



**EDP Distribuição – Energia, S.A.**

Comments on the ERGEG Position Paper for Public Consultation on  
Treatment of Losses by Network Operators

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## ***Introduction***

EDP Distribuição- Energia, S.A. is a Portuguese company and operates the majority of the distribution network in continental Portugal that comprises LV, MV and HV systems connecting over 6.2 million customers.

EDP Distribuição welcomes the ERGEG consultation on the treatment of losses and is broadly favourable to a process of harmonisation at a European-wide level.

Furthermore, EDP Distribuição acknowledges the relevance of defining a good regulatory system providing the right incentives. That is particularly the case of the incentives concerning loss reduction in networks.

In view of the relevance of the subject, EDP Distribuição is willing to actively participate in the consultation process. Our views on the questions raised in the ERGEG Position Paper on treatment of losses are set out below.

### ***A. Regulatory definition of losses***

#### **What is considered an acceptable definition of losses?**

EDP Distribuição favours a definition of losses that may be adopted by the great majority of DNOs (distribution network operators).

Losses could be defined as the difference between the metered units of electricity entering the distribution network and those leaving the network paid for through electricity accounts, whether estimated or metered, in a well defined period of time.

From the perspective of EDP Distribuição, when defined by percentage, losses may be referred either to emissions or to withdrawals but the adoption of a common standard is regarded as an important step towards enabling the comparison of losses across network operators.

#### **Should power losses refer only to technical losses or is it acceptable to include also non-technical losses?**

For the sake of comparability and control, EDP Distribuição is in favour of taking into account both components.

As outlined in the ERGEG Position Paper, the definition of total losses requires that calculations are carried out due to the non existence of continuous metering in all input and output points of the network. Thus, both comparison and control processes depend on the methods of calculation.

Considering this is the case for total losses, difficulties will be greater and the reliance on estimates will increase if losses are to be defined net of non technical losses. In fact, non technical losses will always be defined as an estimate.

### **Which are the key components for defining losses?**

The key components for defining losses are, on the one hand, the network where losses are to be defined – transmission or distribution, where the voltage levels of each one are important factors as well as the boundary between transmission and distribution – and, on the other hand, the source of the losses – technical and non-technical.

EDP Distribuição is in favour of separating transmission from distribution losses. These two activities are operated by legally separate companies and, on the other hand, they are subject to some different issues and constraints.

Furthermore, EDP Distribuição finds it appropriate that the sources of power losses are clearly identified and quantified wherever possible in order to facilitate the comparison processes.

EDP Distribuição regards technical losses as the electrical system losses which are caused by network impedance, current flows and auxiliary supplies. The sources of technical losses may be directly driven by network investment or by network operation.

Non-technical losses, sometimes referred to as commercial losses, arise from several areas including theft, un-billed accounts, estimated customer accounts, errors due to the approximation of consumption by un-metered supplies and metering errors.

EDP Distribuição believes that both public lighting and in-house consumption such as in office and depot facilities should not be accounted for as losses but should be treated as any other type of energy consumption instead, whether metered or estimated.

## ***B. Valuation procedures***

### **What ways exist to improve the evaluation of losses in distribution networks?**

Remote metering, if adequately integrated in Energy Data Management systems (EDM), has the potential to deliver significant improvements, as far as the evaluation of losses is concerned.

The considerable investment involved in extending remote metering to lower voltage customers and the impact on costs and on the organization, demands a careful definition of specifications and of the roll out design.

### **What should be a reasonable and acceptable level of power losses at the distribution level and at the transmission level?**

EDP-Distribuição understands that an acceptable level of power losses at the distribution and at the transmission level may be difficult to establish for a multitude of reasons.

These range from the different voltage levels being operated by TSOs and DNOs in the various countries to their network historic design regarding conductor lengths and conductor cross sections.

Also, the customer density and the level of utilization of peak demand vary considerably with geography and with the predominant economic activity which influence the level of power losses.

Additionally, the varying impact of distributed generation on the profile of losses due to both operation and legal framework (different connection requirements are in place across Europe) should not be overlooked.

Regarding non-technical losses, it may be easier to define a reasonable and acceptable level provided sufficient regulation (relating to definitions and metering) as well as balanced incentives are put in place by regulatory authorities.

In conclusion, if an acceptable level of losses is to be defined, EDP Distribuição is in favour of treating separately TSOs and DNOs. In what concerns DNOs, EDP Distribuição is in favour of defining values individually for every single grid. A set of guidelines could be established but the issues mentioned above should be taken into account.

### **Which types of losses could be more easily reduced?**

The degree of difficulty in reducing power losses will depend on the departure position which is characterised by the actual level of losses. In fact, technical losses level will strongly depend on the network characteristics.

The degree of difficulty will also depend on the growth of the electricity demand that is expected to be a major driver of the rate of network development.

In any case, the reduction of losses will demand an increase of the costs and/or of investment which should be compared with the benefits derived from that reduction.

It should also be noted that a reduction on non-technical losses does not lead to an energy efficiency improvement. However, it would lead to a higher degree of equity in the treatment of customers and shareholders. In fact, if non-technical losses are passed through to customers on the corresponding tariffs, the existence of these losses will mean that some customers are paying for others. On the other hand, if non-technical losses are not passed through in full to customers, the losses “retained” by the distribution operator are paid by shareholders instead.

Reductions of non-technical losses may be possible provided significant additional investment and costs are secured: improved and more accurate metering, data management systems supporting it and more field inspectors. It should be noticed that the potential for further reductions of non-technical losses may be limited given the levels of efficiency already attained.

Technical losses are essentially associated with energy and environmental efficiency. This type of losses is mainly driven by investment in network assets. Reducing these losses requires fundamental changes in the design and in the topology of the networks as well as using more efficient technologies such as low loss transformers or higher cross section conductors. In addition there are trade-offs with CAPEX and OPEX efficiencies as well as with the quality of supply that must be considered in view of the current regulatory framework.

### ***C. Procurement of losses***

### ***D. Regulatory incentives***

**What are the advantages and disadvantages of the aforementioned incentive mechanisms?**

**Which key elements should be considered when assessing different regulatory incentive mechanisms?**

EDP Distribuição believes incentive mechanisms to reduce losses are to be designed in view of the maximization of the social welfare. In order to be efficient, EDP Distribuição thinks that incentive mechanisms for losses reduction should:

- Aim at generating efficiencies where regulated companies effectively possess the ability to exert significant control
- Establish a link between reasonable estimated input (investment or operational costs) and reasonable targeted outputs (such as the intended loss reduction target)
- Share the efficiency gains between industry and customers
- Be simple in their conception being easily understood by all intervening parties
- Be manageable in the sense that data collection and processing requirements should be minimal
- Minimize regulatory risk, taking into account the long useful life expectancy of the network assets and their impact on the overall long term system efficiency
- Be coherent with the regulatory system in place, namely with other incentive mechanisms (quality of supply, CAPEX, OPEX, etc)
- Consider services that may offer value to customers on their own and may also broaden the level of influence of the network operators over losses
- Seize opportunities to renew network assets
- Have into consideration costs not yet internalised in market prices

EDP Distribuição supports incentive mechanisms that broadly comply with the guidelines outlined above.

**Are there advantages in setting separate mechanisms for technical and non-technical losses?**

EDP Distribuição considers it is desirable that separate mechanisms are in place regarding technical and non-technical losses because both the scope and the cost drivers to reduce each type of losses are different.

**Are there advantages in setting mechanisms for transmission and distribution losses?**

Distribution and Transmission are legally separated business. As such, there are advantages in setting separated mechanisms for transmission and distribution.

On the other hand, distribution and transmission businesses are characterised by different planning and operational issues and are subjected to different constraints.

Metering accuracy and metering estimations, for instance, typically impact on lower voltage distribution systems. Also, standard marginal nodal pricing techniques may not be equivalently applied as a losses cost signal for both transmission and distribution networks.