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Dairy for life

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Dr Graham Scott
Chairman Transmission Pricing Advisory Group
Electricity Authority
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Dear Graham

Re: TPAG – Workshop presentation

Firstly my apologies for being unable to attend tomorrows work shop. I thought it appropriate to at least share my thoughts on the TPM as you asked us to make a 15 minute presentation on this subject.

INTRODUCTION

I am generally in favour of load flow based allocation (LFBA) for TPM as this strikes me as the most technically accurate method of allocating transmission costs. It also has benefits of incentivising local investment in transmission alternatives where the grid is becoming constrained. However it does have problems notably the lack of price certainty.

I note that the Electricity Commission decided not to pursue a LFBA, and I accept significant bodies of work have been completed in the past on this and several other high level options. Notwithstanding any due diligence that may be prudent, I generally agree there seems to be little to be gained from revisiting these.

However what I propose here is a result of comparing the status quo with LFBA and I think there is a place for an amalgam of the two that delivers on the Electricity Authority objectives.

HVDC

With the increasing North to South[1] flows across the DC link I think the allocation of costs to South Island Generators (SIG) alone is no longer valid. To improve competition, even if only through more accurate cost apportionment giving new entrants greater certainty of reasonable cost allocation, the other beneficiaries of the HVDC link should be apportioned costs too.

With HVDC costs currently being allocated to SIG alone it would seem the obvious NI beneficiary is the North Island Generators (NIG). It would be reasonably easy to use the existing HAMI methodology to apportion HVDC costs to SIG and NIG based on their utilisation of the

[1] Some predictions put north–south flows at equal to south–north flows at around 2016. Is this correct? http://www.gridnewzealand.co.nz/f3698,31947444/hvdc-submissions-summary-070706.pdf

link. This in itself is a small form of LFBA. However there seems to be little point in treating the DC link as different from other bi- directional lines. The next logical step is to roll the HVDC charges into the interconnection methodology. At what point this should happen and transitional arrangements would be important factors here. Included in this is the question of wealth transfers as below.

HVAC

Connection assets. I don't see much difference in outcomes between a LFBA and the existing connection assets charge. Under a LFBA those customers which exclusively utilise assets will be allocated that portion of the assets load flow. i.e 100%. Given there seems no difference in outcomes between the two I guess the lower transactional cost scenario would be the best given this gives us the most efficient operation.

Interconnection assets. I think there could be greater benefit from some split between a LFBA and postage stamp allocation. Gaining the best of both methods of having some price certainty and also with sufficient variability and price signalling to encourage good reliability outcomes. Having the two methods together also limits the major short comings where postage stamp does not sufficiently incentivise local participants to take action and LFBA brings too much price uncertainty.

The split between LFBA and postage stamp could be limbs of the network. Say, noncore grid assets are subject to LFBA and core grid subject to postage stamp. Another option may be to use LFBA for the whole grid with some portion being retained as postage stamp.

Transactional costs and complexity may make this unattractive, but I think it warrants analysis.

RELIABILITY

I think the LFBA portion of the interconnection assets charge heightens the incentive for transmission alternatives in those areas where transmission is constrained. The challenge here will be having sufficiently high LFBA proportion to incentivise desired outcomes.

STATCOM

I am in favour of using kVar charges to recover costs associated with static compensation. I think the installation of STATCOM at transmission, distribution or consumer level at lowest overall cost is best achieved with localised charges that reflect true cost of transmission level STATCOM. Adding STATCOM to existing postage stamp methodology will not incentivise any one to install perhaps more cost effective STATCOM where they can leave the cost to be borne by wider New Zealand. STATCOM installed as connection assets would achieve the same outcomes as LFBA, and this should be seen as the same as the connection asset vs. LFBA discussion in HVAC above.

WEALTH TRANSFERS

In the above proposal of rolling the HVDC into interconnection assets the question of whether SIG are also rolled into the interconnection pool would need to be answered. Or, following the logic of how HVDC is rolled into interconnection arguably NIG can be added alongside SIG in this question, especially if under some transitional period SIG and NIG cover HVDC costs together.

I understand wealth transfers to consumers are not deemed to be benefits unless there is an efficiency advantage in doing so. But I don't see how this can be avoided here unless the SIG (and maybe NIG) are apportioned an interconnection cost proportional to the HVDC component, which of course just reintroduces HVDC charges.

Although outside TPM arguably there is potential for an efficiency gain as generators would recover the additional cost through energy prices. Consumers are more incentivised to reduce energy usage based on energy cost than avoid static line charges.

SUMMARY

In summary when looking at the transmission system as a whole I think;

- Connection asset costs may be allocated based on status quo or LFBA.
- HVDC be rolled into interconnection assets (post some transitional period)
- Interconnection asset costs be split 50/50 between generators and consumers
- That a form of LFBA / postage stamp methodology be used for apportioning the interconnection costs
- That kVar charges be introduced to recover costs associated with STATCOM

I trust this provides some insight into my thinking on TPM at this stage. Please note this has not been subject to required analysis and is a recent observers view of the over arching themes.

Yours sincerely

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