 3) *Taxes on property and operation*
- 4) *Depreciation on land, buildings and improvements*
- 5) *Rents and leases of land and buildings*

Land-owner compensation

3.07 Non-capitalized payments to property owners as a result of a legal process (e.g. expropriation or compensation agreement), procurement or negotiation, related to the damage or injury of land, and /or the right to use land for the activities of the TSO. The direct costs for judicial assistance, court fees etc for legal processes (terminated or non-terminated) related to the use, damage or injury of land for the activities of the TSO are also out of scope.

3.08 Motivation: land-owner compensation is inherently country-specific, they depend on the value of the land used, the national rules for compensation and the national regulation for infrastructure construction.

Right-of-way and easement fees

3.09 Non-capitalized payments to third parties as a result of a legal process (e.g. expropriation or compensation agreement) or negotiation related to the use of specific land or installations (roads, waterways) for the activities of the TSO.

3.10 Motivation: compensations to third parties are inherently country-specific, they depend on the legal framework for collateral damage, the national rules for compensation and the national regulation for infrastructure construction.

Taxes and levies

3.11 Non-capitalized state, municipal and regional taxes, levies and public fees paid for the ownership of specific assets (e.g. property taxes, packaging), to use of specific processes (e.g. environmental levies), for investments and procurement (stamp taxes, legal fees, customs), for non-claimed value-added taxes (foreign VAT), and taxes paid on declared annual profits. Note that taxes, charges or fees related to salaries, pensions and other payroll items are considered in scope.

- 3.12 Motivation: taxes and fees are inherently country-specific, and exogenous.

Depreciation on land, buildings and improvements

- 3.13 Depreciations on all land (if applicable), buildings, building improvements, land/site improvements, and building infrastructure are part of the out of scope. However, depreciation related to vehicles, furniture and equipment related to joint or non-grid use, including communication and computer equipment are in scope of the study.
- 3.14 Motivation: depreciation is a country-specific accounting allowance for the wear and tear of an asset. Buildings (offices) and land used by a TSO are by definition country-specific and reflecting the value of real estate in the specific country. The depreciation is not structurally comparable.

Rent of land, buildings and infrastructure

- 3.15 Rents and leasing fees paid for the right to use land, buildings, building improvements and/or land/building infrastructure are excluded. However, rents that include other assets or equipment, such as vehicles, communication and computer equipment are in scope.
- 3.16 Motivation: for neutrality with respect to owned or leased assets in the category buildings and land rent and leasing fees are excluded just as depreciation above.

4. Principles

- 4.01 The functional decomposition of costs for the reporting in E2GAS is based on the five predetermined principles capitalization [CAP], correspondence [COR], separation [SEP], verifiability [VER] and comparability [COM]. These are described below and referred to thereafter in the document.

CAP. Capitalization principle

- 4.02 Capital expenditure means the cost of the asset including the cost to put it in place. Capital expenditure for equipment means the net invoice price of the equipment, including the cost of any initial modifications, attachments, accessories, or auxiliary apparatus necessary to make it useable for the purpose for which it was acquired. It also includes the cost of incoming transportation incurred on shipments from external suppliers. Equipment means a grid asset of non-expendable, tangible, property which stands alone, is complete in itself, does not lose its identity, and has a useful life of more than one year. The Capitalization principle [CAP below] is applied as threshold and is a supplementary information for the other rules that are applied.
- 4.03 Enhancement parts with an acquisition cost of at least 6,500 Euro, which permanently increase the value of an item of minor equipment to 50,000 Euro or greater and are acquired within 120 days of the acquisition date of the item of minor equipment will have their cost added to the cost of the item of minor equipment being enhanced and both the enhancement part(s) and the item of minor equipment will be capitalized; otherwise, they will be expensed.
- 4.04 By definition, any asset that benefits more than one fiscal period potentially could be classified as a capital asset. As a practical matter, however, their only higher cost assets capitalized. That is, TSOs specify a *capitalization threshold* that assets must exceed if they are to be capitalized. The TSO are free to select different capitalization thresholds for different capital asset classes, just as they are free to apply different depreciation methods to different capital asset classes. To maintain comparability [COM] while assuring a feasible reporting, we accept the investment data with specification of the capitalization threshold per asset category. The capitalization threshold per asset category has to be specified in the Cost Reporting template.

COR. Correspondence principle

- 4.05 The accounting objects of the investment stream data should correspond to the grid assets reported in the asset reporting sheets. This does not apply to associated assets such as SCADA and inline stations. Thus, any asset included in the asset data base should have its correspondence in terms of investment data in the investment stream reporting. Analogously, investments in assets excluded from the asset data base should normally not be included in the investment stream (see specifications in chapter 5).

SEP. Separation principle

- 4.06 Primarily, the functional separation into the benchmarked range of activities (in particular construction and maintenance) is used to define the costs and assets. For specific activities, the separation has been explained above. However, for joint costs a specific principle applies, see VER below, see also chapter 2.
- 4.07 The separation principle implies that the benchmarked entity is a *viable* organization, which means that it in principle should be comparable to the overall cost from a subcontracting offer for the corresponding services. This means that the entity does carry the necessary human and technical management resources to cover its operational planning and management functions, as well as the cost of the technical know how necessary to define the tasks of the subcontractor.

VER. Verifiability principle

- 4.08 According to the verifiability principle, joint assets or costs should not be disaggregated beyond the point of a verifiable reference. This means, e.g., that an arbitrary allocation of fixed costs to an activity is inferior to one of three alternatives: complete exclusion of costs, complete inclusion of costs and inclusion of net effect of costs and revenues. The last application would imply that a potentially non-regulated activity (revenue source) is contributing to the operating efficiency of the firm. For joint costs related to administration, a pragmatic cost allocation key may be chosen to curb the incentives to reassign dedicated resources to joint units.
- 4.09 Whenever the verifiability regarding the allocation of a cost or asset is subject to ambiguity, it is the responsibility of the reporting entity to provide documentation regarding (i) used principles for its allocation and (ii) the motivations for the principles applied. In absence of satisfactory documentation, SUMICSID and Swiss

Economics may reassign costs and/or assets to benchmarked costs as the default option.

COM. Comparability principle

- 4.10 Although respecting the separation principle, a given cost item may be unique, inevitable or uncontrollable. Certain costs of this type, such as land owner compensations, right-of-way rents, property taxes, are excluded from the benchmarked cost since they distort the comparability of the data without adding any useful information about the individual performance. Exclusions of this type are explicitly declared, either in this guide or through communication on specific country specific costs (Call Z) in response to motivated TSO requests.

Reporting formats

- 4.11 Although the level at which the e²GAS project is situated is the activity level as in Chapter 2, the reporting may optionally be based on subactivities, summing to the defined activities. This subdivision is voluntary and not subject to validation in the project.
- 4.12 The advantage of this is to offer flexibility to the reporting TSOs while at the same time enabling the construction of a multiplicity of cost measures using a building block approach to be used in different parts of the benchmarking. This reporting format also facilitates the standardization of included costs elements and the verification of the reporting against public accounts.
- 4.13 The details of what to report is given in the Excel cost reporting template and summarized in Appendix A to this guide.

Cost elements

- 4.14 Each activity in which a function is decomposed must be described in terms of the following cost elements:
- 1) *the labor cost of the direct personnel, i.e. staff directly involved in the activity or service that is concerned.*
 - 2) *the cost of services purchased externally to perform the activity or service concerned, such as maintenance, administration (billing, HR), construction; here a distinction is made between:*
 - services that are not capitalized on the books, but that are expensed in the profit and loss accounts of the year in which they were purchased
 - services that are capitalized in the books, and whose cost is then split over several years through the depreciation cost. Here, a further distinction is made between :
 - depreciation cost of grid related assets (software development)

- depreciation cost of other assets (e.g. ICT equipment, patents)
- 3) *the cost of goods used to perform the activity or offer the service concerned; here a distinction is made between:*
 - goods (excluding energy) that are not capitalized in the books, but that are expensed in the profit and loss accounts of the year in which they were purchased; to this type of cost is added, the cost of services purchased externally in order to perform the activities or be able to offer the own services
 - cost for energy (gas, electricity, ...)
 - goods that are capitalized in the books, and whose cost is then split over several years through the depreciation cost. Here, a further distinction is made between :
 - depreciation cost of grid related assets (e.g. compressors)
 - depreciation cost of other assets (e.g. ICT equipment, cars)
 - goods that are leased, in which case the leasing fees have to be reported
- 4) *indirect costs of management and support services that are situated at the level of the function*
- 5) *other costs that are, by definition, not included in any of the categories mentioned above*
- 6) *from this total will be deducted:*
 - capitalized work that was performed for own account (only applicable to the function C – Grid Construction)
 - revenues that are generated by the sale of products or services that are not part of the benchmarked outputs, e.g. working hours by internal staff sold to other companies.

4.15 Default reporting for a cost element is unspecified services (5), direct expense.

4.16 The decomposition is identical for all activities although certain fields may be empty in normal operations (e.g. cost of energy under P).

Grid assets

- 4.17 The reporting of grid assets is defined in a separate guide (XY). For the purposes of this description, we offer a non-exhausting list as example.
- 4.18 Grid assets for transport are those directly pertaining to the pipeline system; pipelines, compressors, pressure regulators, controllers, in-lines stations (block valves and pig traps), fire protection equipment, metering stations, as well as control rooms and SCADA. The buildings and ground preparations (e.g. access roads) shielding or providing access to the above assets are also defined as grid assets.
- 4.19 Non-grid assets are typically land and buildings for offices and other uses, computers, cars, office equipment and various supplies.

5. Detailed guidelines

5.01 Below, we give an overview of specific costs and their treatment in the e²GAS reporting. For each cost, explicit reference is given to the principle(s) applied to determine its inclusion or exclusion in brackets [ETC], cf. above. As mentioned above, the guide below is primarily of use for the decomposition method to exclude certain costs, cf. Appendix A.

5.02 For any given cost item in the unbundled accounts, allocation should be made to an activity (e.g. P) as either a direct cost (by identification of type or source), by indirect cost, or by default. Joint costs, such as joint general expenses related to administration and support are assigned to activities based on an allocation key.

Allocation key

5.03 The allocation key for joint administration and support expenses in E2GAS is defined by project management and applied to all operators. There is no need to define or calculate individual allocation keys.

5.04 The default allocation key used in similar projects is staff intensity in full time equivalents (FTE). The rationale is based on its verifiability and generality as a cost driver for administrative costs, expenses and services. Thus, separate reports should be made of the number of staff (in FTE) assigned to each function. [SEP]

5.05 Fulltime equivalent staff (FTE) is calculated as the ratio of total number of hours effectuated by TSO (not subcontracted) staff divided by total annual working hours.

5.06 In the absence of staff data and/or in presence of strong dominance of subcontracting for the benchmarked activities, the project team may define an alternative allocation key, e.g. direct expense per activity.

5.07 Direct functional assignment is based on hierarchical arguments (to whom the staff is reporting to) and/or task consistency (staff responsible for activities included in the functional description). Two examples in a non-conforming organization: (i) An IT-engineer works with service and development of software in a department headed by the responsible for maintenance. By hierarchy, the engineer is assigned as staff in function M. (ii) A staff member in a support unit is uniquely charged with monitoring and closure of supplier relations within existing construction contracts. By virtue of

the task consistency, the staff member is assigned to function C. The assignment follows the principles internally accepted in each TSO, no specific documentation is necessary.

- 5.08 Default allocation of joint administration and support costs is to T in case of missing information on staff count.

Sales and revenues

- 5.09 The regulated revenues for core functions are not included in the reporting. The only revenues that may be relevant are fees and rents collected for the use of in-house staff for external services and use of assets by other operators. [COR]

Operating expenses

Payroll costs: Functional staff

- 5.10 The cost for staff includes all mandatory charges, pension allowances etc constituting the gross manpower compensation. [SEP]

Payroll costs: Joint staff

- 5.11 Payroll costs of the Board of Directors, Advisory Boards (similar) and Chief Executive Officer are considered central management and directly assigned to A. [COM, VER]
- 5.12 Payroll costs (including fringe benefits, pensions, employers' contributions and direct levies on salaries) for administrative (legal, accounting, controlling, communication, human resources) and support (security, information systems, office and equipment maintenance) that are not directly assigned to any function by virtue of 5.16 are considered *joint payroll costs* and consequently allocated to A. [SEP]
- 5.13 Possible settlements, compensations or pension costs directly related to previous engagements for staff that may be considered stranded social costs and are out of scope and be reported under (2c), subject to NRA validation.

Purchase of services and goods

- 5.14 Capitalized costs for grid assets should be reported as investments in the investment stream data. All extension investments and replacement investments above the activation threshold reported in 4.03 are included on the balance sheet; Replacements below the limit are included as cost of goods under activity T.

- 5.15 Purchases for non-outsourced maintenance are included in M. [CAP]
- 5.16 Purchase of energy for resale are direct costs for X. [SEP]
- 5.17 Purchase of energy for covering network losses and consumption in compressors for transport and regulation are allocated to T.

General expenses: Functional

- 5.18 Expenses related to supplies, minor tools, repairs, oil etc. that are directly related to grid installations, operations and maintenance are reported under respective function. [VER, COM]

General expenses: Joint

- 5.19 The non-specified operating expenses cover costs like office supplies, rental charges, insurance, traveling expenses, repairs, marketing, illumination, heat, etc. We also find costs for maintenance of non-grid assets (buildings, etc.) in this category. These costs are considered *joint general expenses* in A. [VER, COM, SEP]

Services: Functional

- 5.20 Costs related to legal processes (not related to such proceedings as described in 3.09), communication and third-party valuation, including feasibility and impact studies, are assigned to P. [COM]

Services: Administration/overhead

- 5.21 External services that are not functionally assigned by any of the articles above, or by virtue of 4.07, such as joint administrative and support services, costs for housing and facility services, are considered *joint external services*. [COM, VER].

Services: Telecommunication costs

- 5.22 Operational telecommunication costs related to the metering, control and supervision of the network are to be reported under T. This also includes costs for operating and maintaining SCADA, control rooms and monitoring equipment on pipelines, compressors and regulators. [VER]
- 5.23 Costs for telecommunication related to non-grid use (leased to other operators or to telecom operators, e.g. optical fibers) are to be specified to S, along with the corresponding revenues (if any).

Services: Ground preparation

- 5.24 Costs for ground preparation are to be reported under cost of services under C (construction), unless capitalized with an associated investment. [SEP]

Services: Research and development

- 5.25 The overall costs for research and development, both in-house and external services, are to be allocated to P. [COR, SEP, VER]

Other operating expenses: Insurances

- 5.26 Insurance premiums can be either directly assigned to functions or indirectly as joint insurance cover. Property and liability insurances premiums for construction or maintenance operations, including civil responsibility for third party damages related to grid assets, are assigned to M. If applicable, insurances related to the economic liability of market information, timeliness and/or financial operations are directly assigned to X. As *joint insurance expenses* in A are considered contracts for fire, property and liability on joint assets such as office buildings, cars, office equipment and staff. [COR]

Other operating expenses: Leasing fees

- 5.27 Leasing fees for assets (excluding buildings and land) in benchmarked activities are reported at the corresponding line.
- 5.28 Leasing fees for buildings and land are out of scope and excluded (Cf 3.15).
- 5.29 If leased components refer to grid assets that are not in scope (e.g. control equipment for an LNG terminal), then the corresponding leasing fee is out of scope and excluded. [COR]

Depreciation

- 5.30 As mentioned above (2.04) the actual capital costs and depreciation on grid assets are not used in calculations of the benchmarking, as they are based on nominal values, vary between countries and have a fiscal connotation. The reporting in the sheet is for validation purposes, consolidating with the accounting book value.
- 5.31 Depreciation of non-grid assets (equipment, vehicles and furniture are considered as joint costs under A unless they are attributed to specific function. [COM]

- 5.32 Depreciations for building and installations are out of scope and excluded (Cf. 3.13).

Investment stream

- 5.33 The investment stream data is reported when it occurred, not when the underlying assets are put into operation. [VER]. Appendix B of this guide describes the reporting template in detail.

Upgraded grid assets

- 5.34 Consider two cases: upgrading leading to asset category change (e.g. higher pressure class) and an upgrade to prolong the asset life time. In the first case, the investment is offset by a higher asset base. In the second case, we need to offset the upgrade by changing the CAPEX for the concerned asset to reflect the prolongation of the life time.
- 5.35 First, grid assets that are upgraded at a later time and that are in service during all or part of the benchmarked period are listed in the Asset Data Base in their upgraded quality at the year of upgrading, the same year the original asset is deleted from in the Asset Data Base (cf. Call XY). The corresponding upgrading investment is added to the investment column by asset class (pipelines, compressors, SCADA, other), respectively.
- 5.36 Second, grid assets that are subject to a life-time prolonging renovation at a later time and that are in service during all or part of the benchmarked period are listed in their initial category. The corresponding upgrading investment is added to the column "investments in upgrades (life time , not class)" in the sheet. The initial investment by asset class (pipelines, compressors, SCADA, other) is specified in the year of initial investment.

Scrapped grid assets

- 5.37 Grid assets that are used part of the benchmarked period and then scrapped are included in the investment stream at the year of original investment. The year of service withdrawal, the asset is deducted from the Asset Data Base. The cost of decommissioning net of any proceeds from the salvage of the item is reported under expenses in T, if not capitalized, or as "investment: other equipment", if capitalized.

Spare parts

- 5.38 The overall cost/investment in spare parts related to grid assets is to be included in either the investment stream (if capitalized) or the operating costs under M (if expensed) , c.f. 5.14. [SEP]

Grid assets not in data base

- 5.39 Asset-related buildings and land installations are considered implicitly included in the standard values for the grid assets (e.g. compressor station). Thus, costs for maintenance or repair of such installations are to be included in benchmarked costs (M) to the extent that they are not capitalized and included in the reported investment stream.
- 5.40 For specific grid assets of considerable value, see Call Z.

Construction interest

- 5.41 Interest during construction (bridging finance) is out of scope as a capital cost and not reported. Capitalized construction interest (or other financial costs) is reported in the investment stream and then removed.

Taxes

- 5.42 Direct costs for taxes are excluded by 3.11. In the case of capitalized (embedded) taxes in the investment stream data, report in the sheet.

6. Appendix A: Cost reporting sheet

Introduction

- 6.01 The activities whose cost and efficiency levels will be benchmarked, can be split into three types :
- the purely operational activities, sometimes also called the vertical functions, which comprise grid planning (P), grid construction (C), grid maintenance (M) and transport & metering (T)
 - the joint support function (A), also called the horizontal function, whose cost is composed of the cost of the board + the general management, the central staff and other central services
 - the grid ownership (F), basically the cost of investment.
- 6.02 The activities templates are subdivided into several possible sub-activities. The reason for this is double :
- it is reasonable to suppose that most TSO use some form or another of Activity Based Costing, at a granularity level that suits their needs.
 - it is also reasonable to suppose that not all TSO use the same definitions in the description of the different activities. In this case, a note can be made regarding these differences, noting that the important distinction is between in-scope (T, P, C, M, A, F) and out of scope (S, X, O), not within the two categories.
- 6.03 Concerning the types of costs that are needed for the benchmark, the following ones are considered
- the labor cost of the direct personnel, i.e. the people directly involved in the activity or service that is described. Note that this information is the basis for labor cost adjustments.
 - the cost of services purchased externally in order to perform the activities or be able to offer the own services, and the cost of expensed goods, i.e. the cost of goods used to perform the activity or offer the service concerned. For both categories, a distinction is made between the following cases:
 - purchased services/goods that are not capitalized in the books, but that are expensed in the profit and loss accounts of the year in which they were purchased

- purchased services/goods that are capitalized in the books, and whose cost is then split over several years through the depreciation cost. Here, a further distinction is made between:
 - depreciation cost of grid related assets
 - depreciation cost of other assets (e.g. ICT equipment, cars)
- For goods, purchased energy is specified separately
- For goods, leasing fees (excluding buildings and land) are separated.
- indirect costs of management and support services that are situated at the level of the function (and thus not part of the joint support that is to be reported under function A)
- other costs that are, by definition, not included in any of the categories mentioned above
- from this total will be deducted:
 - the capitalized work that was performed for own account (only applicable to the function C – Grid Construction)
 - the revenues that are generated by the sale of the products or services that form the output of the activities considered, such as the sales of working hours to other companies or income related to commercial non-benchmarked services.

6.04 The amount thus obtained can be considered as the net cost of the activity or service, exclusive of the cost of joint services (see further). This is, in principle, also the cost as it should appear in the Activity Based Costing system, be it that, in the e²GAS project, some costs are «out of scope» since they are irrelevant as far as the (international efficiency) benchmarking is concerned. Cf section 3 of this guide.

6.05 When adding up the net costs of each function plus their shares in the joint services, we should obtain the same figures as published in the annual P&L accounts, provided the following adjustments are made :

- direct costs for out of scope activities
- taxes and fees
- the actual capital costs for debt
- the actual depreciations.

6.06 Provided these adjustments are correctly made, a validation of the data reported in the templates, through a comparison with the P&L

accounts that were published, is possible. Obviously, the contents and the costs of the «out of scope» elements will have to be certified either by the NRA or by a third party before they can be left out.

Benchmarked TOTEX

- 6.07 Benchmarking TOTEX is calculated as the sum of direct costs for the benchmarked activities, less the defined deductions and adjustments, adding the administration and joint costs according to the allocation key (see 5.03 ff) and the standardized capital expenditure (CAPEX) for the in-scope grid assets from the investment stream.

7. Appendix B: Investment stream sheet

Introduction

- 7.01 The investment sheet contains data for the in-scope assets
- the nominal investments per asset class
 - the investment values for upgraded
 - possible corrections for capitalized labor, taxes and planning costs

Year of initial balance

- 7.02 In the case of an opening balance, state the year, if not state earliest year for existing investments (later or equal to 1975).

Activation policy

- 7.03 State any difference in policy with respect to the assumptions in 4.02 and below.

Currency

- 7.04 State currency abbreviation at the year (row).

Total investment (gross)

- 7.05 This value is calculated as the sum of the following columns where the gross investment, excluding any corrections, depreciation and taxes should be reported:
- Investment: pipelines
 - Investment: controllers, meter stations, compressors
 - Investment: SCADA, telecom
 - Investment: other equipment
- 7.06 The differentiation in investment is subject to different techno-economic life times, i.e. the standard real annuities constituting CAPEX.
- 7.07 The default category is “Investment: other equipment”. The default techno-economic life time for investments in this category is the weighted life time for the assets added to the Asset Data Base in the specific year.

Total upgraded assets (life time, not class)

- 7.08 This value is calculated as the sum of the following columns where the gross investment for assets that are upgraded with respect to life time is reported:
- Upgraded: pipelines
 - Upgraded: controllers, meter stations, compressors
 - Upgraded: SCADA, telecom
 - Upgraded: other equipment
- 7.09 The default category is “Upgraded: other equipment”. The upgraded value cannot exceed the nominal investment per class in the same year. The prolonged life time parameters will be presented for consultation prior to the run.
- 7.10 The following columns are voluntary except 7.16. The data are used for various corrections of the investment stream. For all columns below, the default reporting is zero. The columns are summed, thus the same amount cannot figure in two different columns.

Capitalized labor cost (internal and external)

- 7.11 State the total amount a given year of capitalized labor costs (internal staff and outsourced).

Capitalized planning costs (excluding labor as above)

- 7.12 State the total amount of capitalized planning costs (excluding labor above).

Capitalized costs for out-of-scope assets

- 7.13 State the amount of out-of-scope assets (gross of any other exclusion; labor, interest etc).

Capitalized financial costs (construction interest etc.)

- 7.14 State the amount of capitalized financial costs (construction interest etc).

Capitalized taxes, fees and levies

- 7.15 State the amount of capitalized taxes etc.

Construction labor as direct expense, direct subsidies and exceptional depreciation

- 7.16 State the amount for the investments the given year that concerns direct labor costs (reported as cost of labor), direct subsidies (revenues from state or EU), and exceptional depreciation (write-down due to specific regulation). Note that this position will imply a readjustment between OPEX and CAPEX in the benchmarked cost.