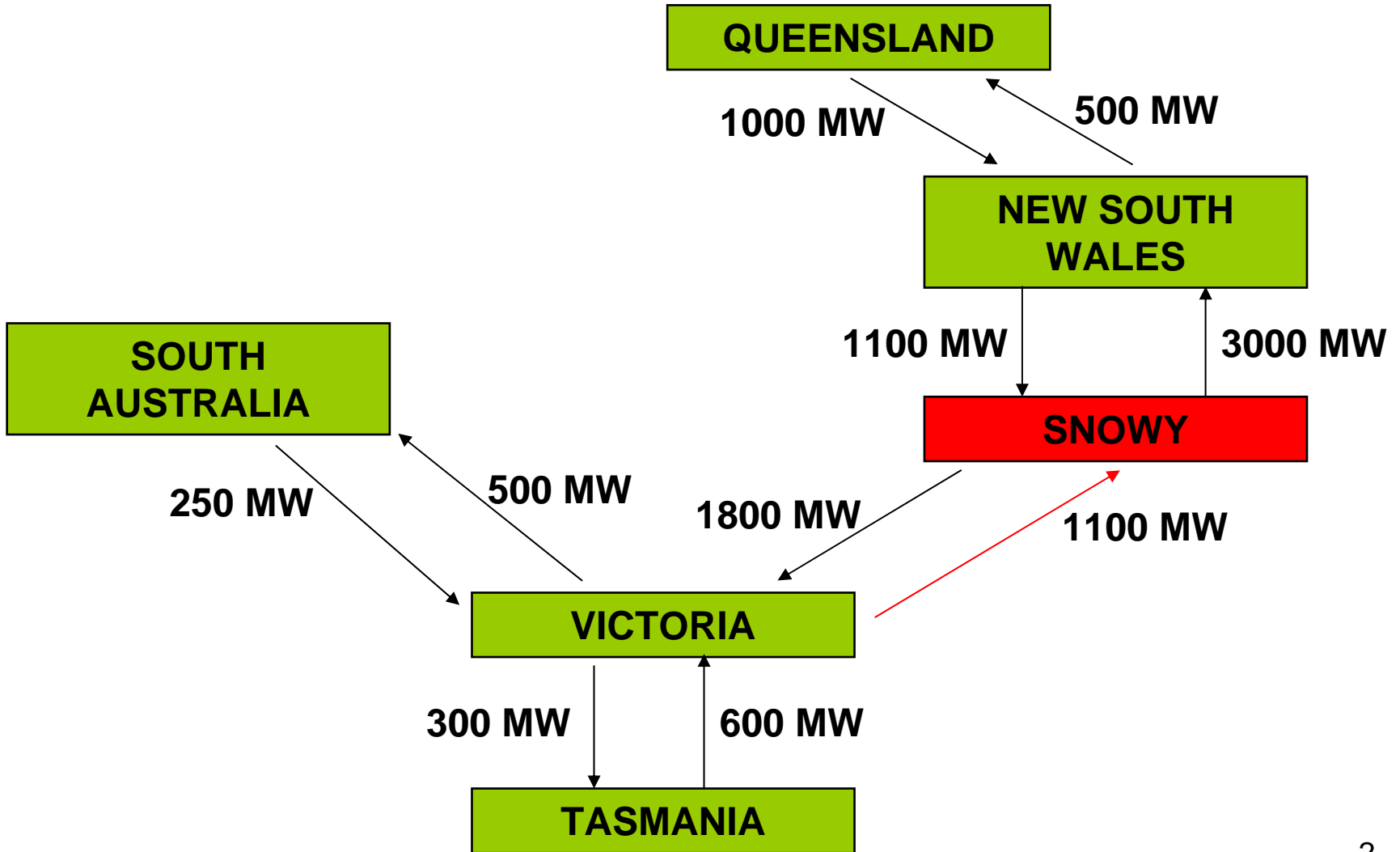


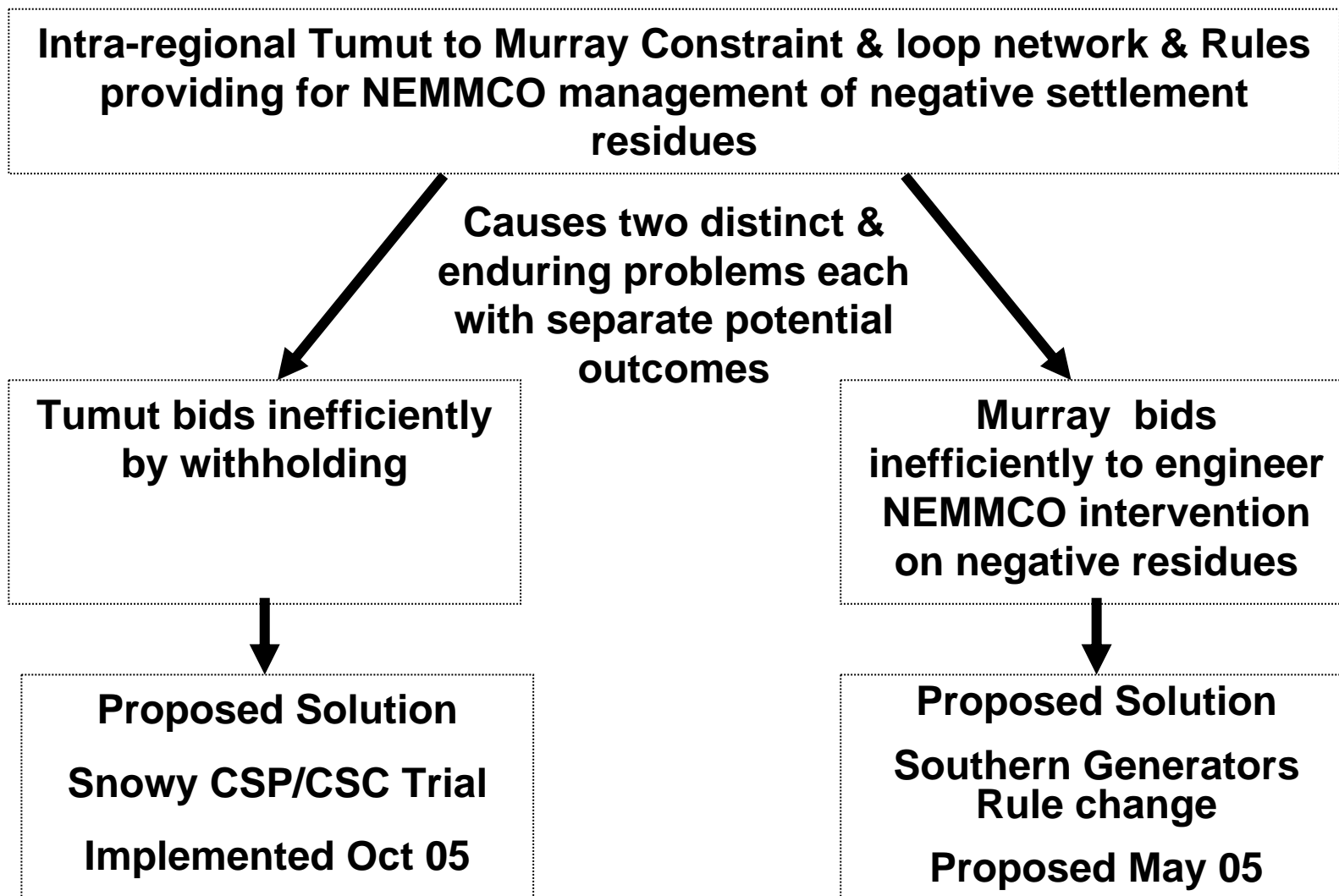
Management of Negative Settlement Residues in the Snowy Region

A Rule change proposed by Loy Yang
Marketing Management Company,
International Power, TRUenergy, NRG
Flinders, AGL-Southern Hydro, Hydro
Tasmania and NEMMCO (for the purposes of
satisfying the NEL)

NEM Interconnections



CSP/CSC Trial & Southern Gen's Rule Change



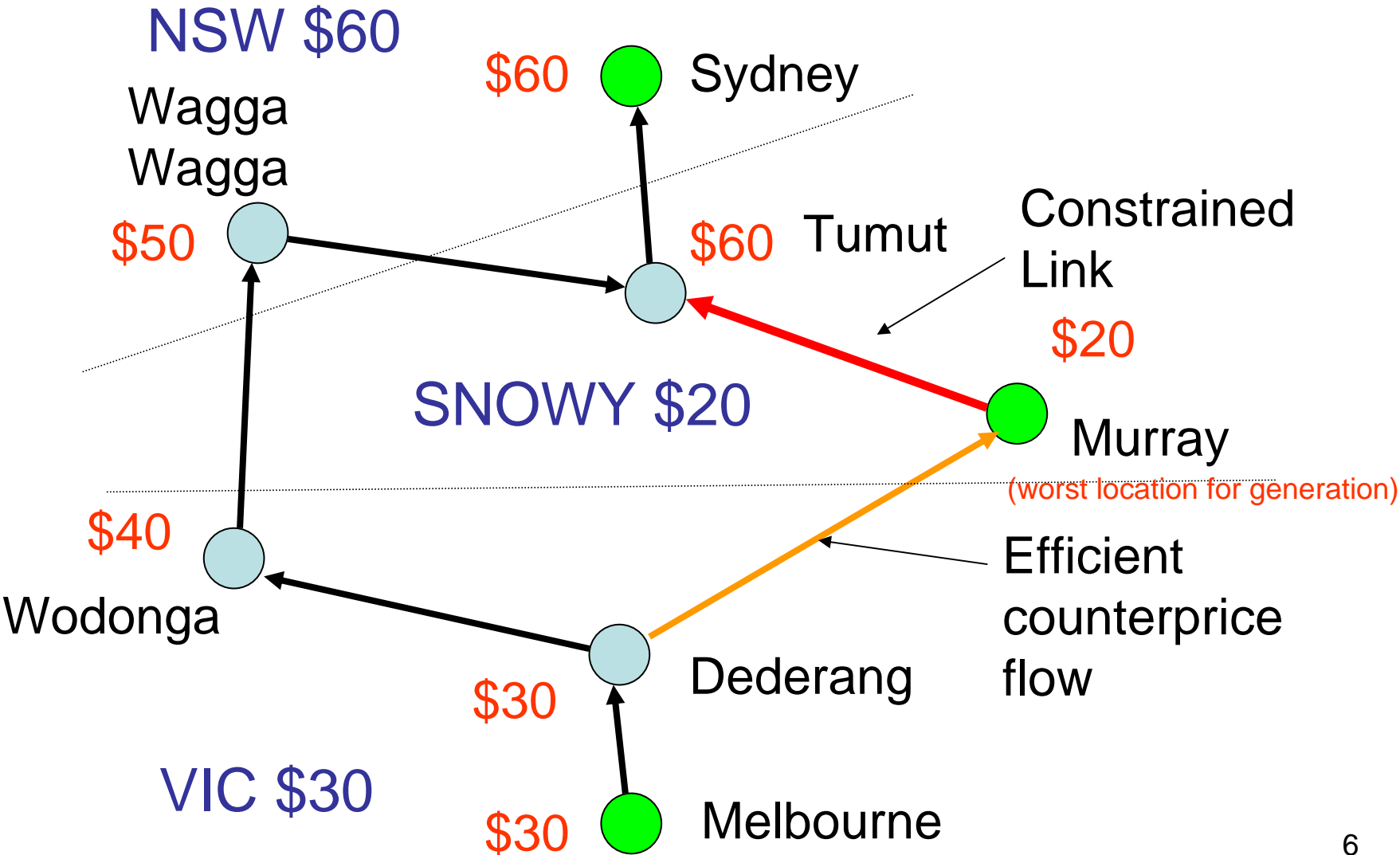
Impact & Duration of the Problem

- The proposed solution addresses a problem that is a significant and enduring one both with;
 - recurring inefficient dispatch at high priced periods, and
 - distortions contracting which endures for years.
- Failing to adopt the Rule change would;
 - entrench the North-South split in the NEM and hedge trading,
 - adversely impact on investment incentives,
 - run strongly counter to the Market Objective.
- Resolution cannot wait for the (extended) regional boundary change process,
 - the AEMC should adopt the Southern Generators' derogation ASAP,
 - If affected by a snowy regional boundary change, the derogation will automatically sunset.
 - Even at the date of the sunset, the derogation may have an on-going role to play.

Description of the Problem

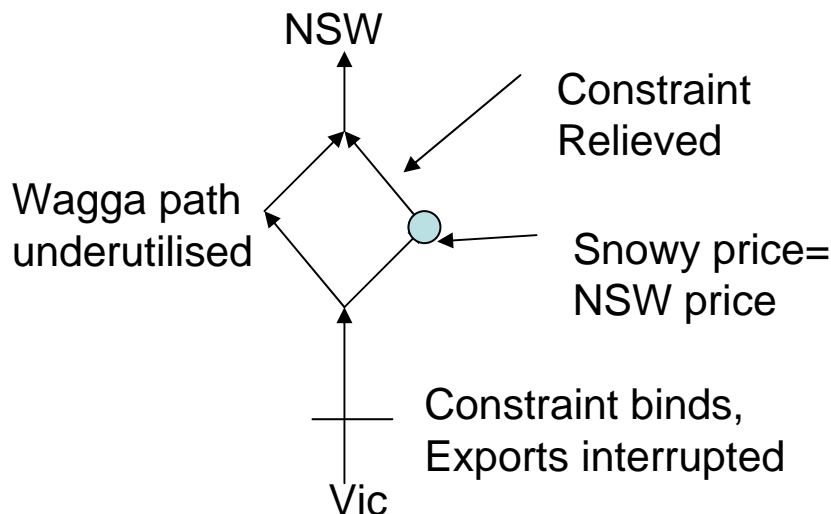
- When the demand/supply balance is tight in NSW;
- Electricity is flowing from Victoria to NSW via Snowy;
- The Snowy region intra-regional constraint binds;
- Because it forms part of a loop, the Snowy price can fall below the Vic price and an “efficient counter-price flow” results;
- Large Murray generation volumes can be offered at a low price (eg \$0.04/MWh), ensuring the intra-regional constraint continues to bind;
- Negative settlement residues accumulate and NEMMCO is forced to intervene to place a binding constraint on the Victoria to Snowy interconnector to minimise or stop the accumulation of the negative settlement residues.

Efficient Counter Price Flows



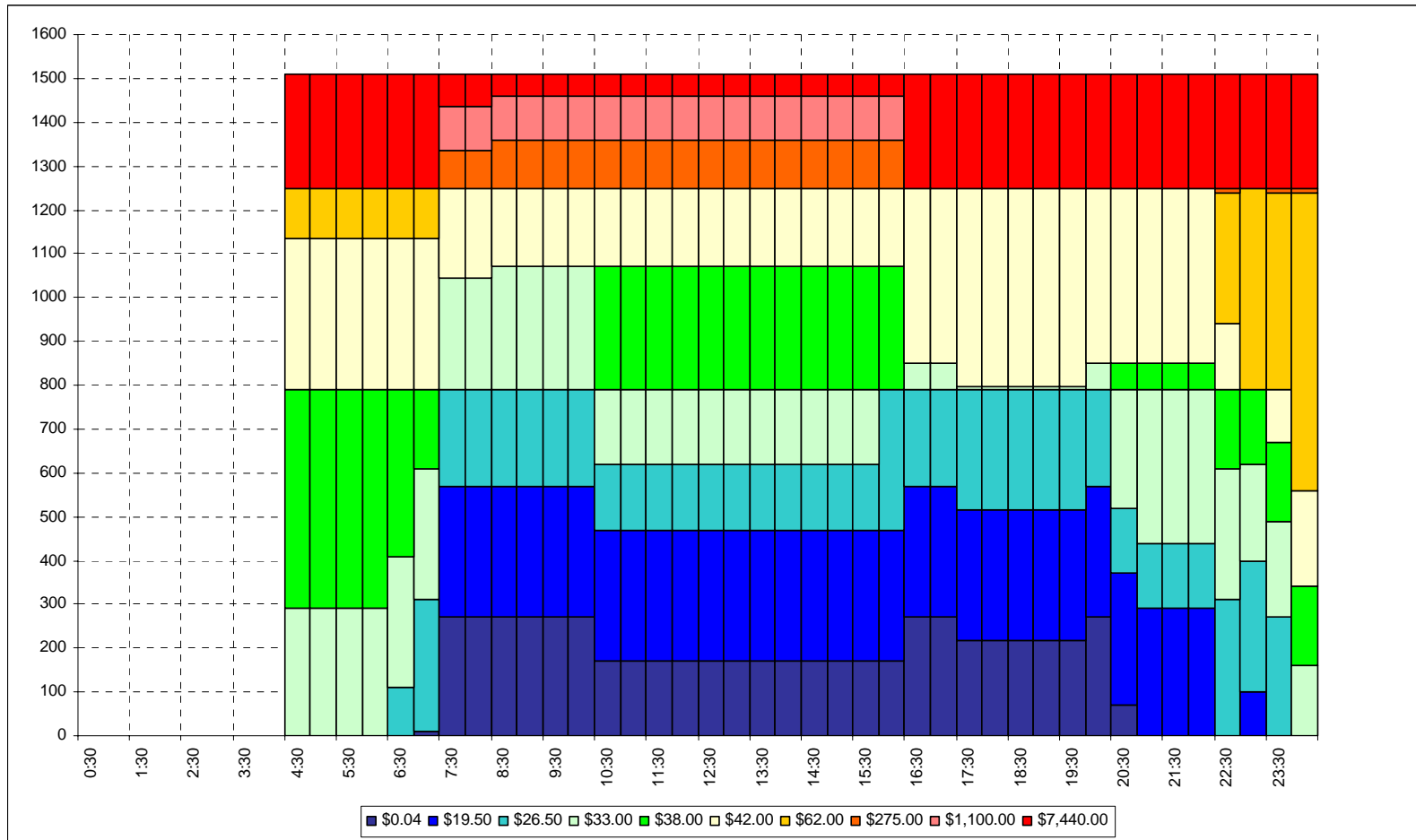
Impact of Intervention

- NEMMCO can only constrain the Vic-Snowy interconnector, i.e. it prohibits export from Victoria.
- This then relieves the intra-regional snowy constraint.
- The Murray (Snowy RRN) price then leaps up to the NSW price.

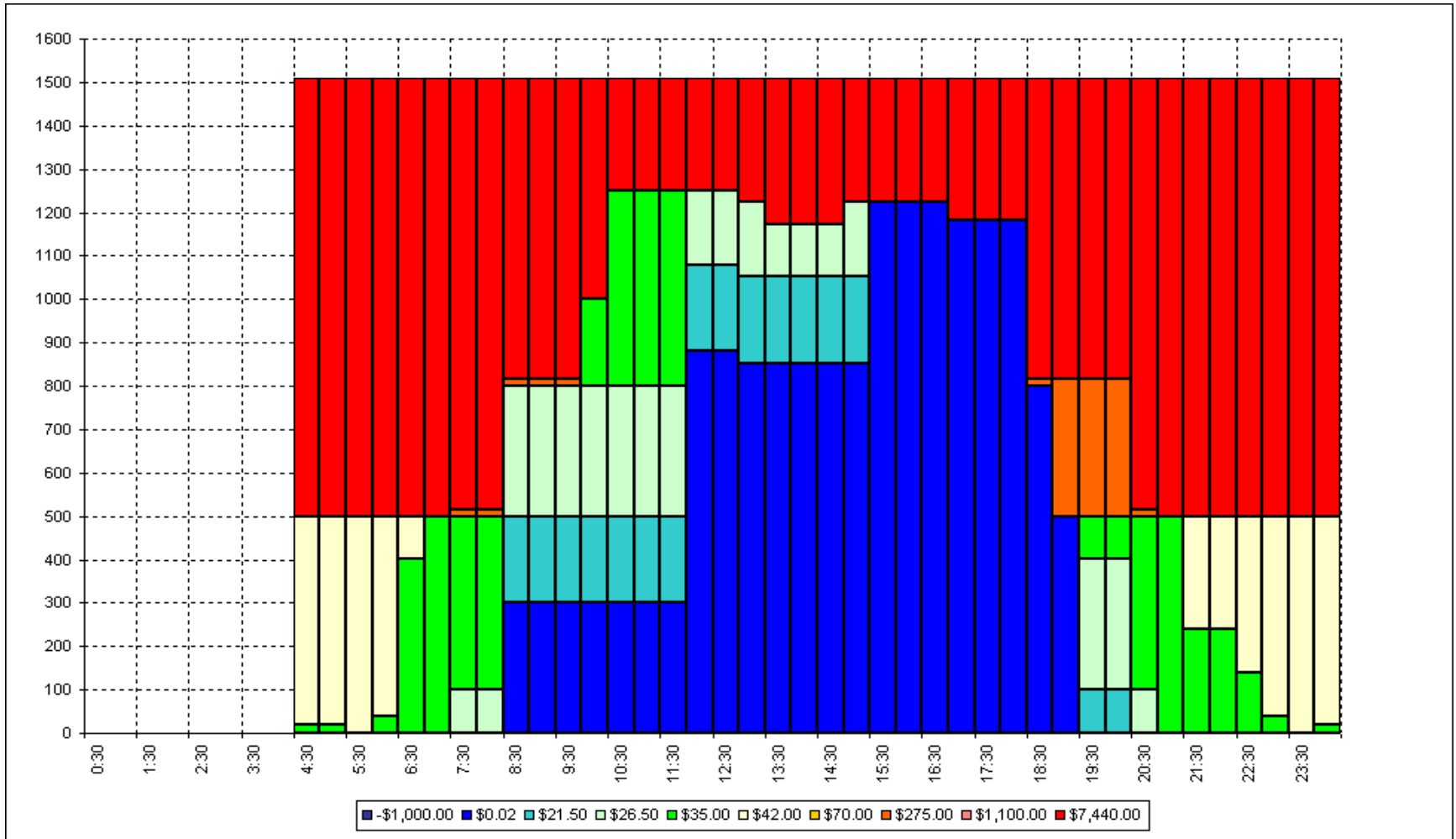


- Vic->Snowy no settlement residue (flow = zero)
- Snowy->NSW no settlement residue (prices equal)

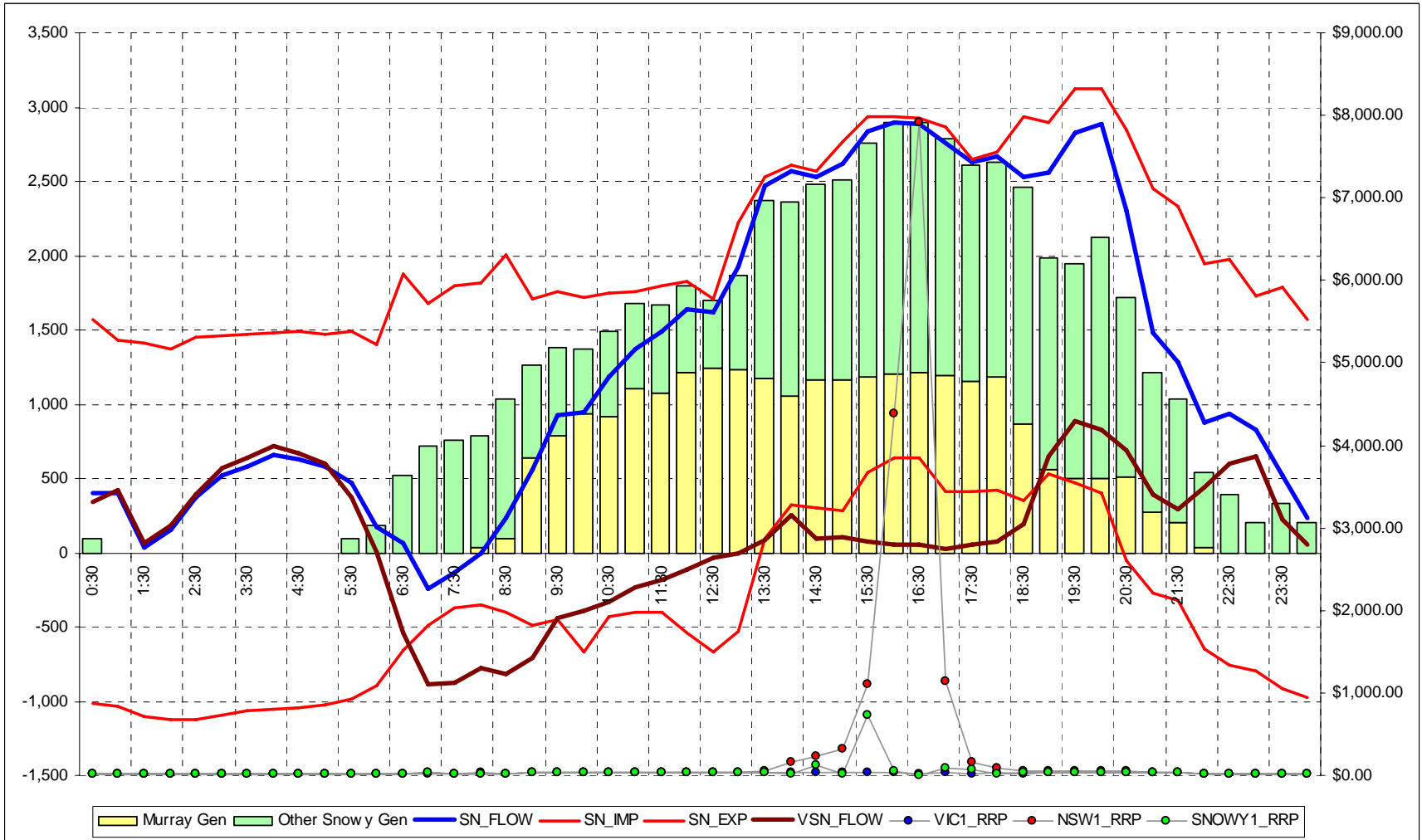
Typical Murray Bidding (23/06/05)



Murray Bidding (08/02/05)

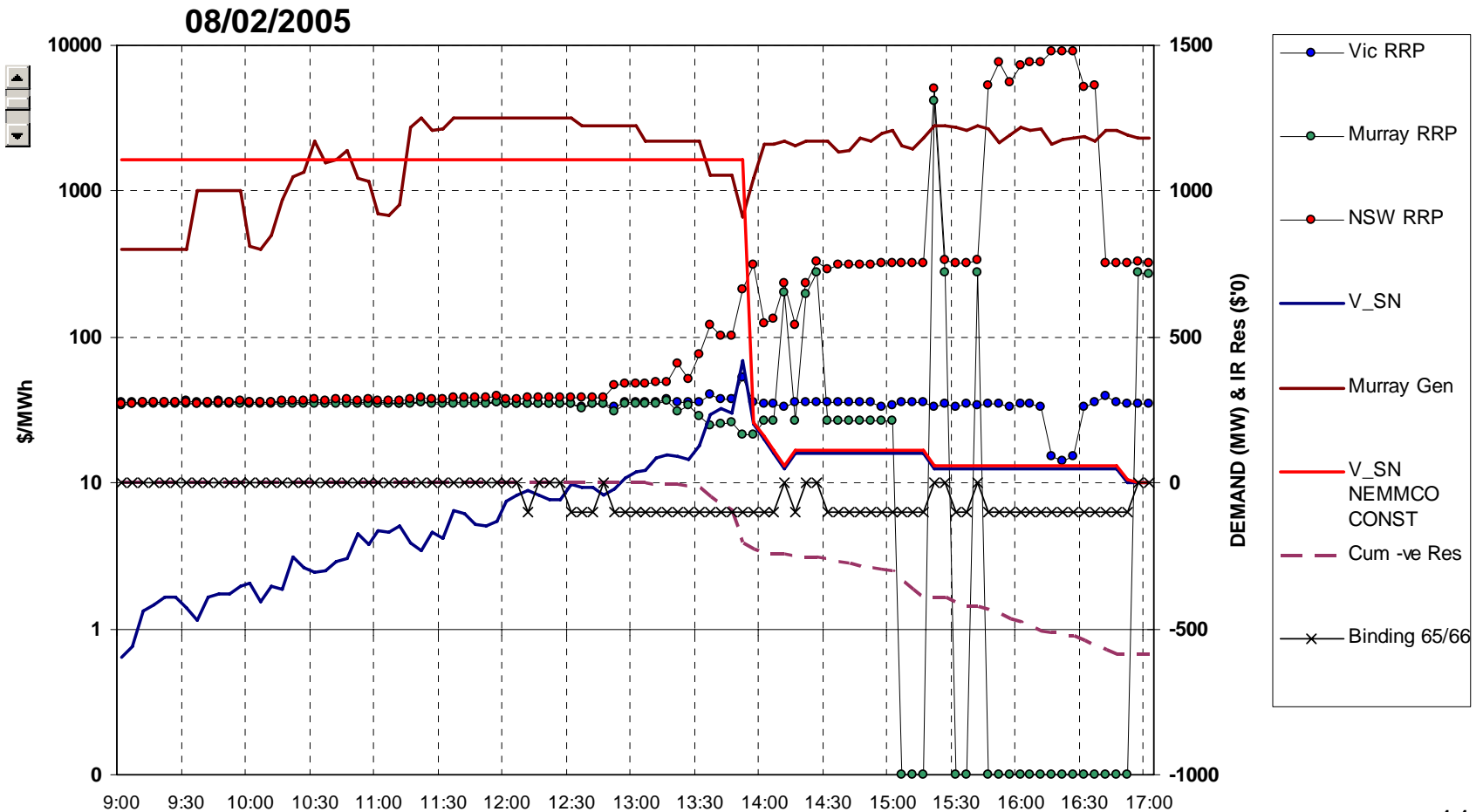


Flow - Snowy to NSW Interconnector on 8/02/ 2005



Vic to Snowy Interconnector (5 minute data) on 8/02/ 2005

5 MINUTE DATA FOR A DAY WHERE NSW RRP HAS EXCEEDED \$300/MWh



The Consequences

- NEMMCO intervened 12 times between November 2004 and December 2005 during high prices in NSW
- All Southern generators are locked out of NSW & Qld.
- Inter-regional hedging has been impossible because neither Vic->Snowy or Snowy->NSW instrument can cover the inter-regional risk.
- More severe separation between Vic and NSW contract markets than would have been the case

Three Effects of the Problem

- significantly lessens competition for physical dispatch with inefficient dispatch for many high priced periods;
- significantly lessens competition by impairing inter-regional hedge contract trading; and
- distorts investment signals.

Inefficient dispatch

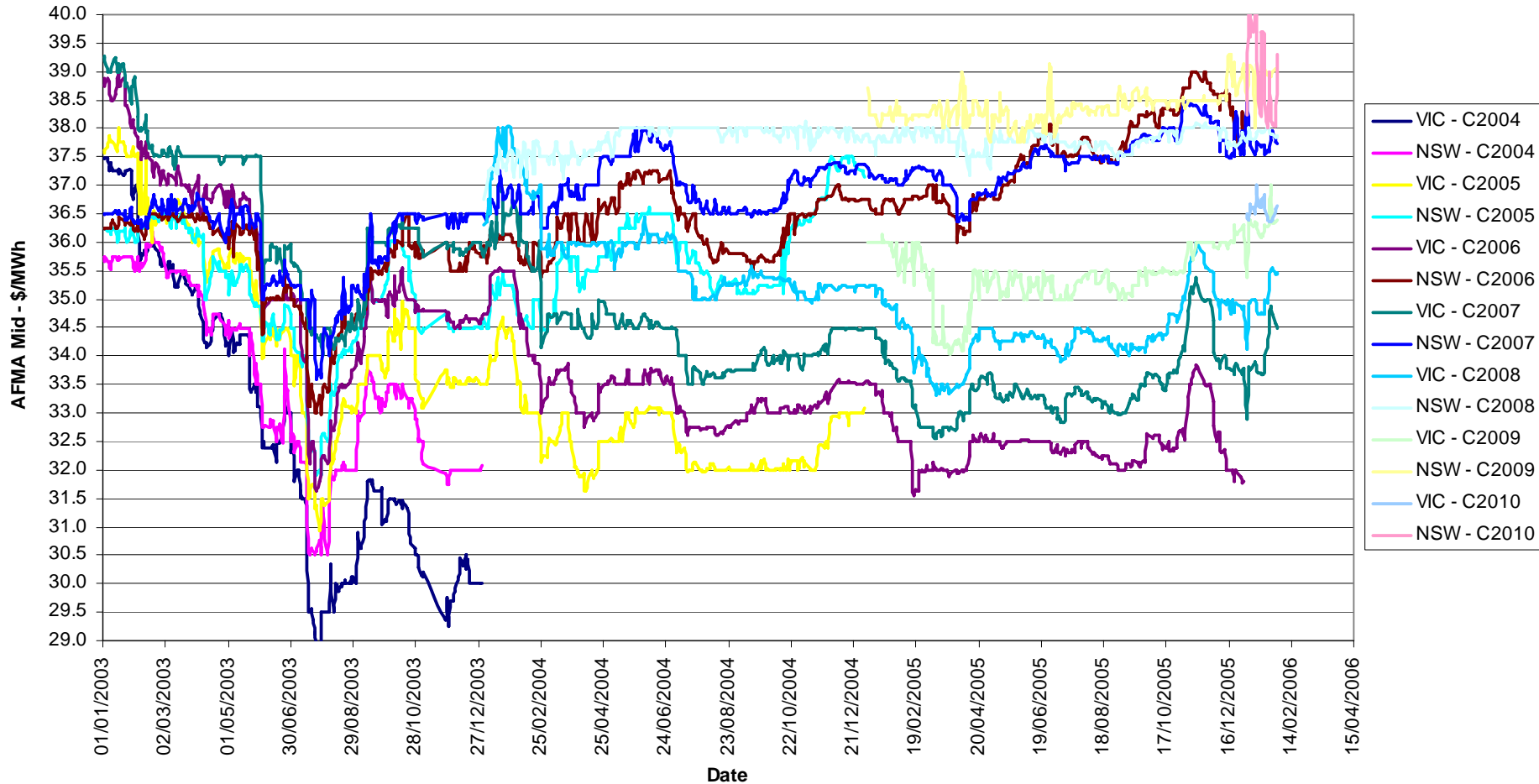
Intervention by constraining Victorian exports to prevent negative residues creates:

- Inefficient physical dispatch :
 - As Murray generation is favoured over Southern Generation, the Wagga transmission path is underutilised.
 - Lower cost Southern generation is prohibited from exporting, replaced by higher cost(value) snowy or NSW generation
- Less competition for physical dispatch at key periods
 - Flows from the Southern NEM to the Northern NEM is blocked, preventing Victorian, South Australian and Tasmanian plant's ability to compete to supply NSW and Queensland load.

Effect on forward hedge contract trade

- The effectiveness of the IRSRs' as a risk management tool is reduced,
 - Vic-Snowy and Snowy-NSW interregional settlement residue auctions are the principal risk management tool for Southern Generators selling hedge contracts referenced to Northern Regional Reference Prices.
 - NEMMCO intervention substantially reduces or even eliminates interregional settlements residues for Victoria to Snowy and for Snowy to NSW.
- Strongly discourage Southern Generators offering hedge products referenced against Northern regional reference prices.
- Forward hedge trading commonly commences *three to four years* prior to period to which the hedge contract applies. Now affecting 2007,2008 & 2009 hedge contract trade.

Separation of Northern and Southern Hedge Market



Source: AFMA Data Forward Contract Prices

Investment incentives

- The distorted dispatch and inter-regional trade in hedge contracts:
 - Creates uncertainty and risk for investors who wish to trade output inter-regionally;
 - Over-encourages generator investment in the Northern Region;
 - Discourages generator investment in the Southern Region; and
 - Encourages investment in duplicate generation capacity to meet individual Northern and Southern peaks;
 - Uncertainty as to how and when the problem will be solved;

In Summary, as a general rule:

- Any constraints **unrelated** to the physical capacity of the electricity system will lead to an inefficient NEM: in dispatch, competition and investment.

Rule change is a long term solution

- The problem may be lessened by regional boundary change
 - (note the proposal automatically sunsets in that eventuality)

However:

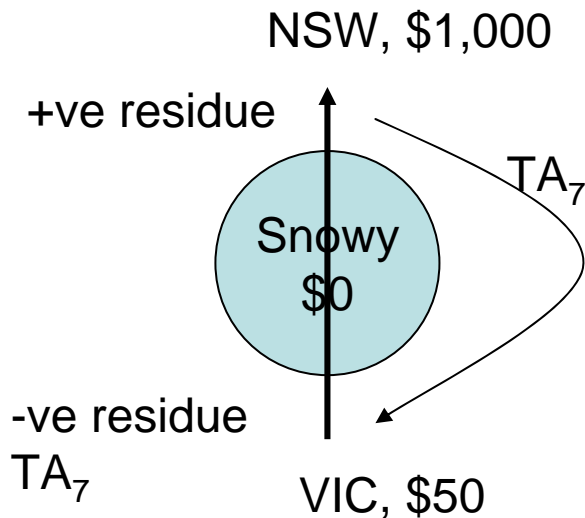
- If the same number or more regions resulted, constraints within loops would still be explicitly priced and negative residue would continue to accumulate; and
- a regional boundary change is unlikely to take effect before 2010

Reasons for an urgent change

- Problem exists right now and has adversely impacted on inter-regional trade to several \$10's of millions;
- The adverse effects of delay will endure because:
 - there is a three to four year lead time in hedge contract trading with 2007, 2008 & 2009 contracts already being actively traded in 2006; and
 - generation investments are by then likely to have been made.
- Current AEMC consultations on boundary issues & constraints do not conflict with nor present any valid reason to defer implementation of our proposal.
- No need to generalise now because the problem can occur in only one place in the existing regional boundaries

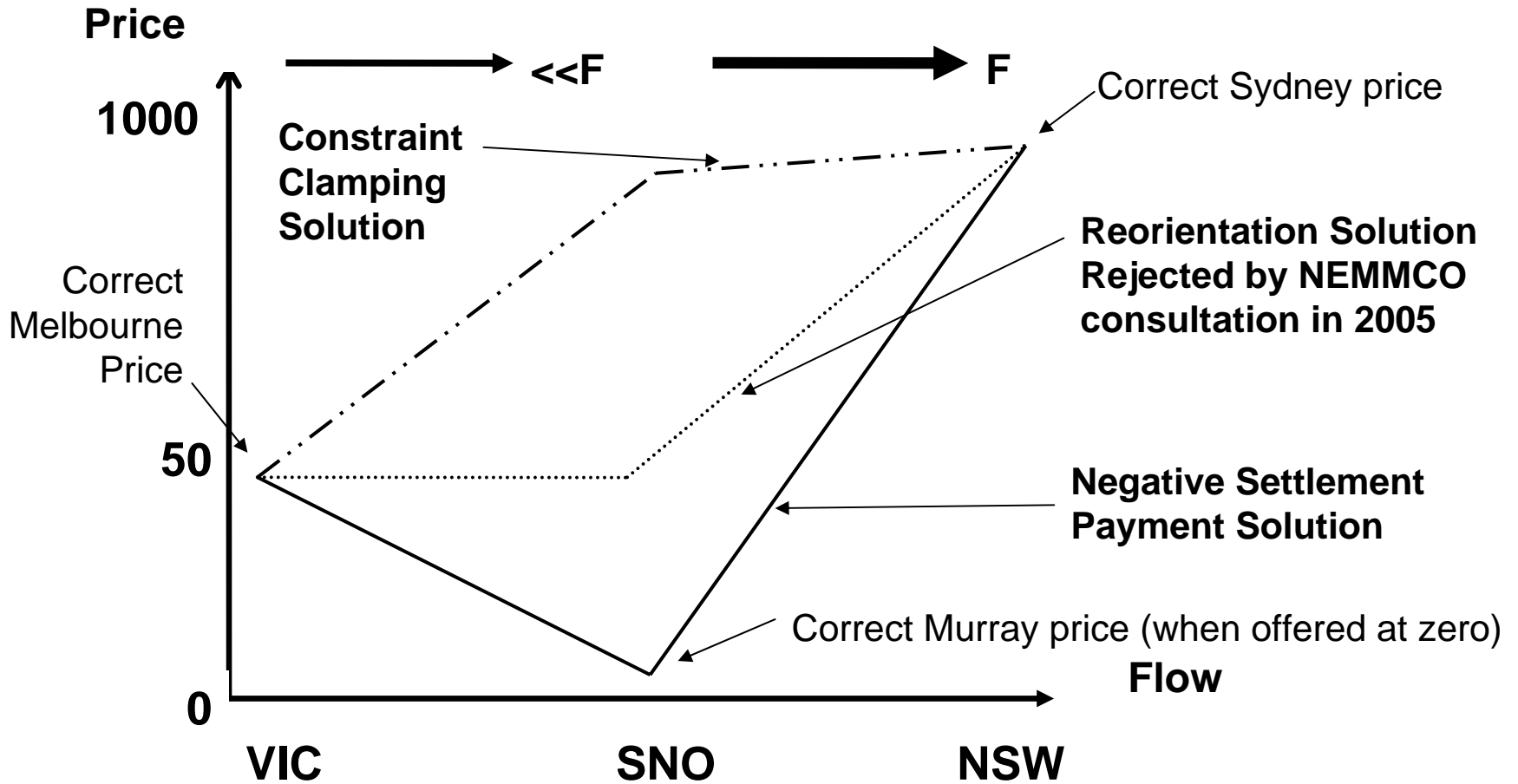
How our proposal works

- The following describes our proposal for northerly flows but it also applies to southerly flows.
- When negative residues accumulate Vic-Snowy, they are simply zeroed using some of the positive Snowy-NSW residues.



- Funding is always more than adequate:
 - The Snowy-NSW residue \gg Vic-Snowy in all cases
 - Accommodates the CSP/CSC scheme

Comparison of Solutions



Impact on SRA's and behaviour

- Despite depletion of NSW-Snowy residues, these instruments are still more valuable than in the NEMMCO intervention case
 - Thus in fact more value for NSW TUOS payers
- Throughput inter-regional hedging is facilitated by buying Vic-Snowy and Snowy-NSW SRA's.
 - Total returns sufficient to fund Vic-NSW position
- By not having the threat of NEMMCO intervention, the commercial motive does not exist to offer Murray generation at zero cost
 - The transfer may never actually be used in practice, because its existence defeats its necessity!

Meeting the Market Objective

- Promotes the long term interests of end-users through efficient :
 - Use of the transmission network;
 - Restoration of inter-regional competition;
 - Inter-regional trading risk management; and
 - Investment signals

Issues Raised by Snowy Hydro

- Narrow in focus
 - Agreed: Urgent issue & proposal sunsets on regional boundary change anyway
- Tumut local generation vs “western ring” generation
 - Irrelevant: An issue to the north of snowy.
- Victorian customers lose out
 - All Customers gain as a NEM-wide class, long term
- Inappropriate long-term Incentives on Snowy Hydro
 - Reverse is the case
- NSW reliability worse off
 - No: NEMMCO suspends intervention when reliability threatened so in fact unchanged.

End

Thank you

Any questions?

Behaviour 2/2/06

