CER

Commission for Energy Regulation

An Coimisiún um Rialáil Fuinnimh

ESB Public Electricity Supplier Revenue Review 2005

Proposed Direction

CER 04/296
10th September 2004

Decision

This document contains details of the proposed direction by the Commission for Energy Regulation ("the Commission"), to be issued in accordance with Regulation 31 of Statutory Instrument No.445 of 2000, to ESB ("the Board") in relation to the costs underlying charges for electricity ("tariffs") to final customers who are not being supplied in accordance with a licence issued under paragraph (b), (c), or (d) of Section 14(1) of the Electricity Regulation Act 1999 ("the Act").

Under this Direction, the Commission approves an allowable revenue for 2005 of €90.34 million for ESB operating in its capacity as Public Electricity Supplier (ESB PES).

Background

The Commission has carried out a comprehensive review of ESB PES submission in respect of its estimated allowed revenue for 2005. The review was based on the Commission's 2004 Review decision (CER/03/247), which sets out the basis that will be used to determine the PES allowed revenue.

Assumptions

The revenue allowed for 2005 was determined by the application of the formula approved in the 2002 PES Revenue decision paper (CER 02/241). PES allowed revenue is largely based on customer numbers, which are the main driver of its allowed costs and sales in GWh that determine its allowed margin level. The estimated allowed revenue for 2005 is accordingly based on estimated customer numbers and estimated GWh sales. The price control is also adjusted for changes in estimated information factors in respect of both payroll and non-payroll costs.

The price control incorporates amendments to allowed revenues to reflect correction factors resulting from outturn 2004 values, revised forecasts for 2004 and timing differences in the recovery of allowed revenues from year to year. The approved ESB PES formula is attached in Appendix 1.

The following inputs were applied to the revenue formula for 2005:

Inputs	2005 Estimates
Customer No.s	1,861,145
Sales Quantity	13,800 GWhs

Outcome of Review

CER reviewed ESB PES's revenue submission for 2005 and has made a number of changes to the ESB PES estimate:

- Exclusion of depreciation €2.17m in 2003 and €2.17m in 2004 for billing systems as they will be commissioned on 4th January 2005.

- Inclusion of provisional estimate of €10m for information technology systems required for PES for it's 2005 market opening implementation programme.

As a consequence of the above changes CER hereby proposed to allow PES estimated costs for 2005 of €90.34 million.

Appendix 1: Calculation of ESB PES Annual Allowable Revenue

1.1 Total Allowed Revenue

In the base year of 2000 the allowed revenue is calculated as:

$$R_{2000} = ([PfP_0 + PfNP_0] + [\frac{PvP_0 + PvNP_0}{customernu\,mbers}] * customernu\,mbers + M_0 * GWh_0)$$

PES's total allowed revenue in Euro (€) millions for a given year, where t ≠ 2000, will be estimated in midyear *t-1* for January to December of the following year *t* according to the following formula:

1.2 Estimated Allowed Revenue

PES Base Year Allowed Revenue will be indexed in successive years according to the following formula:

$$ER_t = [PfP_{t-1} * (1 + WI - X) + PfNP_{t-1} * (1 + CPI - X)]$$
$$+ ([\frac{PvP_{t-1}}{Ecustomern\,umbers} * (1 + WI - X) + \frac{PvNP_{t-1}}{Ecustomern\,umbers} * (1 + CPI - X)] * Ecustomern\,umbers)$$
$$+ (M_{t-1} * (1 + CPI) * GWH_t) + KDI_{t-1} + KDI_{t-2} + Krf_{t-1} + Krf_{t-2}$$

1.3 Revised Forecast Allowed Revenue

PES Revised Forecast Allowed Revenue will provide a better estimate of inflation, quantities sold and customer numbers. It will be used in the calculation of the initial k factor that will be applied to the allowed revenue of year t+1. The Revised Forecast Allowed Revenue will be calculated in May of year t according to the following formula:

$$RFR_t = [PfP_{t-1} * (1 + RFWI - X) + PfNP_{t-1} * (1 + RFCPI - X)]$$
$$+ ([\frac{PvP_{t-1}}{customernumbers} * (1 + RFWI - X) + \frac{PvNP_{t-1}}{customernumbers} * (1 + RFCPI - X)] * RFcustomernumbers)$$
$$+ (M_{t-1} * (1 + RFCPI) * RFGWH_t) + KDI_{t-1} + KDI_{t-2} + Krf_{t-1} + Krf_{t-2}$$

1.4 Forecast Actual Revenue

PES Forecast Actual Revenue will provide an estimate of the revenue that PES will earn using the revised forecast of customer numbers and GWh. better estimate of inflation, quantities sold and customer numbers. It will be used as part of the calculation of the initial k factor that will be applied to the allowed revenue of year t+1. The Forecast Actual Revenue will be calculated in May of year t according to the following formula:

$$CR_t = [PfP_{t-1} * (1 + WI - X) + PfNP_{t-1} * (1 + CPI - X)]$$
$$+ ([\frac{PvP_{t-1}}{customernu\,mbers} * (1 + WI - X) + \frac{PvNP_{t-1}}{customernu\,mbers} * (1 + CPI - X)] * RFcustomer\ numbers\ )$$
$$+ (M_{t-1} * (1 + CPI) * RFGWH_t) + KDI_{t-1} + KDI_{t-2} + Krf_{t-1} + Krf_{t-2}$$

1.5 Actual Allowed Revenue

PES Actual Allowed Revenue will take account of actual inflation rates, quantities sold and customer numbers, providing the total amount of revenue that PES should have earned. It will be used in the calculation of the secondary k factor, which will be applied to the allowed revenue of year t+2. The Actual Allowed Revenue will be calculated in May of year t+1 according to the following formula:

$$AR_t = [PfP_{t-1} * (1 + AWI - X) + PfNP_{t-1} * (1 + ACPI - X)]$$
$$+ ([\frac{PvP_{t-1}}{customernumbers} * (1 + AWI - X)] + [\frac{PvNP_{t-1}}{customernumbers} * (1 + ACPI - X)]) * Acustomernumbers$$
$$+ (M_{t-1} * (1 + ACPI) * AGWH_t) + KDI_{t-1} + KDI_{t-2} + Krf_{t-1} + Krf_{t-2}$$

1.6 Actual Revenue Earned

PES Actual Revenue Earned will use the actual inflation rates, quantities sold and customer numbers for the year to calculate the total revenue that PES should have earned. It will be used in the calculation of the secondary k factor, which will be included in the allowed revenue of year t+2. The Actual Allowed Revenue will be calculated in May of year t+1 according to the following formula:

$$ACR_t = [PfP_{t-1} * (1 + WI - X) + PfNP_{t-1} * (1 + CPI - X)]$$
$$+ ([\frac{PvP_{t-1}}{customernu\,mbers} * (1 + WI - X) + \frac{PvNP_{t-1}}{customernu\,mbers} * (1 + CPI - X)] * Acustomern\ umbers\ )$$
$$+ (Mt - 1 * (1 + CPI) * AGWH_t) + KDI_{t-1} + KDI_{t-2} + Krf_{t-1} + Krf_{t-2}$$

1.7 K Factors

Revised revenue forecast k factor

Initial k factor

$$KRF_{t-1} = (RFR_t - CR_t) * (1 + I)$$

The k factor above, represents the difference between the revised forecast of PES allowed revenue and the forecast of what will be earned. This calculation will occur in May of year t and will be accordingly recovered/rebated in year t+1 with interest.

Secondary k factor

$$KRF_{t-2} = ((AR_t - ACR_t) - KRF_{t-1}) * (1 + I_{t-1}) * (1 + I_{t-2})$$

This secondary k factor represents the difference between what was earned and what should have been earned less the amount previously recovered. This calculation will occur in May of year t+1 and will be accordingly recovered/rebated in year t+2 with interest.

Pass-through costs k factor

The pass-through costs k factor will correct for differences between the estimated and actual amounts of PES' pass-through costs. The pass-through costs are separately regulated upstream costs and include DUoS and TUoS charges and purchases of electricity. The initial k factor will correct for differences in the estimate and revised estimate of these pass-through costs. This calculation will occur in May of year t and will be accordingly recovered/rebated in year t+1 with interest.

The secondary k factor will correct for the difference between the actual costs and the revised estimate of pass-through costs, less the amount previously recovered. This calculation will occur in May of year t+1 and will be accordingly recovered/rebated in year t+2 with interest.

Revenue Earned k factor

A third k factor will be included in the tariffs from 2003 to correct for changes in revenue earned due to variations in volumes sold. This k factor will incentivise PES to forecast the GWh and customer turnover correctly. This will impose upon PES a similar type of risk that an independent supply company faces. The Revenue Earned k factor is different from the prior k factors as the values on which PES is being incentivised arise from the tariff calculations, rather than the PES Allowed Revenue figures.

The penalty will operate in two stages. The first stage compares the original estimate of total revenue earned and the AUP for year t to the revised forecast for year t, will operate to a band of +/-4% of the original estimate. For example, the original estimate for 2003 is made on August 2002 and the revised forecast for 2003 is made in May 2003. The second stage, which operates to a band of +/-2%, compares the actual revenue earned with the revised forecast. This process will take place for the year 2003 in May 2004.

The Commission has agreed that a non-exhaustive list of 'exceptional reasons' will be assessed when implementing this penalty. These factors will be taken into account when assessing the level of variance between estimated and revised forecast and revised forecast and actual out turn (see Appendix 5 of CER/02/241).

The penalty should be in proportion to the amount that PES can sustain, given its allowed revenues. The Commission has determined that the penalty should not exceed a maximum of €250,000 in any one year.

The mechanism for calculating this penalty, set out below takes into account changes in average unit price and sales volumes.

$\Delta \text{AUP}_{t-1} = (\text{AUP}_{t-1} * Q_t) - (\text{AUP}_t * Q_t)$
$\Delta \text{AUP}_{t-2} = ((\text{AUP}_{t-2} * Q_t) - (\text{AUP}_{t-1} * Q_t)) - \Delta \text{AUP}_{t-1}$

$\Delta Q_{t-1} = \left| (\text{AUP}_t * Q_{t-1}) - (\text{AUP}_t * Q_t) \right|$
$\Delta Q_{t-2} = \left| ((\text{AUP}_t * Q_{t-2}) - (\text{AUP}_t * Q_{t-1})) \right|$

The k factor will be applied to the sum of the revenue variance.

$\Delta \text{TRev}_{t-1} = \Delta Q_{t-1} + \Delta \text{AUP}_{t-1}$
$\Delta \text{TRev}_{t-2} = \Delta Q_{t-2} + \Delta \text{AUP}_{t-2}$

Where the ΔTRev_{t-1} is greater than 4% of the estimated total revenue earned, the penalty will apply to that percentage of the revenue earned greater than 4%. Interest on this amount plus a 2% penalty will be rebated in the following year.

Where the ΔTRev_{t-2} is greater than 2% of the revised forecast total revenue earned, the penalty will apply to that percentage of the revenue earned greater than 2%. Interest on this amount plus a 2% penalty will be rebated in the following year.

ER	Is the estimated total PES revenue allowed.
RFR	Is the revised forecast of the total revenue that should have been earned, given revised forecasted values for CPI, WI, PES Customer numbers and GWh sales.
CR	Is the cash revenue that is expected to be earned, given the revised forecast of customer numbers and GWh sales and the existing charges already built into the tariff.
AR	Is the actual total allowed revenue that should be earned, given actual values for customer numbers, GWh sales, and allowed wage and actual CPI.
AUP	Average Unit Price. This is calculated as the total revenue that PES will earn / total sales volumes.
ACR	Is the cash revenue earned given the actual customer numbers and GWh sales, and the existing charges already built into the tariff.
PfP	Is the fixed cost payroll related expenditure.
PfNP	Is the fixed cost non-payroll related expenditure.
PvP	Is the variable cost payroll related expenditure.
PvNP	Is the variable cost non payroll related expenditure.
WI	Is the wage inflator, PPF until 2003. If a new government agreement is not reached post 2003, CPI will be used.
CPI	Is the average annual rate as published by the Central Statistics Office.
$K_{DI_{t-1}}$	Is any revenue allowed to be recovered in year t deferred from the previous year, adjusted for inflation and interest.
$K_{DI_{t-2}}$	Is any deferred revenue that should have been collected in year t-2 compared to the estimate used when calculating

the value of $K_{DI_{t-1}}$, adjusted for inflation and interest.

$K_{RF_{t-1}}$	Is the difference between the revised forecast of allowed revenues and the estimated revenues that will be earned, with interest.
$K_{RF_{t-2}}$	Is the difference between the actual allowed revenue that should have been earned and the revenues that were earned, adjusting for the previous K factor based on the revised forecasts, with interest.
GWh	GigaWatt hours - Quantity of Electricity Sales
TR	Total Revenue
E	Estimated
Q	Quantity
M	Margin expressed as a value per GWh
RF	Revised Forecast
A	Actual
X	Efficiency factor
I_{t-1}	Is the annual-average-three-month Euribor rate less the European Harmonized Index of Consumer Prices (HICP) plus Irish CPI based on the most recent published information at the relevant time.