

**Study of the Cost
Breakdown for the
services provided by
Eesti Energia AS
Transmission division
to Televõrgud AS**

**Study performed on behalf of the
Estonian Energy Market Inspectorate**

May 2003

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Glossary of Terminology

CAPEX: Capital Expenditure
CCA: Current Cost Accounting
EE: Eesti Energia
EDC: Embedded Direct Costs
EMI: Estonian Energy Market Inspectorate
FCM: Financial Capital Maintenance
FDC: Fully-distributed costs
FL: Forward-looking
HCA: Historical Cost Accounting
LRIC: Long-run incremental costs
MEA: Modern Equivalent Asset
OCM: Operating Capital Maintenance
OPEX: Operational Expenditure
OPGW: Optical Fibre Ground Wire
PV: Põhivõrgud, Eesti Energia Electricity Transmission Company
SAC: Stand-alone costs
TV: Televõrgu AS
WACC: weighted average cost of capital

Introduction

This report has been prepared based at the request of the Estonian Energy Market Inspectorate (hereinafter "EMI"). The purpose of this report is to identify which assets and expenses of the transmission division of Eesti Energia (hereinafter "EE") can rightly be charged to Televõrgu AS (hereinafter "TV") for their use of the fibre optical communications cables (hereinafter "OPWG"). We have performed this review based on the principal of incremental costing which in our opinion, and as has been agreed with the Estonian Energy Market Inspectorate, to be the most appropriate basis for such an exercise. Our work was concentrated on the fixed assets and investments related to the installation of OPGW cable, as well as maintenance and other services provided by EE to support the provision of this service by Eesti Energia AS with excess capacity which is further leased to Televõrgud AS. We have produced this report, in order to lay down our observations and findings related to the service provision, at state whether in our opinion the cost allocation between the core business of EE and service for Televõrgud AS is in accordance with Estonian law and incremental costing methodology. Please also note the review has been performed from the Eesti Energia AS and subsequent energy market regulatory acts points of view, and how the above mentioned business decision affects energy market tariffs. The study does not consider the impact on the telecommunications market, firstly the reason being the fact that its being regulated by the SIDEAMET (telecommunications sector regulator) and thus does not fall under the competency area of EMI, as well as due to the reason that TV business share in the telecommunications area is relatively small and does not hold a dominant position in the market, thus its should not be regulated by a regulatory authority, but rather is a subject to open market competition and conditions. In our opinion agreement between TV and PV does not disturb competition in the telecommunications market. TV is just utilising synergy of PV business, in the same way as for example television cable operators are entering telecommunications market by utilising their existing television cable networks.

The report has been prepared in accordance with the Terms of Reference of the contract signed on 20 December 2002, addressing specifically issues outlined by EMI.

Within this report we have analysed current situation with investments made into the OPGW cable, reviewed the basis of contract for the lease of excess capacity of the PGW cable, and in particular calculation of the service charge for it. We have also prepared a section describing alternative cost calculation methodology, in order to help EMI to understand in more detail principles of various cost calculations and allocation methodologies, that subsequently lead to different final product costs and prices respectively.

The report has been prepared based on the information obtained from the representatives of EE and TV, as well as publicly available sources, in order to validate the alternative cost calculation scenarios, and cost structure should the investment and service have been provided by a third party.

Yours faithfully,

Mark Bringham
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15 May 2003
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May 15, 2003

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INDEPENDENT ACCOUNTANTS' REPORT ON APPLYING AGREED-UPON PROCEDURES

We have performed the procedures set out below, which were agreed with the Estonian Energy Market Inspectorate (Energiaturu Inspektsioon), solely to assist you in evaluating Eesti Energia AS management's assertion about the basis of cost allocation between the Transmission subsidiary Põhivõrk (hereinafter "PV") of Eesti Energia AS (hereinafter "EE") and Televõgu AS (hereinafter "TV"), for the usage of the metal encased fibre optical cable, which also serves as the lightning protection system of the Transmission company. The cost calculation has been prepared by the management of EE and based on the calculation, EE and Televõgu AS have entered into the agreement for the duration of 15 years, whereby EE leases for the given period the excess capacity installed by EE of forty four fibres to Televõgu AS. The basis of the calculations and the subsequent fibre optical cable lease agreement is the responsibility of EE's management. Our responsibility is to express an opinion on the assets and expenses of PV that are charged to TV, the basis of calculations, compliance with the Incremental Costing principles, and compliance with relevant Estonian legislation based on our examination and the information provided to us. Our examination was performed in accordance with International Standards on Auditing applicable to agreed-upon procedures. The sufficiency of the procedures is solely the responsibility of the specified parties. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The procedures that we performed and conclusions are summarised:

1. We have examined the background and scope of the investments made by EE into the lightning protection fibre optical cable (hereinafter "OPGW cable") and the justification of the necessity for the investments. Based on the procedures undertaken by us we identified that portion of the investments made by EE, required to support critical functions of the energy transmission business of EE, the excess capacity installed is being leased to the TV for the period of 15 years, and the end of which the above mentioned investment is assumed to be fully depreciated.
2. We have examined the methodology and its' compliance with Incremental Costing principles (measure the costs of increasing the production output by one additional increment or the costs saved by reducing the production output by one unit, holding the production levels of all other services/products constant. IC include only the direct volume-sensitive costs of the given service/product, excluding all cost categories that do not either demonstrate a causal relationship with the unitary change in output, or do not vary with the output), as well as the reasoning behind the calculation of the charge by EE to TV for the usage of excess capacity installed by EE and leased to TV. Based on our attestations we did not identify any under-costing of an annual service charge made by TV to EE for the usage of excess capacity. The principles of service charge calculation is in compliance with Incremental costing principles and includes interest rate, which recovers the cost of excess investment for EE, that could have been avoided should EE have decided not to invest into the excess capacity.

Our procedures did not constitute an audit of service charges for the usage of excess capacity of fibre optical cables or services related to the maintenance of the OPGW cable provided by EE. Our procedures confirmed

that the basis of allocation of costs, application of Incremental Costing Methodology, and calculation of charges for the excess capacity installed by EE and leased to TV are in line with the Estonian Energy Act and relevant cost allocation methodologies. Our procedures performed also confirmed that the current cost allocation methodology used by EE to calculate service charge for the usage of OPGW cable, fully compensates for the excess investments made by EE, and subsequently does not put additional burden on the electricity transmission tariffs.

With reference to the findings outlined later in the report which is included as an annex to this document, we can state that the procedures of AS Eesti Energia in the context of application of fair cost allocation methodology, for the purpose of cost-oriented pricing and full recovery of the cost related to the investments into the excess capacity are in line with regulatory provisions under Estonian Energy Act, as well as Incremental Costing methodology.

We have based our procedures on the technical attestations that have been given to us by the EE and TV representatives assuming that the information is correct. Due to the sample nature and other inherent limitations of the work, together with the limitations of any accounting and internal control system, there is an unavoidable risk that even some material misstatements may remain undiscovered.

We were not engaged to, and did not, perform an audit or an examination, the objective of which be the expression of an opinion on the specified elements, accounts, or items and on the effectiveness of the internal control over financial reporting, respectively. Accordingly, we did not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information use of the specified parties listed in the first paragraph and is not intended to be and should not be used by anyone other than these specified parties.

Deloitte & Touche

Tallinn, 15 May 2003

2 Cost Accounting Methodologies

Within this section of the report we will try to briefly describe the different cost accounting methodologies and the impact they provide on the final pricing of the products and services of the company.

Depending on the objective and the point of view of the company building the cost accounting model, different methods for assessing the cost of individual services/products can be used. Those cost standards differentiate themselves by the scope and type of costs that are taken into account. The implementation of one particular cost standard will have a significant impact on the costs of a service/product and, subsequently in the context of cost orientated tariffs, on the price.

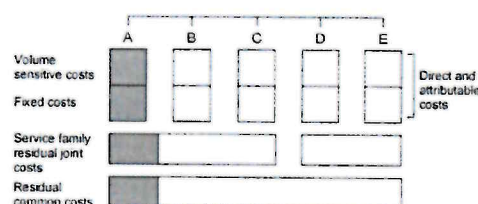
Best practice suggests that in the situations similar to the one subject of this report, the methodology used for cost allocation, is subject to either a legislative restriction, or related party agreement one methodology to be applied.

In the description below service/product wording should be understood in the current context as 44 OPGW cable fibres that are leased to TV by PV. Volume sensitive costs, are the costs of fibres within the OPGW cable, because this cost is fully related to the number of fibre pairs in the cable. Direct fixed cost, is the standalone cost of a metal case used in OPGW cable. Service family residual joint costs, are costs that are not directly to a OPGW cable, but rather to any activities related to business operation with TV (e.g. invoicing TV for the usage of OPGW cable). Residual common costs, are costs that are totally independent of the OPGW cable, such as over administrative costs of PV.

The most commonly used cost standards are *Fully Distributed Costs*, *Stand Alone Costs*, *Embedded Direct Costs*, *Marginal Costs* and *Incremental Costs*, and are briefly presented below:

2.1 Fully Distributed Costs

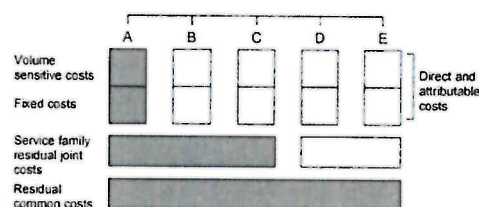
Fully Distributed Costs (FDC), sometimes referred to as "Fully Allocated Costs", allocates all of an organisation's costs to services/products. Therefore, the costs of a given service/product are composed of direct volume-sensitive costs, direct fixed costs and a share of the joint and residual common costs. Usually the proportion of joint and residual common costs is causally related, although no non-arbitrary set of allocation rules exists.



It is precisely the difficulty of allocating unattributable costs that stands as the major drawback of this cost standard: the room left for subjective decision generates the possibility for "favourable" allocations.

2.2 Stand Alone Costs

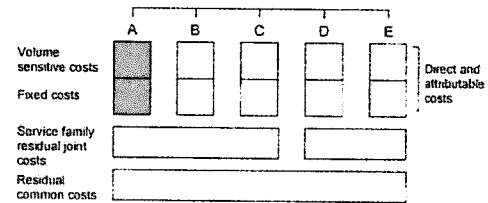
Stand-alone Costs (SAC) is a cost standard that measures the cost of providing a service/product in isolation from the other services of the company. SAC includes all costs directly attributable and all shared cost categories related to production of the service/product, thus including volume-sensitive, fixed, common and sunk costs. Under this allocation method, the shared costs are totally supported by the service/product that is to be provided in isolation.



The SAC cost standard does not lead to economic efficiency if used for pricing and resource allocation decisions. Clients of this service/product bear the burden of the total costs of resource that are used in the production of the other service/products, thus creating cost discrimination among services/products and therefore among customers.

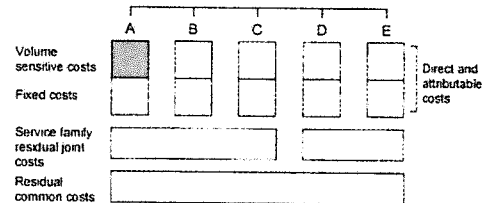
2.3 Embedded Direct Costs

Embedded Direct Costs (EDC) considers only the directly attributable and indirectly attributable volume sensitive and fixed costs.



2.4 Marginal Costs

Marginal Costs measure the costs of increasing the production output by one additional unit or the costs saved by reducing the production output by one unit, holding the production levels of all other services/products constant. This definition implies that Marginal Costs include only the direct volume-sensitive costs of the given service/product, excluding all cost categories that do not either demonstrate a causal relationship with the unitary change in output, or do not vary with the output.

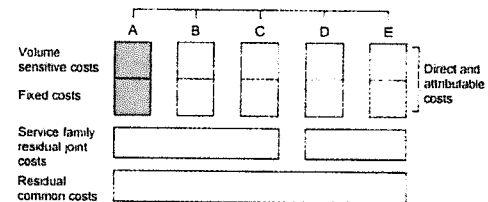


Marginal Costs are hard to implement because costing of unitary changes in production output is rarely possible (capital and labour are difficult to divide). Furthermore, joint and common costs will not be covered and will have to be accounted for when establishing the Mark-up.

Under certain assumptions it can be shown that economic welfare is maximised when prices for goods and services are set at the Marginal Cost of the resources used to produce those goods, and consequently an economically efficient outcome results.

2.5 Incremental Costs

Incremental Costs (IC) associates a long-term horizon to incremental costs. Incremental Costs measure the cost variance when increasing or decreasing the production output by a substantial and discrete increment. In the particular case where the increment considered is a single unit, incremental costs equal marginal costs. Because the increment is substantial, not only the volume-sensitive and directly attributable costs are taken into account. Some capital and fixed costs are also incorporated in the cost of the service/product. In the long-term all costs are treated as variable as the production capacity is not a constraint anymore. Therefore, long-run incremental costs include capital and the volume-sensitive costs related to substantial change in production.



Eventually, IC is the average costs for a unit for the considered increment.

The nature of incremental cost assumes that some level of output is already being produced² and that incremental costs correspond to either the costs of increasing the volume by the increment or the savings related to a reduction in volume equal to the increment. As a result the sum of the incremental costs of all products will not equal the total costs incurred by the company, as incremental cost represents only the additional cost that need to be covered if profitability is to be ensured, not taking into account the fixed common costs.

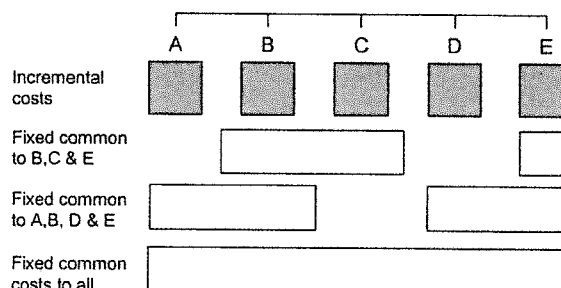
² Which may in theory be zero.

Hence, similarly to Marginal Costs, IC does not allow for the recovery of joint and common costs per se, and requires some form of Mark-up to ensure financial viability.

In theory IC should be forward-looking, as actual costs do not truly reflect the costs that are related to the long-run increment.

The use of a particular cost standard for pricing or management decisions can be justified if its application results in improved economic efficiency and allocation of resources.

Although setting prices at Marginal Cost achieves economic efficiency, this cost standard faces the difficulty of analysing unitary changes in output. Using Incremental costs will overcome this practical measurement issue while keeping the "marginal" nature. However, incremental costs still do not ensure long-term financial viability because no account is taken of residual joint and common costs.



Whereas prices set below Incremental costs would raise competition concerns (possible predatory pricing), it can be easily understood that Stand-Alone Costs are a ceiling that prices should not reach. The optimal price, that generates economic efficiency and allows the Company's long term viability stands somewhere in the middle and is likely to have IC as basis.

Distributed IC calculates the IC cost of each component within a fixed common cost category, and distributes the difference between the cost category IC cost and the sum of the components IC costs on the components using an equal proportionate mark-up (EPMU). In the same way, applying the opposite reasoning can reduce the Stand-Alone costs.

The other approach consists in allocating the costs of fixed and common costs to products according to their consumption of the resources. This approach follows principles close to FDC, using activity-based costing and network costing techniques.

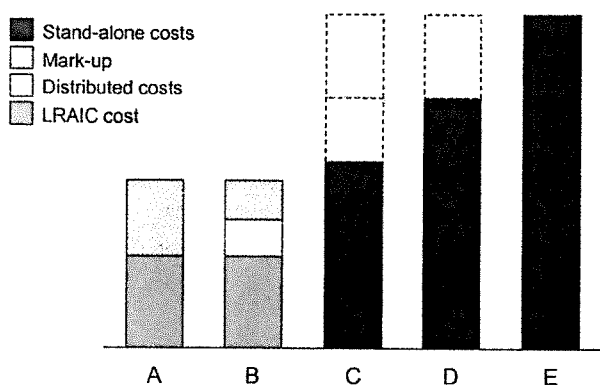


Figure 2 : cost standards to be used

To ensure that companies are not abusing their pricing flexibility, combinatorial tests need to be performed to demonstrate that individual prices equal or exceed incremental costs and that the prices of groups of services which share common costs taken together cover the incremental and common costs of the provision of those services.