

**STUDY**

**April 2005**

**PUBLIC INTERVENTION in BROADBAND MARKETS**

**IRLANDE**  
**Telecoms National Backbone**

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*Study conducted by the research firm Cabinet Analysys  
on behalf of l'Autorité de régulation des télécommunications  
and Caisse des Dépôts et Consignations*



## NOTICE

*Autorité de régulation des télécommunications (ART) and Caisse des Dépôts et Consignations (CDC) have called on the firm Cabinet Analysys to conduct a study on the ESB Telecoms national backbone.*

The study will be made public in a concern for transparency and information.

The study's conclusions are the sole responsibility of the firm and do reflect in any way the opinions of ART or of CDC.

## **ESB Telecoms National Backbone**

The ESB Telecoms national backbone is a national fibre optic network which was built with grant assistance from the Irish Government (under the National Development Plan and EC funding) and ESB Telecoms ' own funds. (ESB is Ireland's national electricity utility). The construction of the network was a key component of the Irish government's plan to develop broadband infrastructure in the country at the international, national, metropolitan and local access levels. The development of ESB Telecoms national network was the second phase of government intervention. The first phase had been the development of the international connectivity market.

### ***Background information***

ESB operates as a vertically integrated organisation. It has three main business units:

- Power Generation & Supply
- Networks (transmission and distribution lines)
- Commercial Enterprises.

The Commercial Enterprises Business Unit has responsibility for the non-regulated ESB businesses. The key activities include Engineering, Consultancy, Construction , International Investment, IT and Telecoms and other service based activities. The group is in the process of disposing of its appliance retail business. The business operates in both the home and international markets.

ESB is 95% owned by the State and 5% by the company's employees. The electricity market in Ireland will be opened to competition in February 2005 although it is not on the government agenda to privatise ESB. The company has approximately 10 000 employees.

ESB Telecoms & IT Solutions has approximately 500 employees. In addition to operating the national backbone, it also provides IT & Telecoms services to ESB. Approximately 350 employees deliver IT services, with the balance delivering internal and external telecoms services ESB Telecoms Ltd, the unit responsible for managing the network, is a separate legal entity and is a wholly owned subsidiary of the ESB Group.

► *Strategic rationale*

The Irish government has been involved in funding alternative backbone infrastructure in Ireland under the National Development Plan 1994-1999. It was perceived by the government that investment in the backbone infrastructure market had failed to develop in Ireland and therefore regional services availability was low and prices for national connectivity were very high. A digital divide between Dublin and the regions was emerging which the government wanted to address.

► *Strategic objectives*

The main strategic objective for the project was to reduce increase availability of services throughout the country and to improve services for national connectivity by establishing competition in the market.

► *Project framework*

The Irish government provided grants to ESB Telecoms. A total of EUR16 million was made available under this programme for telecoms infrastructure. ESB Telecoms was awarded the grant to build the backbone using the electrical network.

***Description of selected solution***

► *Private sector role*

The ESB Telecoms national backbone was developed as a response to a tender from the DCMNR for investment in regional broadband initiatives.

The DCMNR issued a tender in which it could provide a grant of up to 40% from structural funds from the EC for this project. However, aid was to be tiered depending on the geographic region to be served. This was done to make the less economically attractive areas more likely to be served. This was grant money (so does not have to be repaid) and ESB Telecoms owns all of the telecom network assets.

The call for tender did not specify a particular course of action but was open to broadband national initiatives as a whole and ESB Telecoms proposed the network that was then constructed. Other companies involved in the tender were ESAT, eircom, COLT and ntl. ESB Telecoms was short listed and a negotiated agreement with the DCMNR was reached. A number of terms and conditions were agreed with a range of milestones to reach. ESB Telecoms also has to produce financial accounts for the

DCMNR to make sure the funds received from the EC are all well managed. It also has its own governance procedures under the terms of which all of its accounts are audited.

► *Business model*

Total construction cost of the network was EUR50 million, EUR16 million of which was covered by the grant. The remaining EUR34 million came from the company's own funds. ESB Telecoms contends there was a sound business case for the network at the time in particular as, with the advent of 3G, ESB saw a requirement for mobile operators to have a well developed national network to use as backhaul between base stations.

The return on investment model for the project was defined over a 15 year period. The rate of return was expected to be between 10% and 15%. The business case supported this but the investment was primarily a strategic decision to position the company to take advantage of the growth opportunities such as the imminent 3G competition.

At present, ESB Group is not looking to make significant further investment in telecoms. It has recently reviewed and has written down its investment in the network. The view is that it will not achieve the return expected initially as the telecoms market failed to develop as they originally anticipated. This is in line with standard practice in the industry to write down this type of investment and follows best international accounting practice

► *Role of government agencies*

The only government agency involved in this project was the DCMNR.

► *Financial requirements*

ESB funded the total investment of EUR34 million it required to contribute to this project. ESB had available significant reserves from the profit the company had made from its investment in Ocean, when it sold its stake in Ocean to BT at the time of BT's acquisition of ESAT.

The government's grant of EUR16 million was provided using structural funds from the EC.

► *Economic and technical specifications*

ESB Telecoms primarily offers wholesale services. It was the first operator in the country to offer dark fibre services on a national basis . It also provides bandwidth services to large enterprises. ESB Telecoms is also the largest independent provider of Telecommunication towers & sites and manages in excess of 300 telecommunication structures throughout Ireland The cost of the fibre was about EUR37 per meter. This included all of the costs such as PoP Equipment, civil engineering, project planning, cost of labour and the cable itself.

► *Project design*

The network, which has a length of 1300km, was designed to run along the electrical power line network and it is wrapped around the cables with 48 fibres. The network comprises two major rings, one in the south of the country another in the north, with an extension to the borders region.

The southern loop was opened in Q1 2003 and the northern loop in Q3 2003. The route of the network does not necessarily overlap with the presence of cities with MAN infrastructure as the ESB Telecoms project preceded and was independent of the metro projects . The route of the network was determined solely by ESB. However, it looked at each city on a case by case basis, and each time made a commercial judgment about whether to roll out the network to that cityThe next figure shows the route of the ESB National Backbone.



**Exhibit Erreur ! Il n'y a pas de texte**  
 répondant à ce style dans ce document..1:Route of the ESB National Backbone [Source: ESB, 2004]

ESB claims that reliability of the links are better for aerial lines than for underground lines, because of potential troubles with civil engineering works by other utilities in the underground network.

Maintenance of the network is outsourced to the same company that constructed the network..

► *Regulatory and legal issues*

Because the grant provided by the government used structural funds from the EC, it had to comply with the maximum threshold permitted in each of the regions of the country in which the network would be built. Aid had to be tiered depending on the region in question with the Borders, Midlands and Western (BMW) region for example receiving up to 40% of the cost of the project. The percentage was reduced the closer the region in question was to Dublin to around 18.5% in the least-funded regions.

***Impacts and feedback on implementation***

The main impact so far in the market has been the extension of network capability to regional locations and the reduction of prices for bandwidth services in the country. The price of dark fibre is currently EUR10 000 per km for 1 pair on a 12–15 year IRU. However, ESB Telecoms encourages the provision of bandwidth rather than dark fibre. It charges EUR100 000 per year for an STM-1. When services were launched, ESB's prices were significantly lower than eircom's prices, although, as expected, eircom has subsequently lowered its own tariffs to compete.

To provide an end to end solution, ESB Telecoms has reached a non-exclusive agreement with e-Net to provide joint services. ESB Telecoms has POPs in or the outskirts of towns in which its network interconnects with the e-Net's MANs.