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INDICATIVE LOSS TARGETS FOR THE DISTRIBUTION SYSTEM OPERATOR

Prishtina, December 2011

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1 Introduction

Under the Rule on Distribution System Operator Pricing ("DSO Pricing Rule"), the DSO will be responsible, as now, for purchasing energy to cover distribution losses. This will be done as follows:

- The DSO will receive a Losses Allowance, the costs of which are recovered through its Distribution Use of System (DUOS) charges. The Losses Allowance is calculated as the product of an allowed loss percentage, the volumes of electricity entering the distribution system and the average wholesale price.
- The DSO pays suppliers for actual losses. The amount paid is calculated as the product of the actual distribution losses (expressed as a percentage), the volume of electricity entering the distribution system and the average wholesale price.
- The difference between the Losses Allowance and actual losses is shared between the DSO and distribution system users (through an adjustment to allowed revenues in subsequent years). If the actual losses (in percentage terms) are below the allowed losses (also in percentage terms), then the revenues from the Losses Allowance will exceed the actual costs of losses and the DSO will keep part of the surplus (or part of the shortfall if actual losses are below allowed losses). The other part is returned to users. The share of the losses retained by the DSO is defined by the Loss Sharing Factor. This sharing provides an incentive for the DSO to reduce losses—as it keeps part of the gain from reducing actual losses below the allowed level.

In setting a price control for the DSO, ERO therefore needs to determine values for:

- The allowed loss percentage used in calculating the Losses Allowance.
- The Loss Sharing Factor which determines what share of any surplus or shortfall of the Losses Allowance over actual losses is retained by the DSO.

This document sets out indicative targets of the level of losses allowed to the DSO. The actual values to be applied under each price control will be determined at individual price reviews and will be consulted on as part of the review process.

2 Determining an allowed loss percentage

ERO intends to set allowed loss percentages for each year of a price control period based on the indicative targets established by the Board of ERO. Under the DSO Pricing Rule, the initial transitional price control will last for one year and subsequent controls last for five years at a time. Therefore, ERO will set a loss percentage for one year under the transitional control and for five-year periods under subsequent controls.

The base starting value will be determined with reference to actual losses at the time of the price review. The annual reduction will be determined with reference to past performance in Kosovo, the rates of reduction achieved or allowed by regulators in countries with similar characteristics to Kosovo and the levels of total distribution losses in similar countries.

3 Current loss levels

Distribution losses are measured as the difference between metered energy entering the distribution system and energy measured as exiting the system at customer meters.

These losses are comprised of technical losses, unbilled supplies to minority areas and commercial losses (largely theft)[1]. The level of technical losses is estimated using network models. The level of commercial losses is then calculated as total losses less estimated technical losses.

In its most recent price review[2], ERO allowed total distribution losses of 37.1% of which 17.1% were considered to be technical losses and 20.0% to be commercial losses. The most recent external review of distribution losses was conducted during early-2011 by Advanced Engineering Associates Limited (AEAI) under USAID funding. The review verified the losses reported by KEK and concluded that the methodologies used to estimate technical losses are fundamentally sound. The 2010 distribution losses as reported in the AEAI study are shown below[3].

Figure 1: Current distribution losses

	ETR5 allowed	Reported by KEK	AEAI study
Technical losses	17.1%	17.20%	17.1%
Commercial losses	20.0%	24.02%	20.3%
Unbilled supplies to minorities	-	-	4.1%
Total	**37.1%**	**41.2%**	**41.2%**

[1] ERO defines energy that is metered and billed but not paid for as collection losses or bad debts. These are not the subject of this paper.

[2] Fifth Electricity Tariff Review (ETR5) for tariffs taking effect from 1 April 2011.

[3] The AEAI study calculates loss percentages as losses divided by all energy entering the distribution system including that for internal use by KEK. ERO, in determining allowed revenues, calculates loss percentages as losses divided by energy entering the distribution system less that internally consumed as this avoids distortions in year-on-year comparisons of losses caused by changing levels of internal use. The loss percentages presented in this paper are calculated following ERO's approach.

In ETR5 the target of the level of losses that was approved by ERO, for commercial losses was 20 % including unbilled supply to minority areas.

3.1 KEK energy distribution losses

The reported distribution losses from KEK are shown below.

Figure 2: KEK distribution losses, 2006-10 KEK distribution losses, 2006-10

	2006	2007	2008	2009	2010
Technical losses	18.15%	17.42%	17.05%	18.05%	17.20%
Commercial losses	30.21%	30.68%	25.76%	24.76%	24.02%
Total	**48.37%**	**48.10%**	**42.82%**	**42.80%**	**41.22%**

KEK's losses have fallen by around 7% over a five-year period.

3.2 DSO losses in the region

Figures for losses among comparable energy markets in the region have been obtained from the reports of the respective energy regulators. These are shown below.

Figure 3: Regional distribution losses

	Albania	Croatia	Macedonia	Moldova	Romania	Serbia
2006	41.0%	8.3%	n/a	18.4%	n/a	14.2%
2007	36.4%	9.8%	28.2%	17.3%	n/a	14.2%
2008	34.0%	7.2%	25.0%	16.3%	12.1%	14.5%
2009	35.3%	n/a	n/a	n/a	12.9%	15.2%

Source: Regulators' reports and EPS (Serbia)

Although recent data from regulators' reports are not available, Kosovo's losses are clearly high by regional standards, even when compared to countries that have suffered from similarly poor condition networks such as Bosnia-Herzegovina and Serbia. It is also noticeable that those comparator countries with the highest levels of losses have been able to achieve relatively rapid reductions—of around 2% annually in Albania and 3% in Macedonia (although this is only based on a single year's reduction).

4 Indicative level of allowed losses

After analysis of the comments, ERO understands that stakeholders are concerned that circumstances specific to Kosovo may hinder to slower loss reduction targets in Kosovo. Nevertheless ERO notes that Kosovo is not as different from other countries as stakeholders suggest. ERO further notes that stakeholders have provided little evidence in support of their arguments. ERO agrees, however, that it is necessary to be cautious in making such comparisons.

ERO further notes that the current level of losses is high and that the following indicative loss reductions can be attained:

- Years 1 to 3 – reduction of DSO losses of 3% (percentage points);
- Years 4 to 6 – reduction of DSO losses of 2.5% (percentage points).

The existing values will be determined during the tariff review, taking into consideration decisions for capital expenditure to be allowed in the Allowed Revenues of DSO.

A loss sharing factor of 50% shall be applied. The DSO may propose a loss-sharing factor that places a greater share of the performance for the DSO however this would be reasonable under e scenario where the DSO proposes more aggressive loss reduction targets, compared to those with a sharing factor of 50%.

These values are summarized in the following table:

Figure 4: Indicative electricity loss reduction targets

Indicative loss reduction targets	
Year	**Percentage points**
2012	**3.0**
2013	**3.0**
2014	**3.0**
2015	**2.5**
2016	**2.5**
2017	**2.5**
Total	**16.5**

The indicative electricity loss reduction targets are based on the approved investment plan for the DSO. Any change in the value of investments will be reflected on the indicative loss targets of the DSO.