The future of electricity transmission regulation

Energy Policy & Research Group

Anthony Legg
Director
Economic & Financial Consulting
FTI Consulting LLP
Anthony.Legg@fticonsulting.com
+44 (0) 775 3300 520

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Introduction

Challenges

- Environment
- Security of supply
- Affordability

Key players

- Interconnector
- System operator
- Transmission operators

Responses

- RIIO
- Project TransmiT
- OFTOs
- I/C cap & floor
- ITPR

Responses

- RIIO
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Core onshore transmission network regulation
Overview of the RIIO model

- 8 year price control, with mini-review after 4 years
- Stronger focus on outcomes, incentives and innovation
- Capex and opex combined into totex...
- ... which is then split into ‘fast’ and ‘slow’ money
- Slow money is added to RAV and depreciated...
- ... but fast money is added to revenues in year
- Cost of debt indexed to trailing average of benchmark bond yields
Core onshore transmission network regulation
How might onshore regulation change in future?

- Stronger incentives
- More competition
- Indexation of cost of equity
- CPIH indexation
- RPEs
- Charging reform
- Regulatory accounting
Offshore electricity transmission regulation
Overview of the OFTO model

- Offshore electricity cables constructed by windfarm generators...
- ... but then auctioned to the party willing to accept the lowest revenue stream (TRS)
- Parties submitted bids to reflect the expected costs of acquisition (FTV + other upfront costs), financing, tax and operating and maintaining the assets
- TRS reflects these costs, but is constant (other than indexation to RPI) over the 20 year licence period
- Because the lowest bid wins, investors are incentivised to submit the lowest cost bids they believe will win and provide them with an adequate rate of return on their investment
Offshore electricity transmission regulation
How might the OFTO model change in future?

Generator-build model

1. Transitional regime
   - Refinancing gainshare
   - Inflation indexation
   - Availability incentive

2. Enduring regime
   - Cost targeting?
   - Longer licences?

OFTO-build model

- Early OFTO
  - More options
  - Cost targeting?

- Late OFTO
  - Longer licences?

Wider Network Benefit Investments (WNBI)

- Radial links considered so far through OFTO model
- ... but how to deliver least cost offshore grid requires co-ordination

How can investor appetite be maintained and expanded to meet the supply of (increasingly differentiated) investment opportunities?
Electricity transmission interconnector regulation
The cap and floor model

- 20 year licence period, with revenues linked to RPI
- No periodic adjustments, but cap & floor ‘true up’ every five years

Diagram:
- Performance rewards / penalties
- Cost of Equity
- Capex
- Cost of Debt
- Regulatory Asset Value (RAV)
- Cap Profit
- Tax
- Depreciation
- Opex
- Floor Profit
- Market risk b/w cap & floor
- Cap revenue
- Floor revenue
System operator regulation
Ofgem’s ITPR proposals

Current arrangements
National Grid
NETSO

Future arrangements?
National Grid
(I) SO

Legal separation?
Offshore SO?
Interconnector planning?
Incentives & monitoring?
Trends in electricity transmission regulation: will the investment required be secured?

Challenges...
- Environment
- Security of supply
- Affordability

... are creating more and more varied investment opportunities...
- Onshore TOs
- CATOs
- OFTOs
- Interconnectors

... and responses...
- RIIO
- Project TransmiT
- I/C cap & floor
- OFTOs
- ITPR

... but will investors find these opportunities attractive?
- TOs
- Other corporates
- Sovereign wealth funds
- Pension funds
- Infrastructure funds
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