

MEMORANDUM

DATE: 30 June 2010
TO: Damien O'Flaherty and case team, Frontier Economics
FROM: Boaz Moselle
RE: Additional issues re implementation of Third Package in Ireland

Introduction

This memo discusses three questions arising from our conversation at the meeting between ESB ESOP and yourselves on 20 May 2010. These questions were:

- Whether it is possible to better understand what Article 13(4) EU Directive means by "construction and commissioning"?
- Whether the ISO model raises concerns about efficiency of investment relative to the ownership unbundling model?
- How the estimate of the £5m per year upper bound on the benefits in Britain from integrating the operations of the system operator and the transmission owner was calculated?

1) Construction and commissioning of new infrastructure

As discussed in our report,¹ the EirGrid ISO appears to conform to most or all of the requirements for the ISO under the Third Package. One possible exception is the role of ESB and Eirgrid in constructing new infrastructure. At present ESB commissions and constructs new transmission investment once EirGrid has received planning approval for the investment. This involves the detailed network planning and arrangement of the procurement process. Article 13(4) of the Directive requires

"When developing the transmission system, the independent system operator shall be responsible for planning (including authorisation procedure), construction and commissioning of the new infrastructure."²

¹ *Implementing the Third Energy Package in Ireland: Options for the transmission network*, 23.4.2010, available at <http://www.esbesop.ie/ESB%20ESOP%20Final%20Report%20Apr10.pdf>

² Directive 2009/72/EC

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The question is what the legislation should be understood to require, in relation to “construction and commissioning...new infrastructure”, so as to ensure an appropriate level of independence from the asset owner under an ISO arrangement. In this context we believe that it is useful to consider the interpretation of independence of operation accepted by the Commission regarding the operation of the Zeebrugge LNG terminal, as part of the approval of the Gaz de France (GDF) and Suez merger³. The undertakings were intended to ensure the operational independence of Fluxys, owner of the Belgium gas network and the Zeebrugge LNG terminal:⁴ in effect, they created a kind of independent system operator for the terminal.

GDF acquired Suez, owner of the Belgian gas system operator (SO), Fluxys in 2006. Fluxys owns the only LNG terminal in Belgium (Zeebrugge), and the only underground gas storage facility, as well as operating the national transmission network. GDF was a major competitor to Suez in the Belgium gas market and the merger raised a number of competition concerns including access to terminal and storage facilities.

GDF/Suez offered a number of undertakings around the ownership and operation of Fluxys to ensure its independence. These included separation of the activities of Fluxys into two entities: Fluxys s.a. and Fluxys International. The former would hold the gas transport pipeline activities, while Fluxys International would own the Zeebrugge LNG terminal and other unregulated activities. The key point is that the arrangement was set up so that (inter alia) Fluxys s.a. would function as an ISO for the Zeebrugge LNG terminal. While the incumbent utility GdFSuez would retain majority ownership of the terminal, via its 60% stake in Fluxy International, operation of the terminal would be undertaken by a separate entity, Fluxys s.a., that was independent of GdFSuez.

In regard to Fluxys s.a., the parties made a series of undertakings to guarantee its independence from GdFSuez⁵:

- Not to own more than 45% of the entity or appoint more than one third of the Directors;
- to set up an executive committee within Fluxys s.a. with exclusive powers as regards (i) the management (including commercial strategy) of the regulated infrastructures and (ii) the overall investment plan for regulated infrastructures in Belgium. The executive committee

³ EC, COMP/M4180 – Gaz de France/Suez, 14 November 2006

⁴ EC, Media release, IP/06/1558, 14 November 2006.

⁵ EC, COMP/M4180 – Gaz de France/Suez, 14 November 2006 (French edition), Section B, pages 303/304.

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would also have responsibility for LNG terminal and Zeebrugge hub investment by Fluxys International.

- The Board will not be able to reject the overall investment plan except on the grounds of the impact any such investment would have on the company (under protection of financial interests of shareholders acting as investors).
- In this latter case the parties will vote to allow the investments to be financed by a third party and if necessary to allow the capital of Fluxys s.a. to be opened up to third parties with the specific objective of financing these investments.

In regard to Fluxys International, the parties made a series of undertakings whose effect was to ensure that the arrangement would be of the “deep ISO” type (and in line with the requirements of the new Directive), with the ISO (Fluxys s.a.) having full control over investment decisions and able to seek external funding if the owner declined to fund new investments. Specifically they undertook⁶:

- not to own more than 60% of the entity
- the Fluxys s.a. executive committee, will draw up an overall investment plan for the LNG terminal and the Zeebrugge hub, which the Board of Fluxys International will be unable to reject except on grounds of its financial impact on the company (under protection of financial interests of shareholders acting as investors).
- On its own initiative, the executive committee of Fluxys s.a. will also be able to propose additional investment in the regulated and unregulated assets owned by Fluxys International or its subsidiaries. Should these investments be rejected by the Board of Fluxys International, the representatives of the merged entity will vote to allow the financing of such investment by a third party and if necessary to allow the capital of Fluxys International s.a. to be opened up to third parties with the specific objective of financing these investments.
- Fluxys International will delegate to Fluxys s.a. the management of the Zeebrugge LNG terminal and rights to use installations and equipment regulated under Belgium law.

The Commission in its assessment of the undertakings placed weight on the independence of the Fluxys s.a. executive committee and the fact that the merger parties (i.e. the majority shareholders

⁶ EC, COMP/M4180 – Gaz de France/Suez, 14 November 2006 (French edition), Section B, pages 304/305.

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in Fluxys International) would not be able to block investment by Fluxys s.a and Fluxys International.

The arrangements governing the Zeebrugge LNG terminal therefore constitute an ISO model: independence operation of the facility and the right of third parties to make investment, if the asset owner refuses to invest. Indeed and at the time they were viewed by many observers as in part the Commission setting a precedent for the use of ISOs to deal with concerns around vertical integration and discrimination.

We understand that the detail of the undertakings did not include the details of how new infrastructure was to be constructed or commissioned. The undertakings did discuss a number of new investments to be made in the infrastructure such as improving the connection between terminal facilities and increasing storage capacity, but did not discuss the construction and commissioning of these investments.

The undertakings suggest that the Commission did not believe that arrangements for the commissioning and construction of new infrastructure were important for ensuring the operational independence of Zeebrugge. We suggest that this is of direct relevance in assessing the intention behind the language in the new Directive. It also suggests that ensuring the operational independence of the ISO may be more important—as reflected in the Commission’s acceptance of these undertakings—than the implementation details of the procurement of new investment.

2) Impact on investment efficiency

At our meeting you asked whether there are concerns about the efficiency of investment under the deep ISO model, given that the entity making investment decisions is not the owner. The interaction of investment and regulation is a complex issue, but we note that Regulatory Asset Base (RAB) approach to regulation is generally considered to provide reasonable investment incentives, provided the cost of capital is set at a sufficient level and there is a reasonable level of investment certainty. There is range of issues around ensuring efficient investment by monopoly networks. However, for the purposes of analysing the ISO vs ownership unbundling choice in Ireland , the relevant issue is how the choice between an ISO and ownership unbundling may affect investment efficiency.

We identify two potential issues regarding efficiency of investment under the ISO model:

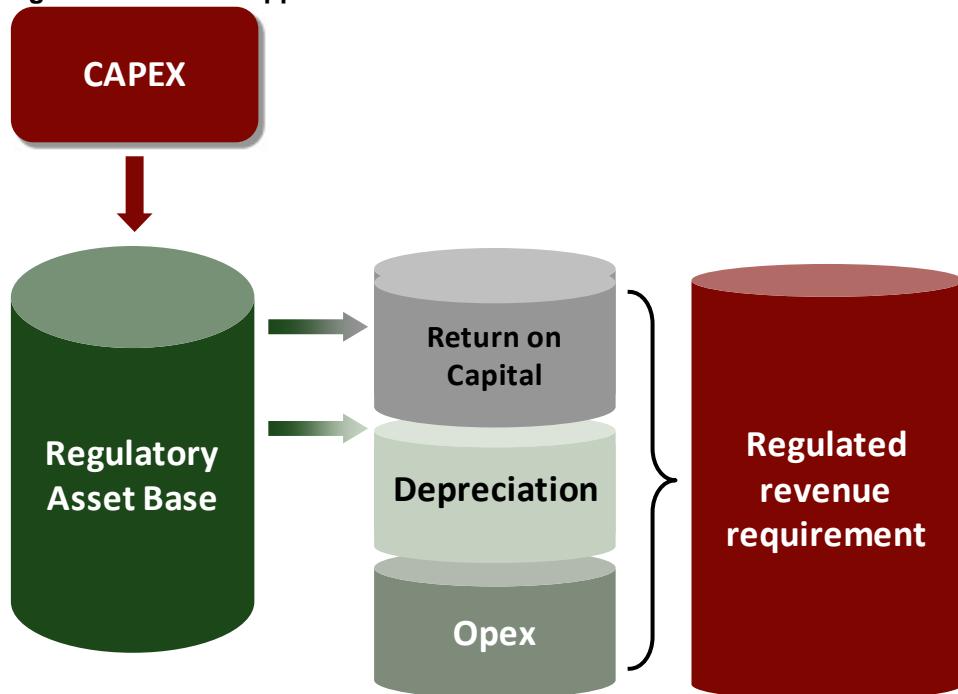
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- Incentives on ISO to maximise the efficiency of capital investment: is there a risk that incentives may be impaired as ISO does not own the transmission assets?
- Incentives to balance capex/opex costs to minimise total costs – as the ISO is responsible for capital investment, but transmission owner bears network maintenance costs, will the ISO not take account of opportunities to jointly optimise capex and opex costs?

2(a) Efficiency of capital investment**Background**

As depicted in the figure below, the size of the regulatory asset base is an important input into regulated prices. Under a RAB based approach, the size of the RAB has a direct effect on the amount allowed as a return on assets and on the allowed depreciation costs. The forecast level of new investment in a price control period will accordingly affect the size of the RAB and the allowed charges. At a later stage, the regulator usually adjusts for the actual level of capital expenditure and may also make an efficiency adjustment.

Figure 1: The RAB Approach



Source: LECG

The CER uses a RAB based approach to determine regulatory charges for both the ISO and TO. The CER allows ESB to include assets in the RAB on the basis of costs incurred and does not

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make any ex post efficiency adjustment. It incorporates an assessment of the historic efficiency of capital expenditure in its estimation of the amount to be allowed for capital expenditure in the next price control period⁷. The CER makes annual adjustment to the RAB to reflect the difference between actual and forecast capex during the price control period⁸.

Analysis

We understand from our conversation that you would like to assess a potential concern that splitting responsibility for investment from ownership of transmission assets might adversely affect the efficient planning of new transmission investment and/or the efficient implementation of investment. For example, will the SO propose the appropriate level and type of transmission investment? Will planning approval and equipment procurement be co-ordinated efficiently, to deliver the capital expenditure programme at least cost?

It is the role of the CER to approve the level of investment in transmission assets and this will take account of the ability of the TO to deliver on the investment plans as well as the desirability of the new investment. In setting the 2006-2010 price control, the CER noted the risk that the SO (then ESB National Grid) might not take account of the regulator's determination of the allowed capex in the price control. However, the CER noted that they considered that the SO must take full account of and be consistent with the allowed capex for the transmission owner (TO). The CER found that the TO had spent 83% of its allowed capex in PR1, with some variance in the projects undertaken. The key role of the CER in deciding on the efficient level of transmission investment means that the choice between ISO and ownership unbundling models is likely to have little impact on the efficient planning of investment. The ISO must take account of the CER's capex determination and the planned level of transmission investment will depend on the CER's determination.

In terms of the incentives for efficient delivery of capex, to the extent that this is the responsibility of the TO, then they face incentives from the ability of the CER to adjust future regulatory determinations and from the risks to their reputation. There is a potential weakness in that the ISO does not face direct incentives under current arrangements to act in a way that maximise efficient delivery eg getting planning permission in a timely manner. However, they do face an indirect incentive to the extent that they have an interest in ensuring that future capex plans obtain approval from the CER.

⁷ CER, 2006-2010 *Transmission Price Control Review*, Decision Paper, 9 September 2005, pages 6-6 and 10-3.

⁸ CER, page 10-3

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Conclusions

There could be potential concern that the SO/TO split may weaken incentives by splitting responsibility for investment planning and delivery between the two entities. However, given the key role of the CER in determining the allowed capex in price controls, this does not appear to be a significant issue for investment planning, as the allowed amount of investment is determined by the CER. In terms of implementation of the investment programme, there is a potential concern that the SO may have weaker incentives than the TO to efficiently deliver the investment programme. However, like the transmission owner, they face the risk that inefficient delivery will impact on the CER's next price control determination. As this is the main incentive under the current transmission regulatory arrangements, the ISO model does not appear to have a significant impact on efficient implementation of capital investment.

2(b) Capex/opex trade off

Background

RAB based regimes traditionally have been weak at encouraging efficient capex/opex trade offs, as incentives to make cost savings traditionally apply to capex and opex separately and the regulated firm does not face incentives to make sensible trade offs between the two categories. In response to these issues, some regulators have introduced mechanisms to equalise incentives to minimise both opex and capex spending such as Ofgem's Information Quality Incentive (IQI)⁹. However, the CER has not implemented such an approach.

Analysis

There is a question whether an ISO model may exacerbate the weakness of the RAB model regarding incentives to optimise capex and opex. As the CER's approach to price control does not provide balanced incentives to optimise capex and opex costs, the SO/TO split is likely to have little effect on this issue.

It is, of course, possible that the CER could modify its approach at some point in the future and provide a balanced incentive mechanism. However, we note that the development of a balanced incentive mechanism for transmission is not an easy task and Ofgem has been working for a number of years to progress this issue, with limited progress to date.

In this case, it would be possible to provide incentives to EirGrid and ESB to take account of trade offs between capex and opex, as part of the price control process. Under an ISO model, ESB

⁹ Ofgem, *Electricity Distribution Price Control Review Final Proposals - Incentives and Obligations*, December 2009.

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would need to engage with EirGrid on requirement for capital investment and scope for opex/capex trade off. If CER were to provide an incentive mechanism to elicit appropriate capex and opex trade offs, then ESB and EirGrid would need to co-operate to ensure optimal outcomes. ESB could be easily incentivised as part of the arrangements for setting the price control. It would be more difficult to incentivise co-operation by EirGrid, but not impossible, it may require some transparency about ESB's view on opportunity for gains from trade offs. This would enable the CER to detect any scope for unexploited capex/opex optimisation.

Conclusion

Current regulatory arrangements in Ireland do not provide specific incentives to optimise capex and opex costs. Ownership unbundling does not therefore offer an advantage for optimising capex and opex as under the RAB model; there is an incentive to favour capex over opex spending, regardless of the ownership of transmission assets. Ownership unbundling would enable capex and opex trade off incentives to be introduced, however, such incentives could also be introduced with the ISO model, although, it will require additional provision to allow for the role of ESB in determining capex plans.

(3) Inefficiency estimate from separation of Transmission Owner (TO) from System Operator (SO)

We discussed the upper bound of losses from the lack of integration between the TO-SO in Scotland under the GBSO arrangement presented in our report (p.48), and we agreed to provide you with additional detail on its derivation. The figure was derived from a National Grid estimate of the savings in system balancing it made through SO-TO integration. About half of the £23m savings came from projects which required capital expenditure and this is the basis for the £11.5m figure in first row of the table below. The savings requiring capital expenditure are the relevant ones to focus on here, as these savings are more difficult to make when the operation of the transmission network is separated from capital investment decisions. The £11.5m figure is for England & Wales. To estimate a corresponding figure for Scotland, we then scale it by the ratio of Scottish constraint costs to England & Wales's constraint costs, as shown in the table.

However, National Grid noted that savings of this kind could still be achieved in a contractual TO-SO relationship but at a higher cost. This explains why the estimate of efficiency loss based on this figure is an upper bound of efficiency losses.

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We note that this efficiency loss should anyway be much less significant under the Irish ISO model, as the role of EirGrid in determining capital investment allows it to take account of any balancing or congestion benefits in determining the investment plan, unlike the role of National Grid in Scotland.

Table 1: Estimate on upper bound of inefficiency from lack of integration between TO-SO.

Description of cost	Cost (£m)	
NGC estimate of SO savings in England and Wales that required TO investment	11.5	(1)
England and Wales constraints in 1993/94	185.0	(2)
Scottish constraints in 2006/07	80.0	(3)
Estimate of upper bound of SO savings in Scotland that require TO investment	5.0	(4)= (1) x (3) / (2)

Sources: Brattle, "Independent System Operators for Power Transmission: Evidence-Based Assessment", April 2008. The report derived the original data from the following. [1], [2] from NGC evidence to Trade and Industry Committee 5th Report, Appendix 10 (2003). [3] from National Grid's Initial Forecast of Incentivised Balancing Costs for Great Britain in 2008/9.