Transmission Pricing Review

HVDC Cost Allocation – Possible Incentive-Free Charge to SI Generators

August 2011

This presentation has been prepared for discussion with TPAG. Content should not be interpreted as representing the views or policy of the Electricity Authority or of TPAG.

Context – Incentive-Free Allocation

- Several submissions suggested that there had been insufficient analysis of an incentive-free allocation to SI generators and that the Discussion Paper did not provide reasons for concluding that it was unworkable.

- These slides:
  - describe a possible incentive-free option.
  - explore the possible benefits and workability of an incentive-free option

Objective

- Explore a mechanism that retains the HVDC charge with SI generators but removes some of the undesirable 'incentives' associated with the existing arrangements, in particular :
  - Remove incentives that discourage SI power stations operating at full output.
  - Remove the competitive advantage for new generation development conferred on large incumbent generators in SI.
  - Remove the competitive disadvantage for new SI generation relative to new NI generation.
  - Maintain low transaction costs.

Any mechanism must be sustainable and unlikely to fail in the face of creative business restructuring.

A possible incentive-free option

1. Forecast HVDC costs
   - Forecast annual costs of upgraded HVDC transmission (including pole 3) covering cost of capital and operating costs. Derive a 'fixed' annual cost forecast covering (say) 25 years (or some other long-term period that is considered feasible).
2. Index costs
   - Consider whether to index costs to CPI or include an estimate in the forecast.
3. Allocate fixed HVDC costs
   - Determine the HVDC charges by allocating the 25 year fixed cost forecast to SI power stations that are grid connected as at 1 January 2012 (and >20MW) based on HAMI over an historical reference period (say 2005-2011).
   - The fixed HVDC costs would cease after (say) 25 years.
4. Link HVDC costs to SI power stations
   - Determine that if a power station is sold or transferred to another entity, the fixed HVDC charge associated with that station must be transferred to the other entity.
   - This is intended to ensure that the HVDC charges remain with the revenue stream from generation and don't end up with a shell company without any assets or income).

Determining interconnection charges

- Calculate the residual annual transmission "interconnection" revenue requirement based on the following formula:

Transpower revenue requirement – connection charge revenue – fixed HVDC revenue

- Any differences between the fixed HVDC cost forecast and the actual HVDC costs would be 'washed up' through interconnection charges.
- This has the effect of meeting Transpower's revenue requirement, while allowing the HVDC costs to be fixed.
- Any additional investment in HVDC transmission would flow into the interconnection charge using this methodology

Advantages and disadvantages

Advantages	Disadvantages
SI generators would not be discouraged from operating at full output	Possible uncertainty about the HVDC charge if HVDC transmission is decommissioned
The efficiency loss associated with SI/NI generation investment would be removed	Loss of beneficiary pays incentives on future investments in HVDC transmission
Any competitive advantage conferred on large incumbent generators in the SI would be removed	Possible uncertainty about what happens to the HVDC charge if a power station is decommissioned
Transaction costs should be low since the charges would be fixed in advance rather than calculated on an annual basis	Long-term counterparty risk for Transpower
It would be difficult for a SI generator to arrange its affairs in a manner designed to avoid or reduce the HVDC charge	Possible incentives to decommission an existing power station and relocate assets in order to avoid the charge
Uncertainty in the level of HVDC charges is accommodated by calculating the annual interconnection charge as the residual revenue requirement after connection and HVDC charges	Possible regulatory uncertainty resulting from lobbying to have the charges removed

Issues to be addressed

- What mechanism to use to ensure that charges remain with power stations – does EA have the power to do this and would this need to be included in the Code or in the TPM guidelines?
- Is this approach to an incentive-free HVDC cost allocation sustainable?
- Is this approach to an incentive-free HVDC cost allocation 'good regulatory practice'?