



Commission for Energy Regulation

An Coimisiún um Rialáil Fuinnimh

**Determination of Transmission Allowed
Revenues for 2005 Use of System
Tariffs**

**October 2004
CER/04/314**

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1 Introduction

1.1 Basis for Determination

The Commission makes this determination under Section 35 of the Electricity Regulation Act (**“the Act”**) 1999. All amounts in this document are in 2003 prices unless otherwise specified. The allowed revenues are used to calculate the transmission use of system tariffs (TUoS) applicable for 2005. These tariffs are shown in **Appendix 1** of this document.

1.2 Background

On 28 September 2001 the Commission for Energy Regulation (**“the Commission”**) set out its determination of allowable revenues for the transmission business for 2001-2005. ¹ This determination was addressed to:

- ESB National Grid in its capacity as effective Transmission System Operator (**“the TSO”**) in advance of the transfer of the role to EirGrid; and
- ESB Networks in its capacity as licensed Transmission System Owner (**“the Owner”**).

This determination was based on, among other things, the Commission’s interpretation of the roles and responsibilities assigned to both parties under SI 445 of 2000.

The Commission approved the entire network capital programme submitted by the TSO for the period 2001-05 as well as an enhanced maintenance programme. The Commission reprofiled the projected incidence of capital expenditure over the 2001-05 period from that submitted by the TSO to what it considered a more realistic profile. In view of the major ramping up of capital expenditure entailed by the approved programme as well as the continuing uncertainties over the precise demarcation of roles between the TSO and the Owner which were to be resolved by the Infrastructure Agreement, the Commission stated that it would annually review and, if necessary, adjust the allowable transmission revenues in the light of, among other things, achieved capital expenditure. The Commission chose a one-year price control for the TSO for 2002, 2003 and 2004 for both operating and non-network capital expenditure in view of the start up nature of the new TSO’s business and uncertainties regarding its operational relationship with the Owner.

The present determination reviews operational and capital expenditure in 2003 and likely outturn for 2004 as well as projected expenditure in 2005. The physical outputs associated with the 2003 capital programme are described in some detail in **Appendix 2**. The determination makes no substantive change to the approved capital programme for the remainder of the period 2001 to 2005.

¹ See: <http://history.cer.ie/cer01131a.doc>

1.3 One Year Price Control for the TSO

The Commission has previously stated that it is in favour of multi-annual reviews of revenue consistent with efficient regulation and giving incentives to the regulated entity to take initiatives which improve efficiency. Such a control is in place for the Owner for the 5 years to 2005, with adjustments to revenue based on volumetric adjustments for maintenance work carried out at the request of the TSO and other recognised pass-through costs. Given the institutional uncertainties which still surround the TSO business and that many cost items are still largely outside its direct control (e.g. ancillary services, constraints costs), the Commission has decided to retain a further one-year review period for the TSO's operational and capital expenditure.

1.4 2001 Determination Interest Provision

In the 2001 determination the Commission specified that the interest rate which would be applied to under and over-recoveries of revenue would be determined in the following manner, for year t-1 (and similarly for t-2):

I_{t-1} is the average 3 month Euribor rate for the year t-1 deflated by the harmonised index of consumer prices for that year and inflated by CPI_s where s is t-1.

However, in the determination of the allowable revenues for the distribution business the Commission provided that the interest rate would be determined in the following manner:

I_{t-1} is the annual average three month Euribor rate in year t-1 adjusted for difference in the European index and the Irish index in that year.

In 2002 the Commission adopted a consistent methodology for calculating the interest rate for over and under-recoveries. The methodology is:

I_{t-1} is the mean of the twelve monthly average three month Euribor rate between April and March of the year t-1 (i.e. April of year t-2 to March year t-1) and adjusted for the difference in the mean of the twelve point to point Euro zone harmonised index of consumer prices and the Irish harmonised index of consumer prices between April and March of the year t-1.

2 Transmission Revenue – 2003 Outturn

2.1 TSO Revenue

The following tables describe the allowed expenditure and the actual expenditure incurred by ESB National Grid in the performance of its role as TSO for the year 2003.

Table 1: TSO operating costs (€m in 2003 prices)

	Allowed²	Outturn
Constraints	21.02	24.20
Ancillary Services	38.38	33.60
Regulatory Levy	0.73	0.70
Insurance	1.05	0
External Costs	61.18	58.50
Internal Operating Costs ³	20.34	18.93
Service Provision	2.36	2.36
BSBU Costs	1.97	3.10
Maintenance Professional Fees	3.85	4.86
Additional Repair and Maintenance Allowed ⁴	0.91	
Telecoms	3.25	2.90
IT Operating Costs	1.88	0.67
Business Overheads	1.88	1.63
DSM Costs	0.31	0.13
Non Network Depreciation	5.74	4.86
Internal Costs	42.49	39.44

Table 2: Depreciation, Return on TSO Asset Base and Working Capital

	Allowed	Outturn
Return on Assets	1.14	0.86
Finance of Working Capital	0.80	0.80
Total	1.94	1.66

Table 3: Other Revenue

	Allowed	Outturn
Less Other Revenue⁵	1.78	3.62

² As per the Commission's determination of 2003 Allowed Revenues. See: <http://www.cer.ie/cerdocs/cer02124.pdf>

³ This figure includes payroll costs and professional fees.

⁴ As per the Commission's determination of 2004 Allowed Revenues. See: <http://www.cer.ie/cerdocs/cer03223.pdf>

⁵ Other Revenue includes revenue which the TSO has collected such as study and consultancy fees, services, interconnector receipts and capacity margin administration and also receipts which are attributable to the Owner such as ongoing service charges.

Table 4: TSO Revenue/Expenditure

	Allowed	Outturn
Total TSO Revenues	103.83	95.98

Table 5: TSO Capital Expenditure

	Allowed	Outturn
Control Centre Replacement	6.28	5.00
IT	2.97	4.90
Premises etc	1.05	0.30
Total Capital Expenditure	10.30	10.20

The above tables show that there is a difference between the expenditure allowed in the determination for 2003 TUoS tariffs and the outturn as reported by the TSO. The TSO ultimately incurred €7.85m less in overall costs than that allowed in 2003. The main differences in expenditure are discussed below.

2.1.1 External Costs - Difference between Allowed and Outturn

Areas under this heading were identified as being particularly difficult to estimate at the time of making the determination and are to a large degree beyond the control of the TSO. In total, outturn external expenditure amounted to €2.68m less than that allowed for in 2003.

- Ancillary Services costs were €4.78m lower than the allowed amount. The allowed ancillary services comprise Operating Reserve, Reactive Power, Black Start and System Support of which Reactive Power represents the biggest shortfall. The Commission adjusts the allowed revenue accordingly.
- Constraint costs exceeded the allowed amount by €3.18m. Constraint costs in 2003 shall be reviewed in detail by the Commission. Until this review concludes the Commission will make a provision for this increased cost. Where the TSO can show that the increased expenditure has been reasonably incurred it will continue to be treated as a pass-through cost.
- The allowed insurance costs were not incurred by the TSO in 2003 given that EirGrid has not yet taken over the TSO functions. Therefore the Commission adjusts the TSO's revenue downwards by €1.05m.
- The CER Regulatory Levy was €0.03 less than that allowed in 2003. The Commission adjusts the TSO's revenue by €0.03m.

Therefore the Commission adjusts the allowed 2003 external costs downwards by €2.68m to arrive at an ex-post allowed amount of €58.50m. However, it should be noted that this is subject to the Commission's review of constraint costs.

2.1.2 Internal Costs - Difference between Allowed and Outturn

The TSO has submitted its internal costs for 2003 and it has incurred €3.05m less than that originally allowed. The TSO has provided the reasons

for the variations in costs, which are discussed below and the Commission has taken these into consideration.

- Internal Operating Costs and Service Provision

The Commission allowed a baseline amount of €20.34m for payroll and professional fees for 2003. The TSO under-spent on this item by €1.41m. The TSO has advised that the principle reason for this is staff not being employed in line with allowed revenue due to logistical difficulties. The TSO requested a payroll amount for 2003 to cover 176 operational staff with the outturn number employed being 144.

Of the allowed amount the Commission reserves the right to claw back €2.30m in the event that the TSO does not deliver on the agreed TSO Customer/Stakeholder Objectives set out in **Appendix 3**. In addition the Commission made a provision of €2.41m which would also be contingent on the TSO delivering on these Objectives. Therefore a combined sum of €4.71m was allowed subject to the delivery of a level of performance of the TSO as agreed in the Objectives document.

Assuming they are delivered upon, the Commission determined that the TSO objectives should justify the significant increase in the TSO's operating resources in recent years and a further increase in 2003. They should also justify future requests by the TSO for sustained or increased levels of internal operational costs. The Commission feels it is timely to carry out a performance audit of the TSO in relation to the 40-customer/stakeholder objectives in Quarter 4 of 2004. The results of this audit will be taken into account in making a final determination on the 2003 ex-post allowed internal operational costs and the service provision. In this determination the Commission is making the assumption for simplicity that the Objectives have been delivered upon and an amount of €22.70m is provisionally included as an ex-post allowed cost. Both the Commission and the TSO have acknowledged that this provision is contingent on the successful meeting of the objectives/deliverables, which has not yet been quantified. The Commission has informed the TSO that this provision is subject to change and is pending completion of the Commission's audit.

- Business Services Business Unit (BSBU) Costs

As part of the 2001 determination process the Commission allowed €1.68m for BSBU costs for 2002. This was consistent with the TSO's submission of a total staff requirement of 176. In 2002 the TSO requested a provision of €2.20m and, after examination, the Commission allowed a provision of €1.97m to reflect the increased staff numbers in 2003.

The outturn cost as advised by the TSO was €3.10m. The Commission has been advised by the TSO that this cost overspend of €1.13m or 57% reflects the extra space and facilities being charged at commercial rates by ESB Shared Services.

As stated in the determination for 2004 TUoS tariffs⁶ the Commission is of the opinion that the rents agreed in the 2001 determination for the years 2001-2005 are still valid for the building occupied by the TSO. Therefore the Commission concludes that it is unsatisfactory that outturn BSBU costs are very significantly above the allowed amount and therefore does not allow this increased cost.

- Maintenance Professional Fees

The Commission initially allowed €3.85m for Maintenance Professional Fees in its determination for 2003 TUoS tariffs.⁷ Subsequently in 2003 the Commission allowed an additional €0.91m due to the increase in activities undertaken by the TSO during 2003. The TSO has advised that it slightly over-spent against this increased provision by €0.1m stating that it was deemed necessary to do so to maintain the reliability of the system.

The Commission engaged in detailed discussions with the TSO on this issue in 2003 and provided for an additional expenditure totalling €1.439m. €0.53m was allowed for in the revision of the 2001 over-recovery with the remaining €0.91m to be allowed in 2003. This was deemed to be an efficient level of revenue required to perform the functions of the TSO. The Commission does not accept this overspend and does not allow the additional costs incurred.

- Telecoms Costs

The TSO has advised that the main reason for the under-spend of €0.35m in Telecoms expenditure is that some transmission stations did not come on stream as soon as expected thus deferring the impact on the additional Telecom services e.g. NCC services. The Commission adjusts the TSO's allowed outturn costs accordingly.

- IT Operating Costs

In its submission the TSO indicated that it under spent on IT operating expenditure by €1.21m and that this was due to a combination of factors as follows:

- *Business Continuity Centre: €0. 3m*

The TSO budgeted for the full cost of the Business Continuity Centre in Deansgrange for 2003. The lease subsequently negotiated by the TSO resulted in a 9-month rent-free period.

- *Power System Planning- PROMOD: €0.1m*

The full budget costs on PROMOD were not incurred (PROMOD is an hourly Monte Carlo generation production simulation program, used to determine system performance and cost).

⁶ See footnote 4 for link.

⁷ See footnote 2 for link.

- *Power System Operation: €0.5m*

Power System Operation requested projects were significantly under budget in 2003 due to a programme of IT work not completed. This was due to a decision to delay projects as the TSO needed to understand the impact of MAE on the operation of the Power System before incurring this expense.

- *General IT: €0.3m*

The principle reason for the under-spend in general IT is that the TSO obtained a better deal than expected on Oracle licences. This was taken into account in the requested revenue for 2004 and 2005.

The Commission adjusts the TSO allowed revenue to take account of these outturns.

- Business Overheads

The TSO has advised that it incurred €0.25m less than that allowed in this area as a result of not hiring the expected level of staff.

The Commission will take account of this outturn expenditure.

- Demand Side Management (DSM) Costs

The TSO has advised that the DSM allowed costs are spread over 2003 and 2004. Therefore the TSO expects to incur the remaining €0.18m of allowed administration costs in 2004.

In conclusion the above adjustments mean an ex-post allowed revenue for internal operating costs of €39.62m.

2.1.3 Non-Network Capital Expenditure - Difference between Allowed and Outturn

The allowed expenditure for non-network capital expenditure was €10.30m while the outturn expenditure was €10.20m.

Outturn Capex for 2001, 2002 and 2003 have resulted in a recalculation of a return on assets amount of €0.86m and a non-network depreciation amount of €4.86m for 2003.

2.1.4 Summary of TSO Allowed Costs for 2003 TUoS

As a result of the above assessment the Commission allows the TSO an ex-post 2003 revenue requirement of €96.16m.

2.2 The Owner's Revenue

The following table gives the allowed revenue for the Owner for 2003.

Table 6: The Owner's Revenue for 2003 (€m in 2003 prices)

	Allowed
Operating Costs	25.41
Depreciation*	39.56
Operating Profit*	41.13
Total Allowed Revenue	106.09^s

*Note Depreciation and Operating profit are based on the multi annual capital expenditures allowed in the 2001-2005 determination, indexed for inflation.

2.2.1 Maintenance Outturn

The Owner completed 63.95 man-years of maintenance-related work in 2003. This represents a significant increase over the maintenance completed in 2002 which was 50.04 man-years and is marginally above the target of 63 man-years of maintenance allowed in 2003.

Both the TSO and the Owner have on previous occasions highlighted the requirement for increased maintenance of the transmission system due to historic under maintenance. In the first two years of this five-year review (2001-2005), the amount of maintenance completed had been significantly less than that originally predicted. The Owner is expected to complete 79.05 man-years of maintenance in 2004 which, coupled with the 2003 results, will mean a significant decrease in the backlog of maintenance to be carried out on the transmission system. The Owner and the TSO expect this backlog to be cleared by the end of 2005.

The Commission is satisfied with the progress being made in clearing the maintenance backlog. The Commission adjusts the Owner's revenue upwards by €0.13m consistent with the volume of maintenance achieved in 2003.

2.2.2 The Owner's pass-through costs

The Owner has identified the elements of its costs which are allowed on a pass-through basis. These costs are:

- local authority rates which amounted to €6.66m;
- regulatory levy which amounted to €0.67m; and
- the legal fees arising from the preparation of the Infrastructure Agreement which amounted to €0.70m.

These three items add €1.52m to the Owner's revenue for 2003 and the Commission will make this adjustment.

2.2.3 2003 Network Capital Expenditure

In 2003 the TSO and the Owner had planned for 137 transmission projects to be underway; of these 109 were due for completion in 2003 with the remainder continuing over subsequent years. However, due to a variety of reasons including delays in planning permission, the non-availability of wayleaves etc. 109 of these projects were actually underway during the year and of these 76 projects were completed by the end of year.

^s 106.0947

The total gross capital expenditure during the year was €122.34m which equates to a net capital expenditure figure of €111.13m, after account is taken of customer and other capital contributions. In the 2001 determination the Commission forecast a gross capital expenditure of €148.52m and a net capital expenditure of €141.06m.

Although the total capital expenditure was less than the allowed amount this represents a significant increase in investment in the transmission system during 2003. In fact in 2003 the Transmission System underwent its largest expansion that has been recorded in a single year. A summary of the physical progress on the transmission system capital programme made in 2003 and the associated costs during the period 2001-2005 is attached in **Appendix 2**.

Based on the outturn capital expenditure the sums for depreciation and operating profit are €38.22m and €42.46m, respectively. (Note these figures add to €80.68m which is the same as previously allowed).

2.2.4 Summary of TAO Allowed Costs for 2003 TUoS

The net effect of these adjustments is to give an ex-post allowed Owner revenue of €107.75m (i.e. Original €106.09m + €0.13m + €1.52m).

2.3 Allowed Revenue adjusted for 2003 outturn

Table 7 details the allowed Transmission Revenue and TUoS collected.

Table 7: TUoS for 2003

	(€m in 2003 prices)
TSO Allowed Revenue	96.16
Owner Allowed Revenue	107.75
Total Revenue Due	203.91
Total TUoS collected through tariffs	216.23
Owner – Additional Use of Network ⁹	0.27
Total Revenue Collected	216.50
Over-recovery in 2003	12.59

⁹ See Section 6.6

3 2004 Expenditure and Revenue Forecast

The Commission has allowed the TSO to collect €240.26m in 2004 (2003 prices) to cover the costs of both the TSO and the Owner. Of this the Commission allowed the TSO costs of €104.82m. The Commission has requested both parties to identify any significant deviations from the allowed revenues. The table below shows the TSO's forecast for 2004 outturn costs.

Table 8: 2004 TSO Forecast Expenditure (€m in 2003 prices)

	Allowed¹⁰	Forecast Outturn
Constraints	19.98	26.50
Ancillary Services	34.02	34.30
Other External Costs	3.62	3.70
External Costs	57.62	64.50
Internal Operating Costs ¹¹	22.25	25.70
Service Provision	0.52	0.50
BSBU Costs	1.95	2.60
Maintenance Professional Fees	5.58	5.90
Telecoms	3.73	3.80
It Operating Costs	1.75	1.80
Business Overheads	1.97	2.00
Non Network Depreciation	7.49	4.90
Internal Costs	45.23	47.20
TSO Working Capital	0.72	0.72
TSO Return on Assets	1.25	1.26
Total TSO Revenue	104.82	113.68

- TSO External Costs

The Commission has been advised by the TSO that constraint costs are forecast to exceed the allowed expenditure by approximately €6.5m. The Commission notes from previous years that constraint costs carry a high degree of unpredictability or volatility.

The Commission will examine in detail the likely outturn of these costs but believes that it is better not to expose the TUoS customer to volatility in the 2004 TUoS tariff by making a provision to take account of the forecast increase in constraint costs at this time.

- TSO Internal Costs

¹⁰ Allowed as per Commission's determination for 2004 Allowed Revenues. See footnote 4 for link.

¹¹ This figure includes payroll costs and professional fees.

The TSO has forecast increased expenditure in the areas of Internal Operating Costs (Payroll and Professional Fees) and BSBU costs. The TSO has advised that the additional €3.45 in internal operating costs largely represents costs associated with the MAE project and the Commission will review this in next year's determination. In relation to increased BSBU costs the Commission has made its position clear in sections 2.1.2 and 5.1.1.5 of this determination.

- Owner's pass-through costs

The Owner has advised that Local Authority Rates will increase in 2004 to €12.16m. This compares to €6.60m originally allowed in the 2001 determination but was a cost recognised as pass-through. The Owner has advised that the increase is due to the application of the annual inflation factor applied by the Local Authorities and a revision of the allocation basis for technical asset rates between the distribution and transmission businesses.

The Owner has stated that this allocation is now based on accurate and attributable rateable valuations as determined by the Valuation Office in place of the depreciated book value approach previously used by ESB. The impact of this re-allocation brings about a corresponding reduction in distribution rates charges. The Commission will take account of the outturn rates cost when reviewing the 2004 outturn next year.

- Inflation Difference

In 2003 the Commission assumed an inflation rate of 4.3% for 2003 and 3.5% for 2004. The outturn inflation for 2003 was 3.5% and a more realistic prediction for 2004 is now 2.2%. Based on this inflationary factor alone the Commission estimates that the TSO will recover approximately €5.9m more than the allowed amount for the transmission business in 2004. However the Commission does not propose to make a provision for this in the 2005 tariff but will review this once the outturn is known.

In conclusion, the Commission has decided to assume no change in the 2004 outturn expenditure from the allowed expenditure for the purpose of setting 2005 transmission tariffs.

4 2005 Revenue Requested

4.1 Revenue requested by TSO

The following table is a summary of the TSO's revenue submission for 2005.

Table 9: TSO requested revenue for 2005 by function

	€M (2003 prices)
Constraints	27.50
Ancillary Services	35.70
Regulatory levy	0.73
Insurance	1.00
Inter-TSO Compensation Scheme	1.00
TSO External Costs	65.90
CER directed DSO Wires Costs¹²	1.25
Network Repairs and Maintenance	8.46
Non Capitalised Planning and Construction	3.79
System Control (Including Telecoms)	10.07
Power System Computing	5.34
Regulation and Pricing (including Customer Records and Billing)	3.53
Settlement System Administrator	3.77
Corporate Overheads	8.41
Non Network Depreciation	6.56
TSO Internal Costs	49.93
Capacity Margin Management Fee	0.07
TSO Working Capital	0.86
TSO Return on Assets	1.31
Total	2.24
Less Other Revenue	1.50
Provision for Wind Related Work	2.00
Total TSO Revenue	119.82

An alternative way of looking at the breakdown of the "Internal Costs" in Table 9 above is by way of *category* of expenditure. This is detailed in Table 10 below, again drawing on the TSO's own submitted data.

¹² This includes 110kV distribution tariff costs and costs associated with the Grid Upgrade Development Programme for Renewables.

Table 10: TSO requested revenue for 2005 by category

	€M (2003 prices)
Constraints	27.50
Ancillary Services	35.70
Regulatory levy	0.70
Insurance	1.00
Inter-TSO Compensation Scheme	1.00
TSO External Costs	65.90
CER directed DSO Wires Costs	1.25
Payroll	18.40
Professional Fees	6.63
BSBU Costs/Facilities	3.51
Maintenance Professional Fees	7.19
Telecoms	3.19
IT Operating Costs	2.22
Business Overheads	2.24
Non Network Depreciation (incl. SSA)	6.56
Total Internal Costs	49.93
Capacity Margin Management Fee	0.07
TSO Working Capital	0.86
TSO Return on Assets	1.31
Total	2.24
Less Other Revenue	1.50
Provision for Wind Related Work	2.00
Total TSO Revenue	119.82

The TSO also submitted its proposed non-network capital expenditure programme for 2004.

Table 11: TSO Capital Expenditure Proposals

	€M (2003 prices)
Enterprise Applications	6.20
IT Infrastructure	0.79
Telecoms	0.65
Premises/Fixture Fittings	0.11
Power System Support and Projects	1.76
Total TSO Capex	9.41

4.2 Revenue for the Owner

The Commission has not requested the Owner to make a revenue submission for 2005 as the Owner's revenue is subject to a five-year price control which is set out in the 2001 determination. With respect to the allowed capital expenditure incurred in this period the amounts included in the determination were based on an assumed profile of expenditure. The

Commission has taken account of the outturn expenditure in 2001, 2002 and 2003.

5 Commission's Assessment and Determination

5.1 Revenue requested by TSO

The TSO states in its submission that it is important to assess the performance of the TSO against the quality of the service it delivers rather than by comparatively small variations in its own internal business costs. The TSO asserts that undue restrictions on its available resources cause a massively more profound effect on the costs seen by and imposed on the overall industry.

The Commission agrees that the TSO holds a pivotal role in the electricity market and should be adequately resourced. The allowed internal business costs of the TSO have almost doubled since 2000. This can be explained largely by the significant increase in functions that the TSO carries out in a liberalised market and the need for additional resources required in a start-up environment. However, there is a need to ensure that the revenue allowed to the TSO represents value for money to the final customer.

5.1.1 Internal Costs

5.1.1.1 Internal Operational Costs

Payroll and Professional Fees (excl Professional Fees associated with Repair and Maintenance)

In its submission the TSO has requested €25.03m (in 2003 prices) for operational staff costs and professional fees for 2005 (excluding professional fees associated with maintenance). This compares to an allowed provision in 2004 of €22.77m for this item (this includes a service provision of €0.52m¹³) and represents approximately a 10% increase in real terms.

The TSO has supported its payroll submission with the following arguments:

- The TSO faces a payroll that is increasing in 2005 to €18.4m which is driven by:
 1. 2 additional staff to promote and implement the Winter Peak Demand Reduction Scheme (WPDRS);
 2. 2 additional staff to be employed to service the TSO's increased IT security needs and multiple new systems (e.g. TUoS, Ancillary Services etc);
 3. Wage inflation as a result of prevailing market conditions, national pay deals and agreements made between ESB and its unions.
- The TSO remains aware of the potential cost savings from internalising certain outsourced functions and will where appropriate seek to do so.

¹³ Of the 2004 allowed figure for Payroll and Professional Fees €1.04m is an incentivisation mechanism and is performance related. These monies are therefore dependent on the achievement of eight deliverables and objectives.

In previous years the Commission has engaged in detailed consultations with the TSO on the appropriate level of internal operational costs, which it is reasonable to expect the TUoS customer to fund in return for a modern and efficient TSO service. Such a service was recognised as vital in developing Ireland's electricity sector and realising the benefits of market liberalisation.

As part of both the 2003 and 2004 revenue determinations the Commission agreed on number of customer objectives and deliverables with the TSO. This list of objectives was not exhaustive but did represent some of the TSO's key tasks. Over the two years 25 of these objectives had measurable goals, which were referred to as 'Deliverables'. A portion of the TSO's revenue, (€4.71m in 2003 and €1.04m in 2004), can be clawed back if the TSO fails to deliver on the objectives. Attached in **Appendix 3** is a list of the TSO's 2003 and 2004 objectives and deliverables. An update of the TSO's achievement of the deliverables is also shown.

In its submission for 2003 TUoS revenue the TSO requested a provision of €19.04m for staff costs, which was based on 204 staff and included both operational and capitalised staff. In the submission, the number of operational staff was 176, which leads to a payroll amount of €16.43m. In addition the TSO submitted a request of €6m for professional fees. The sum of these figures is €21.70m. The actual operational staff number in 2003 was 144.

In its submission for 2004 TUoS revenue the TSO requested a provision of €18.06m for staff costs based on 176 operational staff. In addition €6.45m was requested for professional fees, the sum of these figures being €24.51m. The Commission allowed €22.77m. The Commission has been advised that the full staff compliment has now been employed.

In the determinations for 2003 and 2004 TUoS¹⁴ the Commission approved a revenue provision based on a combination of payroll costs and professional fees of €22.70 and €22.77m (in 2003 prices), respectively, in return for certain guarantees on performance (the Objectives). The Commission did not explicitly separate staff costs from consultancy costs but rather incentivised the TSO to contain both, as it would be able to retain the resulting savings where it delivered as per the agreed objectives.

The TSO has requested €18.40m for payroll for 2005 based on 180 staff, representing an average staff cost of approximately €102,000, which is broadly in line with the TSO's request last year. With respect to professional fees the TSO has requested a provision of €6.63m, a 3% increase on last year's requested amount. The TSO has submitted a list of projects under various divisions within the business for which this expenditure is required. The breakdown is as follows:

- MD, Finance, Legal & Purchasing (€1.39m)
- Human Resources (€0.70m)
- Transmission Asset Management (€0.46m)
- Regulatory & Pricing (€0.81m)

¹⁴ See footnote 2 and 4 for links.

- Power System Planning (€0.54m)
- Power System Computing (€0.47m)
- Power System Operations (€0.79m)
- Market Operations/SSA (€1.49m)

In past determinations the Commission has allowed a level of internal operational costs, which it considered adequate and reasonable to carry out the TSO's functions in an efficient manner. For this reason the Commission approved a revenue provision based on a combination of payroll and professional fees which would be assessed against the TSO's performance in delivering on its objectives. The Commission will continue to follow this principle for 2005. However, as stated in section 2.1.2 an audit of the TSO's performance is yet to be completed and this will of course be a factor in determining an appropriate level of internal operational costs. The Commission will at this time make a provision of €24.00m for Payroll and Professional Fees for 2005, an amount which is strictly provisional and is subject to revision by the Commission upon completion of the TSO's performance audit. Of this provision €1.00m shall be dependent on the achievement of additional TSO deliverables for 2005 which will be finalised shortly.

The Commission assumes that the TSO will be able to make productivity gains and notes that an efficiency factor is applied to the other network businesses but an efficiency factor is not applied to the TSO at this point. The Commission does not intend to apply an efficiency factor to this element of the TSO costs in this determination given the anticipated take over of the TSO role by EirGrid. Therefore, after taking account of inflation, assumed to be 2.2% 2003 and 2% in 2005, the allowed provision for internal operational costs (including the service provision) equates to €24.78m.

5.1.1.2 Business Overheads

The TSO estimates that business overheads will cost €2.24m (in 2003 prices). This compares to €1.97m allowed in 2004. Included in this figure is training, telephone charges, stationery, travel expenses etc. The TSO states in its submission that business overheads have increased due to increases in staff numbers and the associated cost increases this brings.

The Commission does not consider an increase of 13.7% on the 2004 amount to be a reasonable increase. This represents €270,000 to accommodate four additional staff (€67,500 per person). Therefore, the Commission does not allow the requested increase in full and will make a provision of €2.00m in the 2005 tariff.

5.1.1.3 IT Operating Costs

The TSO has requested a provision of €2.22m for IT operating costs. This compares with a provision of €1.75m in 2004, representing a 27% increase in real terms. The TSO stated that the introduction of the new Energy Management System (EMS) has led to an increase in IT operating costs. The TSO stated that while this system benefits from greater functionality it is significantly more complex than its predecessor and requires greater resources to service and maintain. The TSO has also said that for major IT projects the operating costs would annually be in the region of 20% of the capital spend.

The Commission considers this to be an excessive increase, given that sufficient detailed justification has not been provided by the TSO and it was not brought to the attention of the Commission prior to this review. The Commission considers that major IT operating costs should be discussed in detail as part of the forthcoming multi-annual transmission review. Therefore the Commission does not allow this increase. The Commission allows €2.00m for IT Operating costs. This is a 13% increase which the Commission considers to be sufficient for 2005.

5.1.1.4 Telecoms Costs

The TSO requested a provision of €3.19m for telecom services for 2005. This compares with an allowance of €3.25m in 2003 and €3.73m in 2004. The TSO has stated that it undertook, with ESB Telecoms, a market review which has led to a reduction in telecoms costs and this, coupled with a slight reduction in volume, has resulted in the cost decrease.

The Commission welcomes this decrease and will make a provision of €3.19m for telecom services in 2005.

5.1.1.5 BSBU Costs

The TSO has requested a provision of €3.50m for building charges in 2005. The TSO states in its submission for 2005 TUoS that the facilities cost is based on the actual charge ESB levies for the use of the Head Office and the estimated cost of commercial office buildings in Dublin for the remainder. It said that buildings charges are based on the charges from ESB for 2004 as they were for 2003 and reflect the evolution of space requirements in line with ongoing recruitment. The costs are exclusive of any refurbishment costs that might be incurred in an EirGrid environment.

In addition the TSO has said that €300,000 of the requested provision takes account of the lease for a building to accommodate MAE staff which the Commission has already allowed. Going forward, the TSO has stated that it will continually review its accommodation requirements and adopt the most overall efficient solution from the options available to it, which must take into account previous commitments.

In the 2001 determination the Commission allowed €1.68m for BSBU costs for 2002. This was based on revenue submissions made by ESB and was consistent with the TSO submission of a total staff requirement of 176. In 2002 the TSO requested a provision of €2.1m and, after examination, the Commission allowed a provision of €1.88m to reflect the increased staff numbers in 2003. In 2004 the Commission allowed €1.95m. The current request represents an 80% increase when compared to the allowed provision for 2004 and a 6.4% increase on the requested 2004 amount.

The Commission believes that the rents agreed in the 2001 determination are still valid for the building occupied by the TSO and approves a provision of €0.30m for additional premises. Therefore the Commission will allow €2.25m for BSBU costs in 2005.

5.1.1.6 Repair and Maintenance

In its submission the TSO has requested €7.19m in relation to repair and maintenance costs for 2005, which compares to a requested amount of €8.24m and an allowed amount €5.58m in 2004. The TSO stated that the amount provided for in the submission is broadly in line with its submission for 2004 TUoS revenue with a breakdown in component terms on the same basis as last year.

For 2004 the TSO made a detailed submission on the maintenance professional fees it expected to incur. The TSO submitted a list of the projects to be undertaken in 2004 and the costs associated with these projects. The TSO stated that the requirements identified are essential to providing it with the assurance that it is carrying out its obligations. These consultancy services provided to the TSO are currently arranged as a suite of ten contracts as listed below. TSO requirements for 2004 (in 2002 prices) were:

- Policy standards and procedures - €685k
- Determination of maintenance requirements - €3000k
- Activity monitoring and declaration of fitness - €740k
- Database management and reporting - €400k
- Overhead line conflicts - €600k
- Safety and security - €370k
- Emergency response services - €160k
- Environment - €315k
- ESBI Studies - €650k
- Technical Records - €140k
- Non ESBI contracts - €555k

Looking forward, the division of responsibilities between the Owner and the TSO and the definition of interface arrangements is covered in general terms in the Commission's direction on the Infrastructure Agreement and detailed arrangements are being finalised by the Owner and the TSO. Until these arrangements are in place the existing relationship is covered by the historic practises.

The following main tasks come under the heading of Repair and Maintenance:

- Physical repair and maintenance of the network.
 - Ensuring the maintenance of the network, which includes identifying and specifying maintenance requirements, developing maintenance policies, arranging outages and monitoring of maintenance work.
 - Overall management of the network including managing conflicts of potential development in proximity to assets, environmental and safety issues associated with installations and special studies
- **Physical maintenance work**

Physical maintenance work is mainly carried out by the Owner. Costs are allowed to the Owner based on estimated volume of work and subject to volumetric adjustment for outturn and a 2% per annum efficiency factor is applied to the Owner's revenue. Where the Owner adopts more efficient work practices that deliver savings, it is allowed to keep these savings for a period

of five years. The increase in costs is based on certain agreed adjustments for the increase in volumes. Physical maintenance work continues to be in backlog but the TSO and the Owner have plans to eliminate the backlog by the end of 2005.

The increase in condition monitoring of equipment has led to some increases in activity by the TSO and its contractor ESBI as the TSO considers condition monitoring to be part of its responsibility for identifying network maintenance requirements. As part of the Infrastructure Agreement arrangements condition monitoring is to be a part of the maintenance activity and the responsibilities for this area will pass to the Owner. The Commission allowed additional revenue to the TSO in 2003 to take account of the increased condition monitoring carried out.

ESBI is also involved in providing the TSO with services to audit work carried out by the Owner and provide “declaration of fitness” certificates and re-commission equipment following maintenance. It is also noted that ESBI carry out most protection maintenance activities for the TSO.

- **TSO costs and professional fees**

TSO consultancy costs in respect of the management of the network and maintenance activities has increased from an allowed amount of €2.98m in 2001, and €2.92m in 2002, to €4.19m in 2003, €4.91m in 2004 and a request of €6.55m for 2005 (all at 2000 prices for ease of comparison).

Certain adjustments were made in 2004 for increased volumes and improved condition monitoring practices as identified above. These outsourcing costs have increased whilst at the same time the TSO has increased its own internal resources for these activities.

The Commission engaged with ESBNG to discuss these issues as part of 2003 determination. In 2003 the Commission allowed an increase to the originally allowed revenue for this item, i.e. an increase from €3.85m to €4.76m (2003 prices). This was to take account of the increased amount of work being undertaken by the TSO, for specialist studies and the move to more condition based monitoring. The Commission stands over this determination of allowed revenue and continues to believe that the revenue allowed to the TSO is adequate to perform its functions as the transmission system operator.

The main difference between the Commission and the TSO is the level of costs incurred by the contracting of maintenance activities to ESBI. From the TSO submission it appears that three parties undertake transmission related activities within ESB, namely ESBNG, ESB Networks and ESBI. The allowable revenues for both ESBNG and ESB Networks are regulated by the Commission.

It would appear that the TSO accepts that it would be more prudent to do a number of these tasks, in particular the routine tasks, in-house as the cost incurred would be less the rates paid to ESBI. To date the TSO has relied on ESBI to provide this expertise.

The Commission understands that ESBI provide a dedicated service to the TSO, which the TSO relies upon to perform its functions. The TSO has

highlighted that it would prove problematic to remove the drawings and databases held by ESBI that are used in the maintenance of the transmission system.

Although the contracts awarded by the TSO to ESBI may in themselves be efficient when compared to other consultancy rates, the Commission believes that the structure artificially increases the costs seen by the TUoS customer. The Commission is open to the idea of performing an open book review of the costs of ESBI as was apparently performed by ESB Financial Control.

In summary, the Commission will continue to apply regulatory pressure on these outsourced costs in the expectation that the TSO will apply pressure on the management of the network and reflect this pressure on its contractors. The Commission believes that the allowance provided for in 2004 was sufficient for the TSO to carry out its functions. Therefore the Commission will allow for maintenance professional fees of €5.58m which is in line with last year's determination.

5.1.2 External Costs

5.1.2.1 Ancillary Services

Ancillary Services costs include the provision of Operating Reserve, Reactive Power, System Support and Black Start facilities. The Commission recognises that with a near monopoly provider of generation facilities in Ireland that these costs are not fully within the control of the TSO at this juncture. The Commission would like to see ancillary services markets move to a more competitive situation in the next few years and considers that this should be a key consideration in any new trading arrangements. The current forecast for ancillary services for 2005 amounts to €35.70m the detail of which is set out below:

Table 12: Ancillary Services Expenditure

Ancillary Services	€m (2003 prices)
Operating Reserve	17.20
Reactive Power	13.70
Black Start	1.75
Forecast Rebates	-0.35
Interruptible Load	3.40
Total	35.70

The Commission allowed ancillary services costs as a pass-through cost in previous years. In 2003 €33.60m was the actual outturn and in 2004 €34.02m was allowed. Therefore, the requested increase is 4.9% on the allowed amount in 2004.

The Commission will continue to allow ancillary services as a pass-through cost in 2005 and the Commission proposes to allow this revenue for 2005.

5.1.2.2 Constraints

The current forecast for constraint costs for 2005 is as below:

Table 13: Constraints Expenditure (€m)

Constraints	€m (2003 prices)
Currently forecast	€27.50m

The TSO states in its submission that constraints costs are based on the differences between generator's metered output, instructed quantities and ex-post unconstrained schedules. The costs incurred are due to a number of factors including, reserve requirements, transmission constraints and congestion, load forecast error, generator performance and commercial strategies employed by generators including nomination procedures and bidding. It is possible to perform engineering studies to forecast the additional production costs incurred due to reserve and transmission constraints. Such studies have been performed and indicate a slight decline in constraints volumes in 2005.

However, the financial outturn is heavily influenced by the factors outlined above and behaviour, which the TSO notes, it cannot predict with certainty in the studies. This has resulted in a consistent underestimation of constraint amounts by these studies. The forecast provided accounts for this factor.

The Commission acknowledges that forecasting constraint costs is a complex task. The TSO has noted that constraint costs could dramatically increase in 2005 to €27.5m. However, this assumption is highly dependent on specific factors or behaviours during the period and as such the forecast of constraint costs carries a high degree of unpredictability.

On this basis, the Commission believes that it is better not to expose the TUoS customer to volatility in the 2005 TUoS tariff by making a provision for an increase in constraint costs based on the TSO's assumptions regarding participant behaviour at this time when the engineering studies indicate a slight decline in constraints volumes in 2005. Accordingly, the Commission will continue with the previous estimate of external costs for 2004 inflated to 2005 prices.

In the event that the cost of constraints or ancillary services turns out to be higher than that allowed and the TSO can show that the increased expenditure has been reasonably incurred it will continue to be treated as a pass-through cost.

5.1.2.3 Other External Costs

The TSO will incur costs that the Commission will allow as external costs. These costs come under the following headings:

- **TSO Business Insurance**

The business insurance costs for EirGrid as a stand-alone independent system operator is difficult to estimate, as the business is new to the Irish market. The Commission has allowed this as an external cost in 2004. The TSO has requested a provision of €1.00m for insurance. The Commission recognises that it would be difficult for the TSO to accurately estimate this cost and therefore proposes to allow a provision of €1.00m and will review this closer to the time when EirGrid takes over the duties of the TSO.

- **Regulatory Levy**

The Commission will allow the TSO to recover the regulatory levy through the TUoS tariff. The Commission allows €0.72m for the regulatory levy in 2005.

- **Other Wires Costs**

The Commission allowed certain costs to be recovered by the TSO, which do not relate directly to the transmission business. One of these is the cost of the Grid Upgrade Development Programme (GUDP) for Renewables, which the Commission underwrote by allowing for recovery of the network costs from all customers via the TUoS tariff. The second item is the cost associated in the 110kV DUoS tariff which the Commission has set aside until the completion of the review of the tariff structure which is currently under way. The provision for these items is €2.50m and the Commission will allow this to be recovered in 2005.

5.1.3 Wind Related Expenditure

In the Commission's Direction on 'Wind Generator Connection Policy'¹⁵ the Commission recognised, under the heading 'Administration and Resource Issues' that additional financial resources would be required by the TSO to deal with the backlog of applications and conduct system studies. Specifically Paragraph 53 of the Direction stated:

'The Commission accepts that a major backlog of connection applications has built up as a result of the moratorium and that the lifting of the moratorium and the requirement to conduct the system modeling will have an impact on resource requirements within ESBNG. Consequently the Commission indicated in its draft Direction of 11th May 2004 that the Commission was prepared to look favourably on the provision of funds for such a project. The Commission has recently received an indication from ESBNG of the likely scale of additional financial resources that it expects will be required in the short term and is awaiting a formal proposal.'

An initial provision of €2.00m is requested for wind related expenditure from mid 2004 to end 2005. The TSO envisages that this cost will be accounted wholly or largely for by the hiring of contractors/consultants to cope with the additional work required by the volume of applications, and to make available ESBNG experts' time for work on the dynamic modelling. The TSO estimates that 8 consultants at a cost of €250,000 per consultant for 2005 is a reasonable estimate for consultants of the experience and skills required.

The TSO has stated that over time, it would expect to replace at least some of the consultant requirement with recruited staff, which would, for any long-term requirements, be more efficient. The TSO said it is not expected to be possible to do this in the short term due to very limited availability of this type of resource in the recruitment pool. Also some of the workload may be transitory and the TSO does not intend to recruit for transitory work.

¹⁵See <http://www.cer.ie/cerdocs/cer04245.pdf>

The Commission is of the opinion that the costs are not ongoing but rather are proposed specifically to provide for wind related work on a once-off project basis as per the Commission's Direction. The Direction provided for funds to resource the build-up of wind connection offers and the specific system studies resulting from large levels of wind penetration. The Commission has not received a fully scoped project workplan or timetable for the wind-related studies to be carried out by the TSO. However the TSO has provided the following preliminary high-level scope:

- ***Global Dynamic Studies:***

This is required to gain a full understanding of the implications (from a dynamic stability perspective) of having the 828MW of currently contracted wind farms in operation on the system. This will require the TSO to develop a "base model" of the system (comprising all the 828MW of wind farms) and then performing the various dynamic analysis studies on this model. If there are dynamic stability issues, solutions will be examined and progressed, this stage of analysis may identify constraints to wind-farm operation due to stability reasons.

- ***Application Load Flow/Short Circuit Studies:***

This is required to assess the implications for the system of each applicant from a load flow and short circuit perspective. The current backlog is 88 applications totalling 1640MW. 17 of these are transmission, totalling 721MW. As well as determining the connection method and reinforcements for the transmission applications, the TSO has to analyse the impact of all the distribution applications on the transmission system and identify any system reinforcements which are to be included in the distribution offers. With the level of interactions and possible clustering of connections, it is likely that a number of distribution connections will in fact become transmission connections.

- ***Application Dynamic Studies:***

This is required to assess the implications on the system "base model" of each applicant from a dynamic stability perspective. Present proposals are that the 'satisfactory' models are adequate for the applicant to stay in the queue for processing and allow for progression until the provision of the 'appropriate' validated model in the time-line specified in the Commission's direction. Connection will be subject to the appropriate model being provided. The dynamic analysis of the individual applications is a further major volume of work which is likely to be on-going for some time. It is anticipated that wind projects will continue to develop at an accelerated rate for the foreseeable future, with consequential implications for the TSO costs going forward.

The Commission considers that this is a very important piece of work by the TSO and approves this provision in the 2005 tariff to address the backlog of applications arising from the wind moratorium and to conduct the large-scale dynamic studies from mid 2004 to the end of 2005. The Commission does not allow this cost on a strictly pass-through basis as requested by the TSO, but will allow costs which are efficiently and justifiably incurred. The Commission considers that the application fee should also be examined with

regard to recovering the cost of processing the applications to avoid the additional cost on the TUoS customer.

Due to the importance and scale of this project to the renewable industry and the customer, the Commission shall explore incentive mechanisms once the project is fully scoped. The Commission will require the TSO to provide a report detailing the outcome and benefits of the incurred expenditure associated with the project.

In addition, in the Commission's Direction on 'Wind Generator Connection Policy' the Commission asked, under the heading 'Administration and Resource Issues' that the likely incidence of constraints be estimated. Specifically Paragraph 39 of the direction stated:

'The Commission expects ESBNG to estimate the likely incidence of such constraints on the basis of the overall growth in wind generation connections, and on the basis of local network issues. ESBNG and/or ESB Networks shall provide developers with information to allow them to investigate the likely extent/impact of constraining'.

The Commission would expect that these studies develop indications of the potential level of constraints for wind on a national and regional basis and that the studies should provide indications of areas of potentially greater and lesser constraint. The TSO proposed that that during 2004 it would, in consultation with the Commission, and other interested parties, develop a clear plan and specification of work which it would undertake in this area. The TSO has said that after completion of this planning work, meaningful estimates of costs could be made. It stated that the Commission may choose to wait until that time before making any allowance for cost recovery related to such work or may decide to make a prudent initial allowance at this time for commencement of such work if about €1m. The TSO said that this would be subject to validation and adjustment when work plans are developed.

The Commission considers it beneficial to progress such studies and is very much open to make future allowance for this project once the studies have been scoped and meaningful cost estimates have been derived.

On this basis the Commission approves the provision of €2.00m for Wind in the 2005 TUoS tariff.

5.1.4 Other Revenue

The TSO carries out a number of services for which it charges a fee and collects other revenue, which is netted off the allowed transmission revenue. These services include system studies, capacity margin administration, PSO levy administration and revenue from the interconnector auctions and transmission connections. The TSO submits a forecasted revenue of €1.50m for 2005. The Commission therefore assumes the TSO will collect €1.50m of revenue from these services in 2005.

5.1.5 Non-Network Capex

In the 2001-2005 Determination the Commission provided for a total of €44.54m for TSO non-network capital expenditure. In the period 2001 to 2004 it is forecast that the TSO would have invested €33.80m in non-network capital.

The TSO has submitted details of its capital expenditure programme for non-network items for 2005. The total amount of expenditure amounts to €9.41m. The majority of the expenditure is IT related and is covered in greater detail in **Appendix 4**. Currently the outturn cost for this expenditure is added to the asset base once it has been efficiently incurred. The Commission proposes to continue this into 2005. The various proposed projects can be broken into the following headings:

- **Premises/Fixtures and Fittings**

The TSO has requested a provision of €0.01m for IT hardware and software expenditure and €0.10m for Fixtures and Fittings in relation to its business continuity centre. The Commission allows this amount.

- **Power System Support and Projects**

The TSO has submitted forecast expenditure of €1.76m for this area. The TSO has stated that this level of expenditure is required to ensure the reliability and availability of the existing power system operation systems. The projects in this area are described in more detail in Appendix 4. The Commission makes a provision for this requested expenditure in the 2005 tariff.

- **IT Infrastructure**

The TSO has requested that €0.79m be allowed for costs such as PCs, peripherals, software, servers etc. The Commission considers this reasonable and proposes to allow this expenditure.

- **Telecoms**

The Commission has approved expenditure of €0.65m for the Operational Telephony (OPTEL) system which is used for secure voice communications between generating stations, transmission stations and the Control Centres (NCC and ECC). The Commission is currently reviewing the issue of the appropriate regulatory asset base (RAB) to which this item should be added.

- **Enterprise Applications**

The TSO has submitted a request for €6.20m to cover various IT systems. These systems cover a wide range of divisions of the TSO's business. Among the more significant projects, in terms of cost, which the TSO proposes to undertake or to continue in 2005, are:

- MoreCare Project (€0.55m)
- GPRS Replacement (€0.23m)
- Customer Management System (€0.39m)
- CBT 05 – UCTE to PSSE Data Translator (€0.22m)
- Regulatory Management System (€0.33m)
- Asset Management System (€0.55m)
- TUoS and Ancillary Settlement System (€1.71m)
- Document Management (€0.22m)
- Planning Database (€0.41m)

In fact the TSO has proposed that no less than 28 Enterprise Application projects will be under way in 2005.

The Commission considers it realistic to revise the occurrence of these projects on the basis that a number of issues have yet to be implemented, designed or decided upon, in particular:

- EirGrid has not yet taken over the licensed TSO function;
- a new market being introduced, possibly on an all-island basis; and
- the ongoing consultation on the new structure of the TUoS tariff.

As the details of the new market (or all-island market) and the new TUoS tariff structure are not finalised the Commission does not consider it appropriate to invest in a number of these projects where there is a lack of clarity. Therefore, the Commission does not allow a provision for the following projects at this point:

- | | |
|---|--------|
| • Customer Management System | €0.39m |
| • Regulatory Management System | €0.33m |
| • HR System – Flexitime – (€0.030 allowed) | €0.03m |
| • TUoS and Ancillary Services – (€0.71 allowed) | €1.00m |

The Commission approved the following expenditure for 2004 on the understanding that they were once off projects to be completed in 2004. Therefore the costs associated with these for 2005 are not allowed:

- | | |
|--|--------|
| • Project Management and Tracking System | €0.02m |
| • Asset Management System | €0.55m |

Therefore, the Commission allows a total of €3.88m for enterprise applications for 2005.

- **Summary**

Based on the above basis the Commission allows a total TSO non-network capital spend of €7.20m.

5.1.6 Capacity Margin Incentivised Management Fee

The TSO has proposed that €70,000 of the costs relating to the management of capacity margin administration be incentivised.

The Commission allows this cost, contingent on the TSO's achievement of the following deliverables:

- Produce settlement in a timely and reliable manner;
- Review capacity margin scheme in conjunction with the Commission;
- Produce Quarterly Capacity Margin reports.

5.2 Owner's Revenue

The Owner's revenue has been set for the five-year review period and adjustments to the annual allowed revenues are typically due to the outturn capital expenditure in 2001, 2002 and 2003 and revised inflation forecasts. However, there are further adjustments to be made to the allowed revenue as outlined below.

5.2.1 2005 Network Capital Expenditure

In the 2001 determination the Commission approved the network capital expenditure proposals of the TSO for 2001 to 2005. The Commission re-profiled the expenditure to what it considered a more realistic profile. It also undertook to review the allowed revenue based on actual achieved capital expenditure as assessed through future annual revisions of EirGrid's Development Plan.

The Owner has submitted a revised forecast of capital expenditure for 2004 and 2005 based on information from the TSO which is not significantly different from that forecast in the original determination. The Commission does not see that there is a strong case for adjusting the earlier (reprofiled) forecast of 2004 network capital expenditure of €130m in 2000 prices (gross). The progress on completion of the approved capital expenditure programme for 2001 to 2005 can also be seen in **Appendix 2**.

5.2.2 Local Authority Rates

Network rates are set by government and local authorities and the Commission was advised by the Owner in 2001 that they would be subject to a major review in 2003. As indicated in Section 4 the revision of the allocation basis for technical asset rates between the distribution and transmission businesses has meant a significant increase in the rates applicable to transmission with a corresponding reduction in distribution rates charges. The Owner forecasts an increase of €8.48m compared with the Commission's determination in 2001. The Commission will allow for this anticipated increase in the 2005 tariffs.

5.2.3 Additional use of the Transmission System – Telecoms

The Owner makes additional use of transmission network by renting space on certain assets to a subsidiary company of ESB called ESB Telecoms. ESB Telecoms provides services to the telecommunications industry with these assets. The additional use relates to the use of:

- Poles/Pylons carrying communications antenna/aerials; and
- Masts carrying communications antenna/aerials located within transmission stations; and
- Fibre Optical Cable on transmission lines and in cable ducts.

The Owner has confirmed that it is making no further use of the system.

The Commission retained Mason Communications to carry out a benchmark study on the rates applicable to this additional use of the system. The Owner and ESB Telecoms have responded to the findings of this report and the Commission has taken account of their arguments in coming to its final decision.

With respect to the rent for using mast/pylons the Commission has compared the Owner's submission and the rate recommended by Masons and believes that there are no material differences between them. The Commission determines that a unit charge range per annum will apply.

With respect to masts carrying communications antenna/aerials located within transmission stations the Commission believes that determining the Internal Transfer Value derived on a future earning basis and using a discount factor of 11% is appropriate.

Following discussions with the Owner and ESB Telecoms the Commission determined an appropriate rental charge for fibre optical cable installed on the transmission lines. However, given the advised impact of this rate on ESB Telecoms' business the Commission has decided to allow a grace period in which time the current rate of as determined between the two parties shall continue to apply until end 2006. The rate as advised by Masons will come into effect in 2007 and will be taken into account in setting the 2007 TUoS tariff. This rate shall only be subject to revision if deemed appropriate by the Commission.

All rates above shall apply until 2007 at which time they will be revised if appropriate. The Commission would envisage the resulting charges as specified above being increased by reference to the average consumer price index in subsequent years for the purpose of determining allowable transmission revenues.

On the distribution of these rental charges between the Owner and the general TUoS customer, the Commission believes that 50% to be retained by the Owner is sufficient to incentivise it to make additional use of the networks.

The Table below shows the additional revenue which will be netted off the TUoS revenue requirement in the period 2001 to 2005.

Table 14: Revenue from additional use of the network

Year	Revenue
2001	203,758
2002	163,198
2003	270,518
2004	470,963
2005	490,143

5.2.4 ESB Power Generation Shallow Connection Assets

The current connection charging policy requires new generators, Independent Power Producers (IPPs), connecting to the transmission system to pay for their shallow connection costs only. A shallow connection policy has existed since 1999 under the Commission's direction and had the effect of reducing upfront capital costs facing new entrants. Shallow connection assets are added to the asset register of the Owner but not to the Regulatory Asset Base on which it would earn a return.

Prior to the Commission's direction generators paid for all associated connection costs which effectively formed part of the transmission system. Given that 'shallow connection assets' is only a recently introduced concept in the Irish generation industry it proved difficult to distinguish the appropriate connection costs of ESB's plant when forming the transmission RAB. In 2003 the Commission requested the Owner to propose a methodology for a reasonable assessment of the modern equivalent of the shallow connections of ESB plant. Having reviewed ESB's estimates the Commission concluded that they were reasonable and these costs were removed from the transmission RAB and transferred to the Power Generation RAB.

The purpose of this decision is to ensure that the costs associated directly with the transmission system are recovered through the TUoS tariff for all participants in the same format. The decision has the effect of reducing the Owner's allowed revenue for 2005 by €1.98m.

In addition, IPPs are subject to an Ongoing Service Charge on their shallow connections which do not form part of the transmission RAB. This charge covers the costs of operating and maintaining the shallow connection asset. The Commission will be writing separately to ESB National Grid directing it to apply the Ongoing Service Charge to the shallow connection assets of all generators connected to the transmission system. This will have the effect of reducing the transmission allowed revenues further.

5.2.5 Deferral of Owner Revenue

In the 2005 Determination of ESB Power Generation's (ESBPG's) Allowed Revenues the Commission minimised the substantial under-recoveries of 2003/2004 to be carried over beyond 2005. In its submission for 2005 ESB provided the Commission with details of a €196m under-recovery comprising mainly of differences between actual and forecast fuel costs. Minimising under-recoveries is considered to be in the final customers' long-term interest as it avoids expensive interest payments accruing on the under-recovered amount. It is also of considerable importance that the contestable generation sector can operate in a cost reflective manner. This helps ensure a level playing field.

The Commission must, on the other hand, take a balanced view when considering the resulting spikes in the end-user tariff. For this reason the Commission's decision to substantially reduce ESBPG's under-recoveries still leaves a need for a smaller deferral of €29.91m (2005 prices) of revenue accruing to the non-contestable networks' component of ESB's business, ESB Networks. The Commission apportions this deferral by way of €11.41m of the distribution allowed revenue and €18.50m of the transmission allowed revenue. The Commission considers that this is an appropriate and important means of ensuring more cost-reflective prices from the contestable generation sector.

On this basis the Commission defers €18.50m (2005 prices) of the Owner's revenue for 2005. This deferral will be taken into account in the next multi-annual Transmission Price Control which will take effect from 2006.

6 Capacity Margin

Capacity margin can be described as the capacity required to ensure the expected demand of the system is met even under situations of unexpected failure of generation during system peak demand or unusual or unanticipated increases in demand. Normally this generation would not be dispatched and would not receive payments for its fixed costs through the energy market.

The Commission expected that the scheme would promote the maintenance of a sufficient capacity margin. The capacity margin scheme was brought into effect in October 2001. By the end of 2004 it is estimated that a total of €90 million will have been paid to generators. However, experience to date would suggest that the scheme has had only a modest impact in achieving its objective.

A number of additional measures have recently been taken to ensure that supply meets demand in the coming months and years. These measures include ESB Power Generation procuring temporary generation (104MW) and contracting for capacity with NIE (167MW) and ESB National Grid has put in place a demand side management (DSM) scheme.

Given the modest impact of the capacity margin scheme and the need to implement alternative measures to secure capacity margin the Commission decided to reduce and cap the amount paid to generators under this scheme at €16m. Based on the capacity provided by alternative measures the Commission has decided that the capacity margin scheme will continue to be capped at €16m for 2005.

In addition the Commission will make a provision for the costs of the Winter Peak Demand Reduction Scheme (WPDRS) which the TSO will continue to operate in 2005.

Taking into account an over-recovery in previous years, the cap on capacity margin payments and a provision for the DSM project the Commission will allow the TSO to recover €24.81m through the capacity margin tariff in 2005. Based on an estimated through put in the system of 25,228GWhr and a day factor of 68%, the resulting tariff equates to €1.45/MWhr day consumption. This compares with the 2004 tariff of €1.60/MWhr and represents a 9.4% decrease.

7 2005 Transmission Revenue

Based on the above assessment the Commission determines the allowed revenue for the transmission business to be €255.54m (2005 prices) for 2005 which equates to €238.13 after adjustments have been made for other revenue and over-recoveries in previous years. This represents an average unit price of providing a transmission service of 0.94 cent/kWhr. This compares with the 2004 average unit price of 1.03 cent/kWhr and represents an 8.35% decrease.

A summary of costs is shown in the table below.

Table 15: 2005 Transmission Business Revenue – by category

	€M (2003 prices)	€M (2005 prices ¹⁶)
Constraints	19.98	20.83
Ancillary Services	35.70	37.22
Regulatory Levy	0.72	0.75
Insurance	1.00	1.04
Inter-TSO Compensation Scheme	1.00	1.04
TSO External Costs	58.40	60.88
DSO Wire Costs (including cluster costs for Renewables)	1.25	1.30
Wind Related Expenditure	2.00	2.08
Internal Operational Costs ¹⁷	23.50	24.50
Service Provision	0.50	0.52
BSBU Costs	2.25	2.35
Maintenance Professional Fees (incl ESBI fees)	5.58	5.82
Telecoms	3.19	3.33
IT Operating Costs	2.00	2.08
Business Overheads	2.00	2.08
Non Network Depreciation	5.61	5.85
Internal Costs	44.63	46.53
Capacity Margin Incentive	0.07	0.07
TSO Working Capital	0.76	0.79
TSO Return on Assets	1.11	1.16
Total	1.94	2.03
Total TSO Revenue	108.22	112.82
Owner Operating Costs	34.00	35.45
Owner Depreciation	44.65	46.55
Owner Operating Profit	58.25	60.72
Total Owner Revenue	136.91	142.72
Total	245.13	255.54
Less Correction to Owner's RAB	1.90	1.98
Less Other Revenue – TSO	1.50	1.56
Less Other Revenue - Owner	0.10	0.10
Less 2003 Over-recovery	13.21	13.77
Total Other Revenue	16.71	17.41
Total TUoS Revenue¹⁸	228.42	238.13

¹⁶ 2004 prices based on an assumption of inflation of 2.2% in 2004 and 2% in 2005.

¹⁷ This figure includes payroll and professional fees.

Appendix 1 – Transmission Tariffs 2005

1.A Demand Transmission Charges

Schedule	Charges	
DTS-T	Network Capacity Charge	€ 1,324.2589/MW
	Network Transfer Charge	€ 2.1201/MWh
	System Services Charge	€ 2.3560/MWh
	Capacity Margin Charge	€ 1.45/MWh
	Network Unauthorised Usage Charge	€ 613/MWh
DTS-D1	Network Capacity Charge	€ 1,115.3072/MW
	Network Transfer Charge	€ 2.1201/MWh
	System Services Charge	€ 2.3560/MWh
	Capacity Margin Charge	€ 1.45/MWh
DTS-D2	Network Capacity Charge	€ 4.5846/MWh
	Network Transfer Charge	€ 2.1201/MWh
	System Services Charge	€ 2.3560/MWh
	Capacity Margin Charge	€ 1.45/MWh

Notes to Table:

- DTS-T Tariff Schedule is applicable to Demand Users and ESB (Customer Supply Group in its capacity as the Public Electricity Supplier) supplying a Customer directly connected to the Transmission System at each Grid Exit Point from the date of the customer's connection.
- DTS-D1 Tariff Schedule is applicable to Demand Users and ESB (Customer Supply Group in its capacity as the Public Electricity Supplier) supplying a Customer indirectly connected to the Transmission System via the Distribution System at each Exit Point from the date of the customer's connection where the User's Customer has a connection agreement with a stated Maximum Import Capacity of 0.5MW or greater and quarter-hourly interval metering.

Where possible any Users with Customers that have an MIC of 0.5 MW or above (prior to adjusting for the appropriate distribution loss factor) will be charged based on tariff schedule DTS-D1. In some cases the required information on MICs or required metered data may not be available and these users will be charged on tariff schedule DTS-D2 as a proxy for the DTS-D1 tariff schedule.

- DTS-D2 Tariff Schedule is applicable to Demand Users and ESB (Customer Supply Group in its capacity as the Public Electricity Supplier) supplying Customers indirectly connected to the Transmission System via the Distribution System for all other demand, in aggregate, not served under Tariff Schedules DTS-T and DTS-D1.

1.B Generation Transmission Charges

GTS-T and GTS-D: Generation Transmission Use of System Network Location-Based Capacity Charges

Station	Units	Capacity	Network Capacity Charge Rate €/MW/month	Equivalent €/kW/year
Aghada	AD1, AT1, AT2, AT4	528.0 MW	€621.9850	€7.4638
Ardnacrusha	AA1,AA2 AA3,AA4	89.0MW	-€100.7700	-€1.2092
Bellacorick	BK1,BK2	36.8 MW	-€199.5792	-€2.3950
Edenderry Power		117.6 MW	€335.9550	€4.0315
Cliff(Erne)	ER1,ER2	20.0 MW	-€306.3267	-€3.6759
Cathaleen's Fall (Erne)	ER3,ER4	45.0 MW	-€272.8800	-€3.2746
Golagh	GOW	15.0 MW	€0.0000	€0.0000
Great Island	GI1,GI2	113.0 MW	€283.8025	€3.4056
Great Island	GI3	113.0 MW	€468.7917	€5.6255
Huntstown	CT,ST	352.0 MW	€473.5833	€5.6830
Irishtown		415.0 MW	€706.5517	€8.4786
Lough Ree Power	LG8	128.0 MW	€5.7642	€0.0692
(Carrigadrohid)Lee	LE3	8.0 MW	€358.5825	€4.3030
(Iniscarra)Lee	LE1,LE2	19.0 MW	€450.1350	€5.4016
(Pollaphuca)Liffey	LI1,LI2	30.0 MW	€502.0683	€6.0248
Marina	MR1,MRT	112.0 MW	€367.3542	€4.4083
Moneypoint	MP1,MP2, MP3	862.5 MW	€1,018.5475	€12.2226
Northwall	NW1,NW2, NW3	44.0 MW	€418.2908	€5.0195
Northwall	NW4,NW5	227.0 MW	€1,151.0850	€13.8130
Poolbeg	PB1,PB2, PB3	486.0 MW	€924.7542	€11.0971
Poolbeg	PB4,PB5, PB6	460.0 MW	€718.4350	€8.6212
West Offaly Power	SG8	141.0 MW	€213.6208	€2.5635
TARBG1	TB1,TB2	114.0 MW	€687.5383	€8.2505
TARBG3	TB3,TB4	482.0 MW	€747.5408	€8.9705
Turl_Hil	TH1,TH2 TH3,TH4	292.0 MW	€804.9292	€9.6592
Cunghill		23.8 MW	€0.0000	€0.0000
Derrybrien		60.0 MW	€0.0000	€0.0000
Meentycat		43.6 MW	€0.0000	€0.0000
Derryiron		103.0 MW	€627.2683	€7.5272
	Connected at			
Seorgus Wind	Tralee	15.0 MW	€397.9567	€4.7755
Cark Wind	Leterkenny	15.0 MW	€0.0000	€0.0000
Culliagh Wind	Letterkenny	11.9 MW	€0.0000	€0.0000
Carnsore Wind	Wexford	11.9 MW	€0.0000	€0.0000
Arklow Wind	Arklow	25.5 MW	€406.9308	€4.8832
Raheen Barr Wind	Castlebar	18.7 MW	€0.0000	€0.0000
Moanmore Wind	Tullabrack	12.6 MW	€0.0000	€0.0000
Gartnaneane	Meath Hill	10.5 MW	€0.0000	€0.0000
Beam Hill Wind	Trillick	14.0 MW	€0.0000	€0.0000
Sorne Hill Wind	Trillick	31.5 MW	€0.0000	€0.0000
Richfield Wind	Wexford	20.3 MW	€0.0000	€0.0000
Ballywater		31.5 MW	€155.8492	€1.8702
Booltiagh		19.5 MW	€77.7575	€0.9331
Ballylic	Commons	11.4 MW	€0.0000	€0.0000
Coomagearlahy		10.6 MW	€328.4242	€3.9411
Rathrussan		15.8 MW	€0.0000	€0.0000
Emergency Generators				
Aghada		52.0 MW	€611.4075	€7.3369
Tawnaghmore		52.0 MW	€0.0000	€0.0000

GTS-T and GTS-D: Other Generation Charges:

Generation System Services Direct Trip Charge	€ 1.2307/MW
Generation System Services Fast Wind-down Trip Charge	€ 0.6153/MW

Notes to Tables:

- GTS-T Tariff Schedule is applicable to Generation Users and ESB (Power Generation Business Unit) connected directly to the Transmission System at each Grid Entry Point.
- GTS-D Tariff Schedule is applicable to Generation Users and ESB (Power Generation Business Unit) indirectly connected to the Transmission System via the Distribution System at each Grid Entry Point.

Appendix 2 – 2003 Capital Programme: Physical Outputs

The Capex programme for 2003, as originally agreed, showed 137 projects which were scheduled to be active in 2003; of these 109 were due for completion in 2003 with the remainder continuing over subsequent years.

During the year the number of active projects was reduced to 109 (from 137) and the 109 projects originally due for completion in 2003 were reduced to 76 for a variety of reasons. The reasons include: the non-availability of wayleaves, delays in planning permission, unresolved design issues, civil works delays and outages not being available (on certain heavily loaded lines).

The following is a summary of the final version of the transmission capital work programme.

No. of Live Projects on 2003 Programme	No. of Projects due for completion in 2003	No. of Projects Completed in 2003
109	76	76

At year-end, a total of 76 projects were declared complete. All projects that were progressed to construction stage and scheduled for completion by the TSO were completed.

In 2003 the Transmission System underwent its largest expansion that has been recorded in a single year. A new 400kV Substation was commissioned at Oldstreet and a new 220kV line was built between Cash and Oldstreet to off load the new station. In addition two new 220kV Substations were commissioned at Cullenagh in west Waterford and Clashavoon adjacent to Macroom in Co. Cork and a 110kV line was constructed between Cloon in East Galway to Castlebar. The Oldstreet Station is the first 400kV station to be commissioned since the mid 1980's and the two 220kV Stations are the first to be commissioned since the mid 1990's. In addition, two new 220kV Substations were commissioned at Cullenagh in west Waterford and Clashavoon adjacent to Macroom in Co. Cork and a 110kV line was constructed between Cloon in East Galway to Castlebar. The delivery of these stations has made a significant contribution to reinforcing the Transmission in the south and west of the country.

The goals achieved during 2003 include the following: -

- Installation of one 400kV Substation
- Construction of 51.9km of 220kV Overhead Line (3 Projects)
- Installation of two 220kV Substations
- Construction of 92.25km of 110kV lines (6 Projects)
- Installation 5.4km of 110kV Underground cable (3 Projects)
- Installation of four new 110kV Substations.
- Refurbishment of two 110kV Substations.
- Installation of a shunt reactor and capacitor installations in existing transmission substations:

Shunt Reactor - 100MVAR
Capacitors - 60MVAR

- Diversion of 2km of D/C 220kV Overhead Line
- Uprating/Refurbishment of 396km of 110kV lines involving 15 circuits.

Completion of 2001 to 2005 Capital Programme

Transmission Network Capital Expenditure 2001-2005													
2003 Prices	Work in Progress	2001		2002		2003		2004		2005		Carried Forward	
	Allowed	Allowed	Outturn	Allowed	Outturn	Allowed	Outturn	Allowed	Forecast	Allowed	Forecast	Allowed	Forecast
Gross	51.16	100.94	97.24	148.52	134.69	148.52	122.34	148.52	123.51	148.52	144.21	-	128.39
Contributions		30.80	17.07	9.83	19.87	7.47	11.21	3.65	-	3.36	-	-	-
Net	51.16	70.14	80.18	138.69	114.82	141.06	111.13	144.88	-	145.16	-	-	-

Completion - Gross	-	-	96%		91%		82%	-	83%	-	97%	-	-
Completion - Net	-	-	114%		83%		79%	-	-	-	-	-	-

Appendix 3 –TSO Customer/Stakeholder Objectives

Introduction

This document outlines ESBNG's Customer¹⁹/Stakeholder Objectives in support of the TSO Revenue submission staffing requirements. In total 40 specific objectives are outlined.

It is important to note that the TSO plays a central role in the industry and has a major impact on the costs seen by the industry as a whole. These costs may be:

- (a) **TSO Managed Costs:** costs more directly under the control of the TSO (e.g. ancillary services, constraints, network development), or
- (b) **TSO Influenced Industry Costs:** costs arising to participants as a result of the policies or performance of the TSO, including for example connection and access arrangements, provision of information, timely and efficient handling of queries, connection requests, policy modifications required due to changed circumstances, maintaining best practice in relation to network and system operation technology, etc.

It is much more appropriate that the performance of the TSO be assessed against the quality of the service it delivers under the above headings, rather than by comparatively small variations in its own internal business costs. Undue restrictions on the TSO's available resources have a massively more profound effect on the costs seen by and imposed on the overall industry.

ESBNG accepts that if the resources that it identifies as required are provided to it, then it should expect to be judged on delivery of a quality and efficient service. We would only add a caveat as to the mobilisation time necessary to get to proper service levels, arising from time required for recruitment, training, backlog and procedure design/redesign. For these reasons, while a steady improvement will be recognisable once approvals are in place, it will take a period of one to two years to realise all of the 40 objectives. Having said that, most of the improvements will be in place well in advance of that and some will come into immediate effect. Specific deadlines are indicated for some of the objectives below.

¹⁹ Customers being generators, transmission connected demand and suppliers

1. TSO Implementation & Licence Obligations

In establishing the TSO function the 1999 Electricity Act sets forth a number of obligations previously not performed by the TSO in Ireland. A number of other necessary elements, while not specific licence obligations, are essential "must-haves" for a TSO business.

1.1. Provision of Connection Offers in a consistent and timely manner.

The current level of connection applications, pre-feasibility studies, and re-quotations following acceptance of an offer, must be dealt with to facilitate new market entrants and to continue to facilitate connections for the DSO. Generation customers have raised this as an issue requiring resolution.

1.2. Review and re-design the generator connection process.

A redesigned process is expected to reduce administration & analysis costs and streamline/shorten the time to connect new parties to the system.

Deliverable 1:

Reduce the Generation Connection Offer Process from the existing 90 business days to 70 business days, to be applied to applications received on or after 1st December 2002

Deliverable 2:

Comprehensively review the Generator Connection process and propose a revised process to Commission by 31st January 2003.

- The above deliverables were achieved by the TSO by the respective dates.

1.3. Review and re-design the generator connection agreement.

A redesigned agreement is expected to be easier for parties to understand (reducing their overhead costs) and easier for the TSO to administer. The current agreement is a combined agreement which incorporate Connection construction, Use of System and on-going Connection terms and obligations. This, in conjunction with a number of recent changes (e.g. deep to shallow charging, firm/non-firm), has made the agreement unwieldy. Pending changes (e.g. contestability) if accommodated without a redesign will complicate the agreement further.

Deliverable 3:

Submit to Commission for approval, a revised Generator Connection Agreement (or agreements) by 31st May 2003.

- *Deliverable 3 was achieved by the TSO.*

1.4. Develop, publish and administer a demand connection process.

This will enable a clear, consistent and transparent process for connecting new demand to the transmission system. Developing and publishing a process will make clear TSO and customer obligations.

Deliverable 4:

Submit to Commission for approval, a Demand Connection Process by 31st January 2003

- *Deliverable 4 was achieved in conjunction with deliverable 2.*

1.5. Develop and publish a demand connection agreement.

An industry standard transmission demand connection is required to provide clear, consistent and transparent terms for connection for demand customers.

Deliverable 5:

Submit to Commission for approval, a Demand Connection Agreement (or agreements) by 31st May 2003.

- *Deliverable 5 was achieved in conjunction with deliverable 3.*

1.6. Planning an efficient reliable network in a timely fashion.

Network planning has traditionally been carried out on a four-year cycle. Increasing uncertainty and the greater pace of change in the electricity market requires more frequent and comprehensive updates.

1.7. Publication of section 38 Forecast Statements in timely manner.

The publication of the Forecast Statement and Generation Adequacy Statement each year will provide the market with essential information regarding connection opportunities.

Deliverable 6:

Submit next completed Generation Adequacy Report to Commission by 30th November 2002.

Deliverable 7:

Submit next completed Forecast Statement to Commission by 31st March 2003.

- Deliverables 6 and 7 were both met, the Commission agreed to a two-month extension for deliverable 7. Both documents were published and can be viewed on the Eirgrid website at www.eirgrid.com.

Development Plan

Deliverable 8:

Develop proposals in relation to the Development Plan and its consultation process and discuss with Commission by 1st December

2002, with a view to ensuring that EirGrid will be in a position to comply with Condition 6 of the TSO licence when this becomes operational.

- The TSO has completed deliverable 8.

1.8. Transmission Planning Criteria, Operational Criteria and Security Standards.

The criteria and standards form the basis of network expansion, grid access decisions, and grid operations and so impact directly on tariffs, connection lead times and quality of supply. Under the TSO licence, standards are to be proposed to Commission for approval with a review to take place within 12 months.

1.9. Manage the increased complexity, under the restructured industry, in matching demand with supply and ensuring reserve capability including nomination process, ancillary services management and interface with various market participants.

Management of the restructured industry & market requires additional effort to ensure reliability and continuity of supply to customers. Prior to restructuring, as everything was managed centrally, processes were essentially internal "command and control" whereas the new industry structure gives greater freedom to generators to decide running and outages.

1.10. Establish performance monitoring for compliance with Grid Code and Ancillary Service and System Support Service arrangements.

Greater complexity of the new industry structure including Grid Code compliance requirements and commercial arrangements has created additional requirements for monitoring, analysis and reporting. Monitoring and ensuring the performance of connected parties (generators, transmission connected demand and the DSO) ensures system performance and service to customers is maintained and will not diminish as a result of restructuring. This is more complex to manage in a manner, which closely observes generator's technical and commercial requirements while ensuring system security meeting constraints at the most economic cost.

1.11. Establish/negotiate commercial agreement for the provision of Ancillary Services.

Formalisation of service provision requirements will allow for implementation of performance standard and non-performance remedies to ensure fair value is achieved for payments rendered.

Deliverable 9:

Complete formalisation of service provision requirements in commercial Ancillary Service Agreements by 1st January 2003.

- *Deliverable 9 was completed by the TSO.*

1.12. Resolve Grid Code implementation derogation backlog.

Implementation of the Grid Code has resulted in a significant volume of derogation requests, which require significant effort to resolve. This includes review of a number of important elements of the code in light of emerging generation technologies, which must be progressed to meet the requirements and aspirations of developers.

Deliverable 10:

Eliminate 90% of the current backlog of Grid Code derogations by 31st December 2002 (subject to necessary technical information being available).

- *Deliverable 10 was achieved by the above date.*

1.13. Development of a permanent billing system for transmission use of system (TUoS).

A permanent but flexible system is required to ensure TUoS charging will occur reliably into the future and be ready to facilitate tariff design changes as new methods are reviewed and approved.

Deliverable 11:

Develop, test and implement a new comprehensive TUoS settlement system by 30th June 2003.

1.14. Development of a permanent settlement system for Ancillary Services.

A permanent but flexible system is required to incorporate revenue class metered values and ensure ancillary services settlement will occur reliably into the future and be ready to facilitate payment design changes as new methods are reviewed and implemented.

Deliverable 12:

Develop, test and implement an Ancillary Services settlement system by 30th September 2003.

1.15. Support for other energy market developments under consideration by Commission (e.g. the criteria for market participation, support for standing bilateral contracts, secondary pricing) may require extra resources depending on outcome.

Given increased market opening and new participants, overheads on report production, checking, reconciliation and query management are all expected to increase, with resources required to keep to the timetable.

2. Service Delivery

Improvements are proposed for the fundamental TSO services, which will increase their value to customers and stakeholders.

2.1 Support for Energy Market trading nomination acceptance on a 7-day basis.

This would allow generators and suppliers to "fine-tune" their day ahead energy nominations over weekends (rather than the current agreed process where energy nominations for a Monday are made on a Friday). Some formal indication of market requirements would be required before implementing this process.

2.2 More dynamic calculation of Interconnector ATC.

Improve interconnector ATC calculations to ensure that, on a given day, as much capacity is available, given system conditions, to parties wishing to import or export.

2.3 Development and maintenance of a tariff forecasting function to provide reliable forecasts of input costs and transmission system usage for development of use of system tariffs.

Improved forecasting of costs (e.g. constraints) and utilisation (e.g. tariff energy & demand variables) will allow for more reliable tariffs, which will be much less in need of adjustments and carry-forward of over or under collection and more reflective of the actual costs to serve customers in that year. This will also facilitate a move toward incentivising the TSO to control costs for which they are accountable and to deliver value to the industry.

2.4 Proactive analysis and management of Ancillary Service, System Support Service and Constraints costs.

Proactive analysis and management will allow more detailed strategies to be developed to manage these costs. It is important to note that the costs seen by the TSO for Ancillary Services and Constraints is in the order of €60m per annum. Proactive and diligent management through procurement arrangements and through daily implementation of management strategies will deliver much greater benefits than the costs of additional personnel and systems required to do so.

2.5 Proactive dynamic event analysis for determining the best mix of Ancillary Service products to meet system response requirements.

Examine pre and post event response of Ancillary service product mix to determine the most cost-effective manner to meet system performance requirements.

2.6 Review and scope development for additional business system requirements (e.g. Capacity margin, PSO levy, forthcoming review of trading arrangements) which may arise).

The TSO is a central administrative function in the industry and may be asked to perform many supplemental administrative functions on behalf of the industry for the ultimate benefit of customers for which resource would not normally be dedicated.

3. Information Provision

Customers' requirements for information provision have grown considerably under the restructured industry, particularly in light of the new forms of customers, generators and suppliers. Interacting with these new customers and demand customers connected to the transmission system represent a new business requirement for the TSO. More generally international experiences suggests that arising from their independence and central responsibilities that the TSO plays a pivotal role providing information to the industry in every restructured jurisdiction.

3.1 Statements of TUoS Charges and Structure of Charges

To be submitted to Commission for approval within two weeks of determinations of allowed revenues.

Deliverable 13:

Submit Statement of Charges to Commission for approval, within two weeks of receiving clear information from Commission on approved revenue.

- *Deliverable 13 is an ongoing requirement to be carried out by the TSO. It was fulfilled following the 2002 Revenue Review for 2003 Use of System Tariffs.*

3.2 Derive and publish indicative tariffs and loss factors.

This will allow generation (and demand) developers to have better insight into future charges and loss factors, which should, ultimately, increase investor confidence in the market.

3.3 Develop and implement an improved process to co-ordinate outages and advise customers of system works, which may affect their operation (i.e. single ending) in a timely manner.

This process will improve co-ordination with customers and allow customers to manage internal risks better with a higher level of knowledge of system conditions, which may affect their operations. A number of customers have raised this as a problem requiring resolution.

3.4 Develop and implement an improved process for dissemination of power quality and system disturbance information to customers.

This process will provide more timely information to customers on system disturbances and power quality as it affects their operation. A number of customers have raised this as a problem requiring resolution.

3.5 Implement processes whereby customers requests, queries and information requirements are handled in a timely manner through a combination of personal interaction and communication via email and the website in a targeted (by audience) and customer friendly manner.

This will provide a greater degree of accessibility and understanding of the transmission system, processes a customer must undertake to obtain

connection to and or use of the system and make it easier for customers to interact and do business with the TSO.

3.6 Provide resource to provide greater facilitation and education to parties in connecting to the system or in applying for use of system.

This will allow customers coming on to the system to quickly develop a fuller understanding of the system and processes and their obligations and responsibilities as a user.

Deliverable 14:

Provide formal Stakeholder workshops of up to [5 days] total duration per annum on [subjects to be agreed].

- *This deliverable is also an ongoing annual requirement of the TSO. The TSO has provided 6.5 days of workshops and has achieved deliverable 14.*

The workshops provided by ESB National Grid throughout the year were as follows:

- *Superposition (½ Day)*
- *Connecting to the Transmission System (2 Days)*
- *EPUS (1 Day)*
- *Demand Side Management/Interruptible Load (3 Days)*

3.7 Provide resources to allow greater interaction with customers allowing the TSO to better understand customer needs.

This will allow the TSO to adjust processes and services to better meet customer needs and to assess what new services are needed.

4. Policy Development & Issue Resolution

Initial policy development and implementation issues, international experience and developments, evolution toward a full market opening in 2005 and changing governmental and social policies all contribute to a changing environment for the TSO. This creates an essential requirement for the TSO to undertake constant review and examination of TSO policies and policies affecting the TSO and the TSO's customers and stakeholders.

4.1 Allow the TSO to undertake timely policy reviews to reflect changing industry conditions.

This is required to support the required response to changing circumstances and new policy developments (e.g. contestability) which continuously arise.

4.2 Allow the TSO to better meet Commission timetables for submissions, consultation responses and information requests.

This allows more expeditious resolution of issues and should assist promoting best decisions.

4.3 Allow TSO the opportunity for greater consultation and communication with stakeholders including more consultation forums.

This allows for a greater understanding by the TSO of stakeholder issues and allows for more expeditious resolution of those issues.

4.4 Review of Transmission Loss Adjustment Factor (TLAF) Methodology for consistent outcomes through the full range of generator sizes and dispatches.

This may allow for the implementation of a revised methodology, which would allocate losses to generators in a manner more consistent with their loss contribution.

Deliverable 15:

Review Transmission Loss Adjustment Factor (TLAF) Methodology and report on outcome and proposed future methodology (if different) by 31st May 2003.

- *The TSO has reported on the consultation process and the outcome of the TLAF review and posted it to its website. Deliverable 15 has been achieved.*

4.5 Review charging and loss factor application for volatility and examine methods to manage volatility.

Reduced volatility in charges and loss factors will increase developer confidence in the Irish market and ultimately improve end customer energy prices through reduced developer risk premiums.

4.6 Review elements of the tariff design (e.g. MIC based charging) for desired outcomes and examine other methods.

Determine if tariff design elements are achieving their desired outcome, including design objective, transparency and ease of administration.

4.7 Support the development of EU policy for cross border trading arrangements and review present interconnector trading arrangements for conformance with EU directions and continental Europe integration.

This will allow for more effective electricity trade between Ireland and the rest of Europe allowing for increased supply and generation market access.

5. Facilitating Competition

The TSO, as an independent central industry function, plays an essential role in facilitating competition. As evidenced by developments in England and Wales over the last decade (including the review and subsequent development and implementation of new trading arrangements - NETA), the TSO's role in facilitating competition is without end.

5.1 Support the All-Island market review for overall design workability particularly for indicative implications on generation costs and transmission network developments, and arrangement for ancillary services, system support services and congestion and constraints.

A workable all-island market has the potential to improve trade, reduce transaction costs, improve investor confidence and increase the market participation base.

5.2 Increase the Ancillary Service supplier base.

Improve access to new providers of Ancillary Services and ultimately reduce customer costs through a broader and more competitive supplier base.

Deliverable 16:

Complete competitive procurement process for a new Black Start source by 30th April 2003.

- *A suitable generator did not come forward to participate in the procurement process to offer the Black Start service. The TSO is to decide on a suitable time to revisit the process. Nonetheless deliverable 16 has been achieved.*

5.3 Increase the Interruptible Load Service supplier base.

Improve access to new providers of Interruptible Load Service and ultimately reduce customer costs through a broader and more competitive supplier base.

Deliverable 17:

Design, develop and implement a suitable procurement process for the procurement of Interruptible demand by 31st July 2003.

- *Deliverable 17 has been achieved.*

5.4 Establish contestability processes for transmission connections.

Subject to Commission direction on policy formation and legislative interpretation, processes, agreements and specifications/standards will be required to facilitate contestable connection while ensuring such connections will not jeopardise system integrity (through substandard design or construction), ensure efficient system development and ensure access to the facilities for the TSO to serve other customers. TSO recognises that generators already enjoy the statutory right to construct their own shallow connections, regardless of the current absence of

approved or standard arrangements, and this right may only be denied on grounds of system integrity.

Deliverables Agreed as part of 2003 review

- 1) Submit proposals to CER on Grid Code provisions for wind energy by October 2004 i.e. after consultation with GCRP and industry.
 - *This deliverable has been achieved by the TSO ahead of schedule.*
- 2) Procurement of a new black start service, the TSO will complete the competitive procurement process for a new black start resource in the Dublin region by end March 2004.
 - *The TSO completed a competitive procurement process for Black Start in 2004. Again a suitable generator did not come forward to offer the Back Start service in Dublin. This deliverable has been achieved.*
- 3) Submit completed Generation Adequacy Report to CER by 30th November 2003.
 - *This deliverable has been achieved by the TSO. The Generation Adequacy Report for 2004 to 2010 can be found on the EirGrid website at www.eirgrid.com*
- 4) Implementation of an operational Emergency Control Centre, located in Deansgrange and using new Alstom EMS software before the end of June 2004.
- 5) That over a 12 month period ESBNG will maintain the System Frequency within the range 50 +/- 0.1Hz for 95% of the time, subject to the exceptions below.
 - i. Exceptions: It is important to note that this target is not wholly within ESBNG's control. The following exceptions should be noted
 1. Incidents on the NI system which may affect our system frequency
 2. Inadequate frequency regulation at certain periods (e.g. summer night valley) due to derogations which have been granted to certain plant.
- 6) Ensure that all demand and generation customers connected to the transmission system are issued with a valid connection agreement within six months of the revised connection agreements applicable to the TSO being approved.
 - *The Commission has agreed to an extension of this deliverable to October 2004 particularly given the early achievement of the Grid Code for Wind deliverable.*
- 7) Submit to CER, following consultation with DSO, a form of connection agreement for DSO connections to the transmission system by 30th September 04.

- 8) To the extent that the relevant information and data is available to the TSO in a timely manner, the TSO shall ensure that from 1st January 04 all transmission connected customers are billed for UoS in accordance with the published statement of charges.

Appendix 4 - TSO IT Systems 2001 to 2005

Power System Operations and Power System Planning	
Project Description and Function	Status
<p>GD3: Required for transmission system operation, this is a multi-tiered client server system operating 24 hours a day to provide power system real-time and historical data required by engineers to manage the grid.</p>	<p>Completed in September 2002 with ongoing enhancements being carried out since October 2002.</p>
<p>Electronic Dispatch Instruction System: Required for transmission system operation, this system facilitates electronic communication between the NCC and all centrally dispatched generation stations connected to the grid. It also records communications and provides the data to the energy market settlement system. EDIL provides a mechanism to create, communicate, record and query dispatch instructions and generator declarations. It replaced the old verbal instruction dispatch system communicated from the NCC to generating station plant operator personnel and replaced the manual entry system for dispatch instructions</p>	<p>Completed in June 2002 with ongoing enhancements being carried out since July 2003.</p>
<p>Margins: Required by Power System Operations to allow analysis of the adequacy of the Generation Security Margin.</p>	<p>Completed in August 2002 with ongoing enhancements being carried out since September 2002.</p>
<p>AVA: Required by Power System Operations, this system is used by the TSO for availability analysis.</p>	<p>Completed in August 2002 with ongoing enhancements being carried out since September 2002.</p>
<p>GPRS Replacement: Required by Power System Operations to replace the current system which is approximately 15 years old and, as a result, is not the most user – friendly and is becoming increasingly difficult to support. The current system is owned and maintained by ESB and as such only caters for ESB PowerGen units. The system was designed to allow the review and verification of availability events by both individual stations and the TSO. The replacement will accommodate both PowerGen units and Independent Power Producers (IPPs). The new system must also allow the review and verification of availability events by the appropriate Generation Station, while also ensuring the confidentiality of individual units.</p>	<p>Due to commence in January 2005 with completion scheduled for October 2005.</p>

<p>Anemos: Required by Power System Operations for the implementation of a Wind Power Forecasting System that substantially outperforms current state-of-the-art methods. It will be used for onshore and offshore wind power forecasting, exploiting both statistical and physical prediction methods. This project is supported by the European Commission.</p>	<p>Due to commence in September 2005 with completion scheduled for December 2006.</p>
<p>MoreCare: Required by Power System Operations as part of the Wind Forecasting Programme for enhancements to evaluate forecasting performance, warn of forecast failure, generate regional forecasts, and generate short-term forecasts. It is required to ultimately permit increased wind connections. This project will lead to improved system dispatch, reduced operating reserve, and assist in meeting system security performance requirements.</p>	<p>Due to commence in September 2005 with completion scheduled for December 2006.</p>
<p>Transmission Outage Programme: This database is required in order to implement the Infrastructure Agreement and manage the transmission outage programme.</p>	
<p>EMS Replacement and RTU Communications: Required to operate the transmission system in a safe and efficient manner. The replacement project is necessary due to the ageing previous system. The EMS Replacement project is critical to the ongoing performance of the role of the TSO. The EMS will also provide critical information to other business systems operated by the TSO.</p>	<p>Commenced in February 2001 and completed in June 2004.</p>
<p>Replacement of Existing Planning Database: Required by Power System Planning to support ongoing operations and to provide the required level of robustness and flexibility necessary to support the current and future demands on the business. The current Planet system has been developed and is maintained by Power Systems Planning to support the primary capability of the Power Systems Planning business unit. As the power system is developing and becoming more complex Planet is becoming more difficult to maintain in terms of reliability and robustness. Replacement of Planet will be necessary to support the TSO's future business requirements.</p>	<p>Due to commence in February 2005 with completion scheduled for October 2005.</p>
<p>PROMOD enhancements/modifications: As a requirement to model the Irish Generation system accurately, Promod is a generic unit commitment and production costing program. For modelling the unique aspects of the Irish power system, it has been necessary to pay for specific enhancements to the program. Further enhancements, as yet unspecified, are likely.</p>	<p>Completion scheduled for December 2004.</p>

Power System Support and Projects (part of Power System Operations)	
Project Description and Function	Status
Power System Extensions: Required modifications to advanced power applications software are due to changes within the power system or as a result of new or additional operational requirements to ensure that the applications properly reflect these changes.	Due to commence in 2005.
RTU Spares, Test Equipment, Front-end Equipment: Additional monitoring of infrastructure through RTU (Remote Terminal Unit) equipment is required at the NCC and ECC. Test Equipment (protocol analyser etc.) is also required for debugging of communications problems between RTUs and the EMS systems. The pace of development and refurbishment of the Power System means additional capacity is now required to cater for the known and planned expansion of the power system over the coming years.	Commenced in 2004.
Replacement of 20 RTUs: As the manufacturer has ceased to support a number of RTUs in 110kV stations which communicate to the EMS systems at NCC and ECC it is planned to replace all of these specific RTUs over a three/four year period.	Due to commence in 2005.
SCADA at Windfarms: The revised transmission requirements calls for Supervisory Control and Data Acquisition (SCADA) facilities to be installed at all wind farms over a designated size for communicating defined data to the NCC and ECC systems. SCADA is required to provide an appropriate solution to bring this data back from the many diverse locations to the NCC/ECC in an efficient manner in 2005.	Due to commence in 2005.
Old NCC/ECC Decommissioning: Capital costs are associated with the decommissioning of the old EMS systems at the NCC and the old ECC at Leopardstown.	Due to commence and finish in 2005.
Transfer of Services to Fibre: As Optical Fibre is already in place on the transmission network and in order to improve the quality and reliability of data provided for power system operation it has been the TSO proposes to transfer telecommunication services to Optical Fibre as and when the opportunity arises, for example when new stations are being developed or when stations are being refurbished.	Due to commence in 2005.

Information Systems/All	
Project Description and Function	Status

<p>EirGrid web site and Intranet: As a requirement of the electricity market the Eirgrid website provides market participants and other interested parties with a means of accessing data relating to the operation of the transmission system and the electricity market. Ongoing enhancements are the result of: delivering 24 X 7 availability, publishing content and data as required by the business and CER, implementing enhancements to provide additional functionality to benefit market participants and all users of the web site.</p>	<p>Completed in May 2001 with ongoing enhancements being carried out since June 2001.</p>
<p>Document Management System: Required to carry out day-to-day TSO functions, this system enables company wide standardisation and improved efficiency of the production, storage retrieval and overall management of electronic documents.</p>	<p>Commenced in October 2003 with completion scheduled for December 2004.</p>
<p>IT Infrastructure: Maintenance and development of the TSO's IT infrastructure is required in order for the TSO to carry out its day-to-day functions.</p>	<p>Ongoing project.</p>
<p>Enterprise Application Integration (EMS Integration and Operational Data Store): A new system is required to interface with existing applications. This project will cover the co-ordination of this integration work. It will also be used as an opportunity to standardise the interfacing mechanisms between TSO applications.</p>	<p>Commenced in November 2002 and due to be completed in April 2004.</p>

Regulation and Pricing and Market Operations	
Project Description and Function	Status
<p>Capacity Margins: As a requirement of the electricity market this project was undertaken with the aim of implementing a secure and fully auditable new system for making payments to generators for the supply of capacity margin.</p>	<p>Completed in June 2002 and with ongoing enhancements.</p>
<p>Ancillary Services: As a requirement of the electricity market this project will deliver a robust system to meter the delivery of Ancillary Services and to ensure that prompt and accurate payments are made and prompt and accurate demands for rebates are issued as required.</p>	<p>Commenced in December 2002 and completed in September 2003. Ongoing enhancements being carried out.</p>

<p>TUoS: A system to replace the simple interim “Transmission Settlement System” is required to facilitate the accurate determination of Transmission Use of System Charges as approved by the CER in an auditable and robust fashion.</p>	<p>Completed in June 2003 with ongoing enhancements from July 2003.</p>
<p>Modifications to TUoS: The CER tariff review may lead to wholesale changes to the system.</p>	<p>Project scope is conceptual at this stage.</p>
<p>Commissioning Charges: When generators are in the commissioning or testing phases they require access to the transmission system. These generators are inherently less reliable than fully commissioned generators. This causes increased stress and constraint costs on the transmission system. These charges were previously calculated on a spreadsheet which was unsatisfactory.</p>	<p>Commenced in January 2004 and completed in December 2004.</p>
<p>Customer Management System: With the view of replacing the existing simple interim customer management system which was put in place in 2002 it is intended that a full feasibility study be carried out to establish the most suitable and fully auditable customer management system for the TSO.</p>	
<p>Auditable Tariff design cost and system database: An electricity market requirement to ensure auditability. This database will be the main source of input data into Integra, the system for developing tariffs for generators</p>	<p>Project is not yet defined.</p>
<p>WPDRS Project: CER has asked the TSO to investigate options to introduce further DSM measures. A settlement system to administer the proposed measures was delivered. In addition Phase 2 of the project is required to modify the system to cater for embedded generation.</p>	<p>Commenced in September 2003 and completed in December 2003.</p>

<p>Interconnector Allocations and Nomination Settlement System: CER requested that the TSO consider the use of superpositioning or counter trading to increase the volume of trade on the South/North interconnector for the period governed by the 2003/2004 capacity auction (i.e. April 2003 to March 2004). A fully auditable system was delivered that provides: nominations allocation, billing and output files to SONI and management reporting.</p>	<p>Completed in August 2003 with ongoing enhancements.</p>
<p>Web Projects: An electricity market requirement for implementing enhancements to provide additional functionality to benefit market participants and all users of the web site.</p>	<p>Commenced in January 2004 and ongoing modifications.</p>
<p>PSDM Replacement: The implementation of a new system is required to achieve the Metering Aggregation and Substitution business requirements across the TSO's business. The current Power System Data Management system is used by the TSO to collect power system data and use this in the settlement process. It only supports legacy business processes. To improve overall Settlement processes across the market, it will be necessary to implement new business requirements, with regard to meter data collection, aggregation, substitution, validation and publication. Making significant changes to the existing PSDM system is neither advisable nor possible due to considerable difficulties and associated risks with maintaining the out-dated architecture and operating systems.</p>	<p>Commenced in May 2004 and scheduled for completion in January 2005.</p>
<p>B2B Market Review: A review to facilitate a detailed system design to support central market systems with a potential move to near real time systems.</p>	<p>Commenced in May 2003 and completed in October 2003.</p>
<p>CBT 05 - UCTE to PSSE Data Translator: This project is to provide a translator between the UCTE and PSSE systems for state estimation data. Ongoing creation of settlement data files to send to ETSO (European Transmission Systems Operators Association).</p>	
<p>Regulatory Management System: To develop an internet-based data management store for decisions and directions from the CER and other bodies. A user interface is to be developed to suit ESBNG needs.</p>	
<p>Modify data exchange to XML standards: Required to support Retail Market Opening programme and the systems requirements that this necessitates. MRSO are implementing a Retail Market Opening programme. Part of this will cover the data exchange between MRSO and Market Participants including the TSO. Changes have to be made to the TSO's systems interfaces to allow them exchange data with MRSO systems using XML standards and MRSO required formats.</p>	<p>Commenced in June 2004 with completion scheduled for February 2005.</p>

Legal	
Project Description and Function	Status
<p>Contract Recording System: This system will provide the TSO with an electronic system for logging and reporting on all contracts e.g. Interconnector Agreements, TUoS Agreements.</p>	<p>Completed in January 2003 with ongoing enhancements from February 2003.</p>

Transmission Asset Management	
Project Description and Function	Status
<p>Project Management and Tracking System: This is an internal system required for the TSO to carry out day-to-day functions. The project management solution will be fundamental in supporting the ability to manage a large number of concurrent projects in the future.</p>	
<p>Asset Management System: To carry out day-to-day functions the TSO requires a TAM tracking system that will store data relating to the tracking and maintenance of individual parts of the transmission network infrastructure.</p>	<p>Due to commence in June 2004 and be completed in December 2004.</p>

Finance and Human Resources	
Project Description and Function	Status
<p>Human Resource System: An enduring HR solution is required to support the establishment and growth of the organisation including recruitment, personnel details, salary and benefits management, training and development. At present HR information is maintained in a number of sources some of which are owned by ESB. A new system will provide a single repository for HR information. Ongoing enhancements are required to incorporate additional functionality for the HR system including Flexi-time and Access Control System.</p>	<p>Commenced in April 2003 and completed in April 2004 with ongoing enhancements.</p>
<p>Treasury System: A new cash management system for the TSO.</p>	<p>Put on hold until 2005.</p>
<p>Expenses System: A management and processing system for expenses for the day-to-day operations of the TSO.</p>	<p>Commenced in June 2004 and to be completed in September 2004.</p>
<p>Finance System: The previous Finance system was a stand-alone package and does not run under an enterprise database or over a corporate network. A more robust and secure system was required to complete financial reports, financial statements and management accounts.</p>	<p>Completed in June 2002 with further enhancements/modifications planned.</p>