AEMC Public Forum

Review into the role of hedging contracts in the existing
NEM prudential framework

Futures Offset Arrangements

Melbourne, 16 April 2009
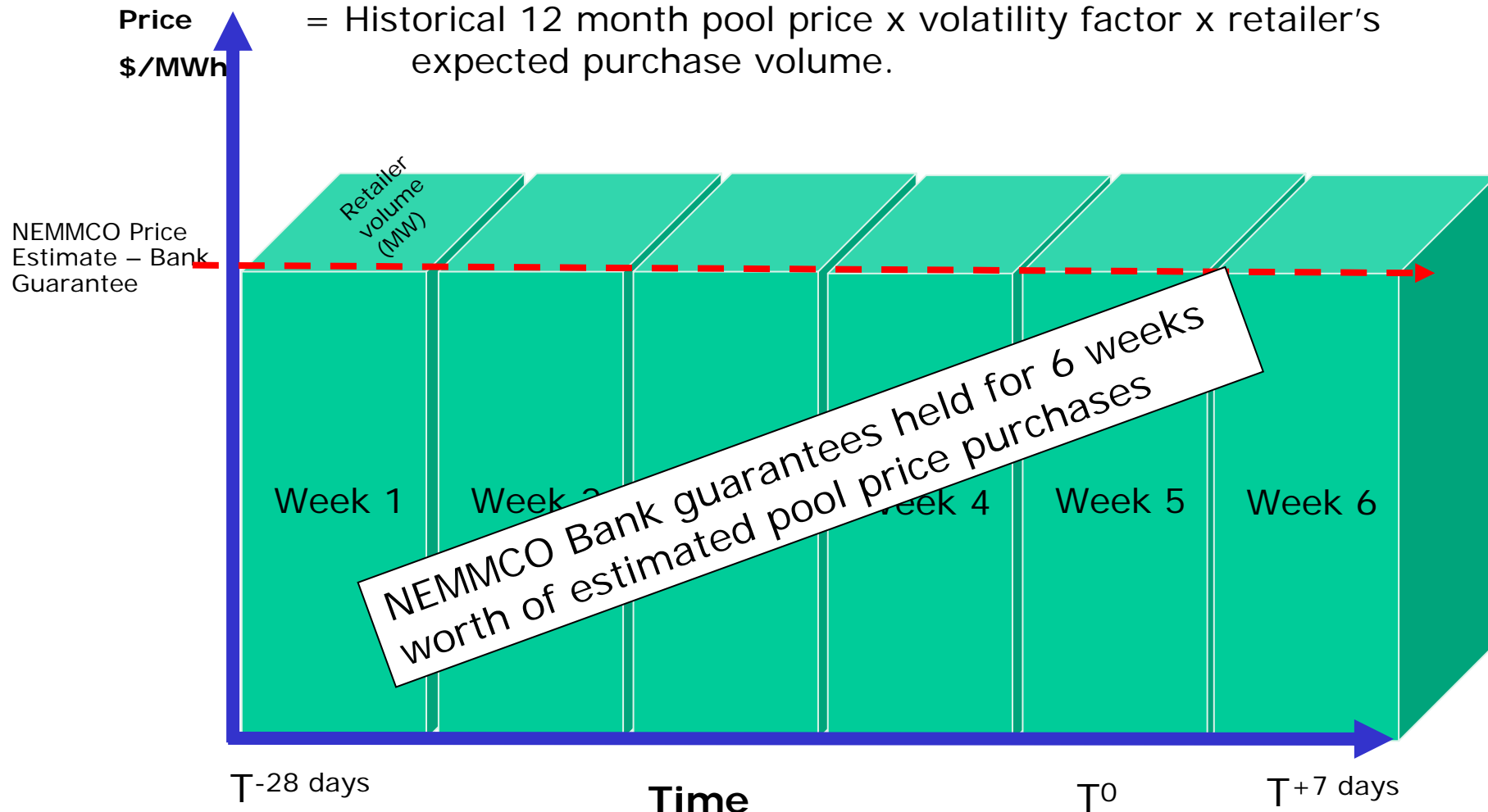
Introduction to Futures Offset Arrangements (FOA)

> Under the existing NEM prudential framework retailers have to post up to approx $4.1 billion in bank guarantees to cover 6 weeks of potential pool price purchases;

> NEMMCO calculates bank guarantee requirement quarterly based on an "MCL Price" = 12 months of pool prices x volatility factor x retailer's average demand (referred to as Maximum Credit Limit).

> The FOA would allow retailers to use futures to offset bank guarantees. i.e.

 1. The retailer agrees to pay SFE price increases (from spot futures) to NEMMCO daily. SFE Clearing Participants confirms daily futures balance.

 2. NEMMCO reduces retailer's MCL guarantee by MCL Price – SFE Futures price.

> *The cheaper the SFE price compared to NEMMCO's MCL price, and the more expensive the cost of bank guarantees, the bigger is the efficiency gain for the individual retailer as well as the whole NEM.*

Futures Offset Arrangements

Aggregate NEMMCO Bank Guarantee (BG) support = up to $5bn (approx)

= Historical 12 month pool price x volatility factor x retailer's expected purchase volume.

Price

$/MWh

NEMMCO Price Estimate – Bank Guarantee

Retailer volume (MW)

Week 1   Week 2   Week 4   Week 5   Week 6

NEMMCO Bank guarantees held for 6 weeks worth of estimated pool price purchases

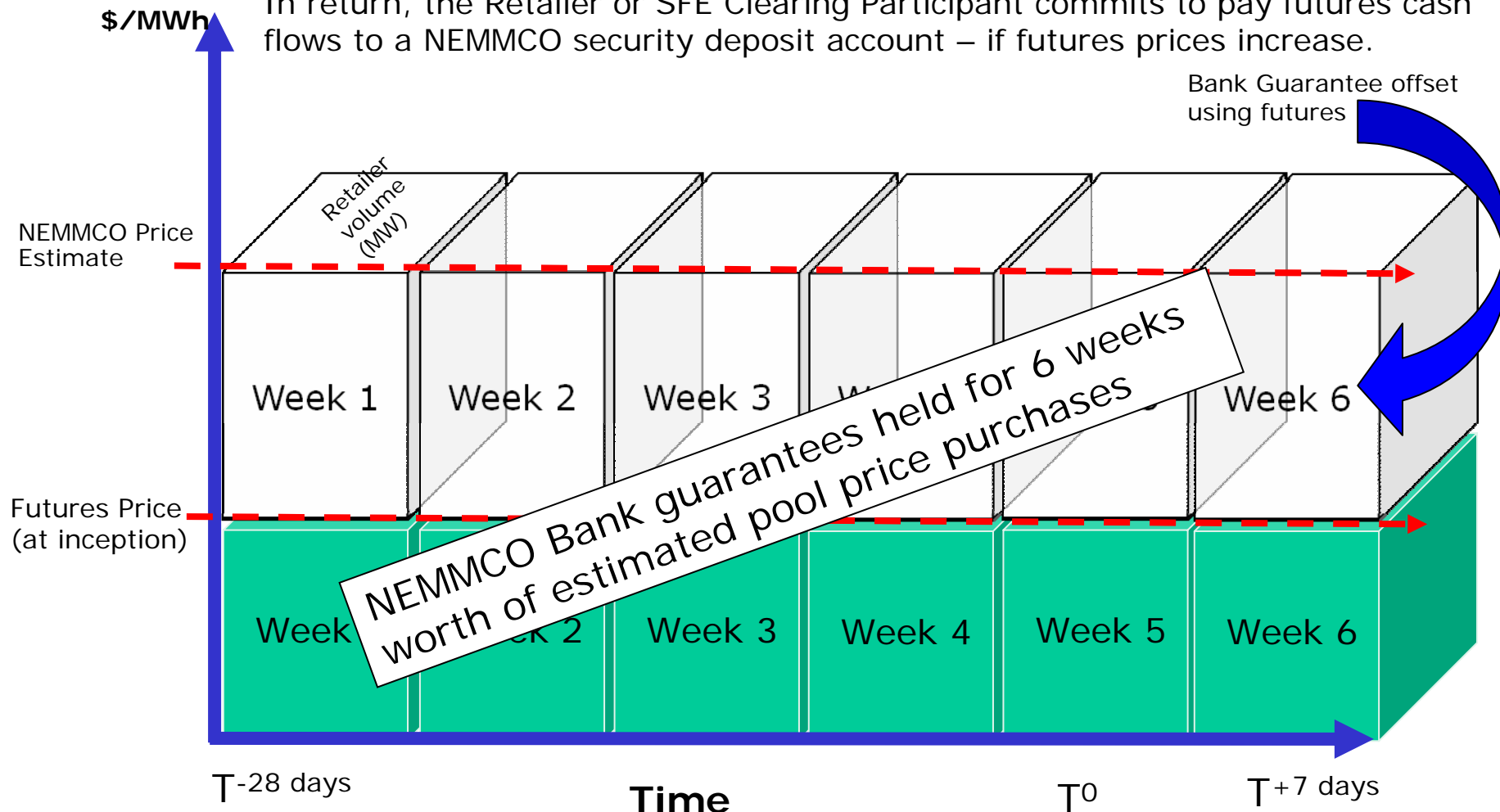T^{-28} days

Time

T^0

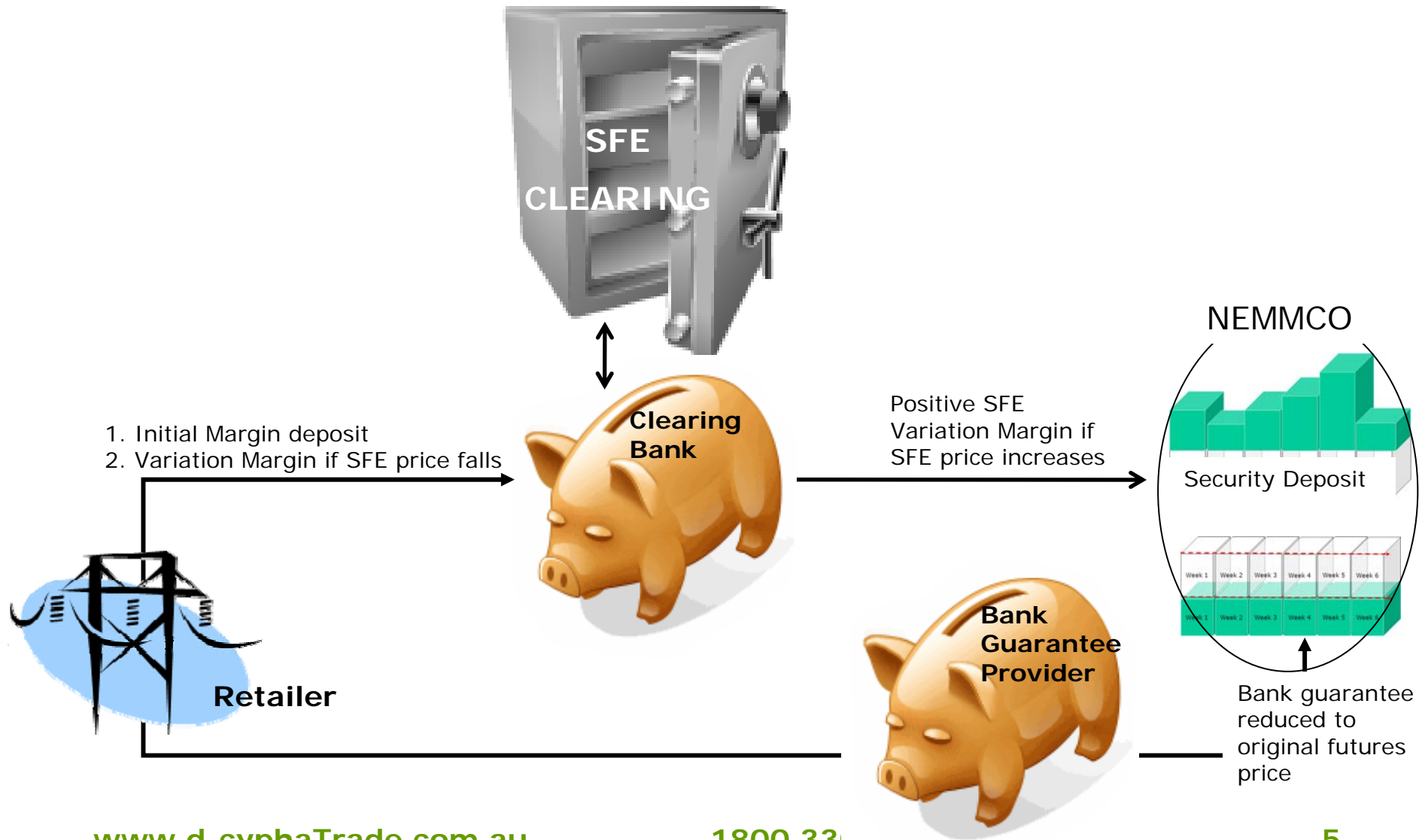T^{+7} days

Futures Offset Arrangements

Under Futures Offsets, if futures price is less than NEMMCO's backward looking price estimate, then Bank Guarantee level is offset.
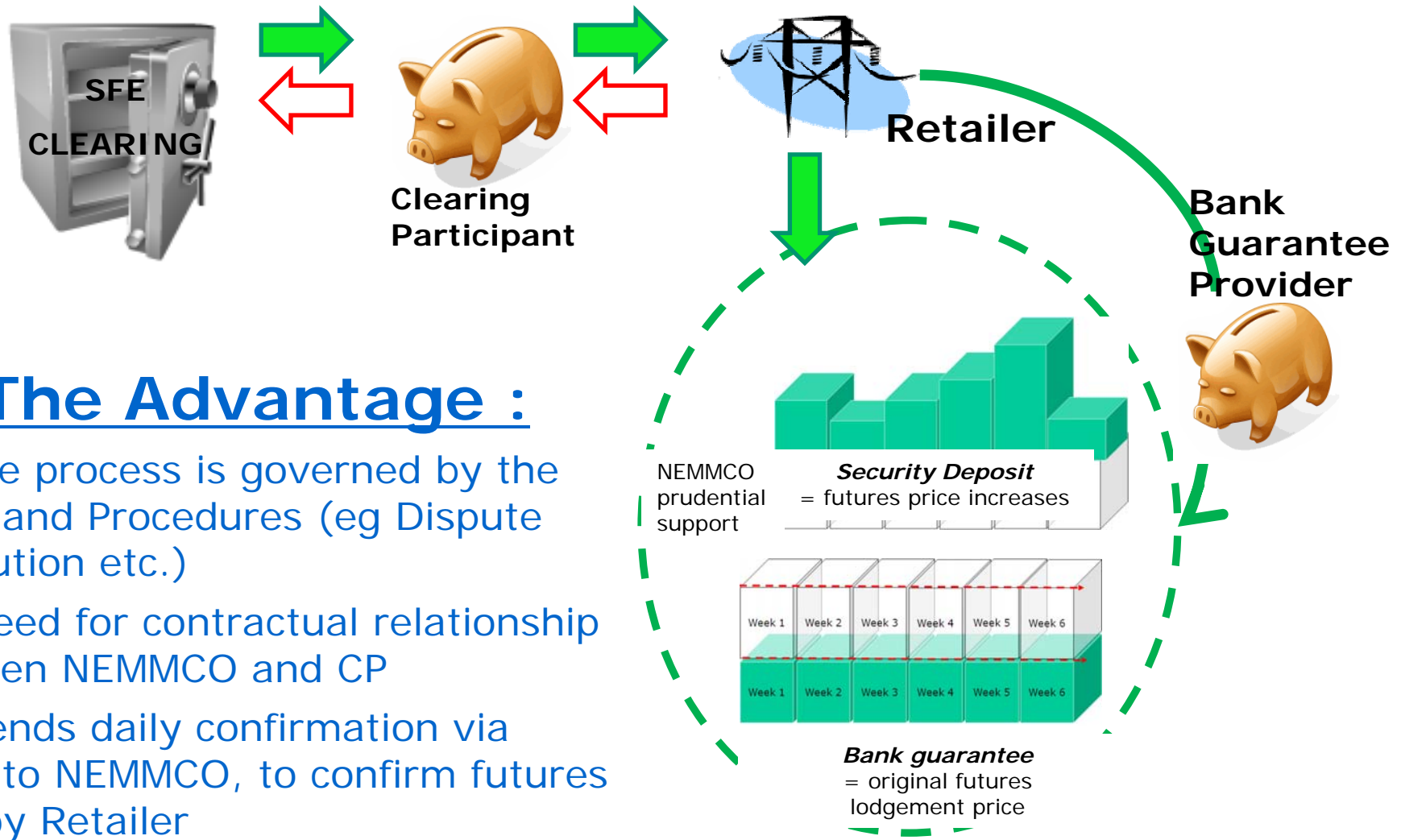
In return, the Retailer or SFE Clearing Participant commits to pay futures cash flows to a NEMMCO security deposit account – if futures prices increase.

$/MWh

Bank Guarantee offset using futures

Retailer volume (MW)

NEMMCO Price Estimate

Week 1   Week 2   Week 3   Week 4   Week 5   Week 6

NEMMCO Bank guarantees held for 6 weeks worth of estimated pool price purchases

Futures Price (at inception)

Week 1   Week 2   Week 3   Week 4   Week 5   Week 6

T^{-28} days   Time T^0 T^{+7} days

Original FOA

SFE CLEARING

NEMMCO

Clearing Bank

Positive SFE Variation Margin if SFE price increases

Security Deposit

1. Initial Margin deposit
2. Variation Margin if SFE price falls

Bank Guarantee Provider

Retailer

Bank guarantee reduced to original futures price

Direct Retailer FOA

SFE CLEARING

Clearing Participant

Retailer

Bank Guarantee Provider

The Advantage :

-Whole process is governed by the Rules and Procedures (eg Dispute Resolution etc.)

-No need for contractual relationship between NEMMCO and CP

-CP sends daily confirmation via email to NEMMCO, to confirm futures held by Retailer

NEMMCO prudential support

Security Deposit = futures price increases

| Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |

| Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |

Bank guarantee = original futures lodgement price

Calculating the "efficiency gain"

Theoretical example only: South Australia Q2 2009.

Assume:

> NEMMCO Q2 MCL price = $320.76/MWh (i.e. P=$71.28 x VF=4.5)

> NEMMCO MCL hours (6 weeks) = 1,008

> d-cypha SFE Futures price = $43.50/MWh

> d-cypha SFE Initial Margin = $6,600 per MW = $6.55/MWh of MCL

> d-cypha SFE Q2 hours = 2,208

> Bank guarantee fee = 4% p.a.

Calculation:

Theoretical Retailer "efficiency gain" based on retailer's cost of funding reduction from Futures Offset.

= [$320.76-($43.50 + $6.55)] x 1,008 hrs / 2,208 hrs x 4%/4

= $1.24/MWh per futures contract.

n.b. SFE transaction fees and initial margin included as add-on within "d-cypha SFE Futures price".

Futures Offset Arrangements

> Rigid bank guarantees do not provide protection for cumulative pool prices higher than NEMMCO's price forecast

MCL guarantee shortfalls Q2 2007: Pool prices exceeded NEMMCO's forecast (and exceeded bank guarantees)

Region	Actual June 2007 pool price /MWh	MCL Bank Guarantees for Qtr 2 2007 /MWh	June 2007 Bank Guarantee shortfall /MWh	June 2007 MWh consumed	NEMMCO % Bank Guarantee shortfall June 2007	Bank Guarantee Shortfall basis June power consumption
SA	$ 102.63	$ 83.35	$ 19.28	1,211,993	23%	$ 23,368,439
QLD	$ 192.45	$ 79.94	$ 112.51	4,197,400	141%	$ 472,249,418
VIC	$ 143.28	$ 88.97	$ 54.31	4,528,752	61%	$ 245,965,554
NSW	$ 230.66	$ 54.09	$ 176.57	7,074,958	326%	$ 1,249,197,085

Total approximated NEMMCO Cash calls to meet MCL Bank Guarantee shortfalls for June $ 1,990,780,496

Single Day Shortfalls (assumes avg demand)	Max single day pool price/MWh
$ 4,248,884	$ 189
$ 82,508,282	$ 670
$ 46,059,215	$ 394
$190,796,532	$ 863

Bank Guarantee requirement = Volatility Adjusted MCL Price Estimate (VF x P)

MCL   http://www.nemmco.com.au/settlements/prudentials.htm

Region	Qtr 2 2007 Volatility Factor VF	Q2 2007 Estimated Price P
SA	2.1	39.69
QLD	2.8	28.55
VIC	2.4	37.07
NSW	1.7	31.82

Appendix 1. Summary of FOA Benefits and Compliance with the NEM Objective

Economic benefits	Futures Offset Arrangements	NEM Objective
1. Reduced counterparty credit risk	Daily margining significantly improves the prudential framework of the NEM and reduces the NEM's direct and indirect current credit risk exposure to reallocators	➢ Less credit risk makes the market more efficient ➢ Positive impact on price for consumers of electricity
2. Diversity of Credit Support Providers	SFE Clearing Participant support in addition to existing MCL guarantee providers as opposed to non-rated or below investment grade generators	➢ Promotes efficient investment in the NEM because financial integrity of the market is increased
3. Prudential support coverage during high pool prices	Daily futures cash flows are price-following unlike current MCL guarantees whose "protection level" is based on historic prices.	➢ Promotes efficient investment in the NEM because financial integrity of the market is increased
4. Regulatory Integrity	SFE and SFECC operate a licensed market under Corps Law and are supervised by regulator (ASIC) with expertise in financial markets	➢ Increases the attractiveness of the market to new investors ➢ Improved long term quality of the market and lower cost of compliance

d-cyphaTrade

Summary of FOA Benefits and Compliance with the NEM Objective

Economic benefits	Futures Offset Arrangements	NEM Objective
5. Efficiency for new entrant retailers and existing retailers	Improves collateral funding costs of retailers due to efficiency of daily margining	➢ Promotes long term efficient investment by retailers in the NEM ➢ Increased retail competition and lower cost for retailers results in most efficient price for electricity consumers
6. Competitive Financial Instrument	Higher liquidity in futures for any given NEM region because contracts are traded by interstate and international sellers including banks and trading houses, not just intraregional reallocators	➢ Promotes long term efficient investment by retailers in the NEM ➢ Increased retail competition and lower cost for retailers results in most efficient price for electricity consumers
7. Unlimited supply of off-set instruments	Futures market depth and number of market participants is unlimited as it is not limited by energy commitment	➢ Long term readily available offset instruments leads to reduction in collateral funding costs and leads to long term more efficient retail pricing

Summary of FOA Benefits and Compliance with the NEM Objective

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Economic benefits	Futures Offset Arrangements	NEM Objective
8. Supports effective unbundling of retailers and generators	Use of futures as hedging instrument as well as a prudential tool vis a vis NEMMCO is more cost effective for a retailer than investment in a generation asset	➢ Increased retail competition due to less vertical integration results long term in most efficient price for electricity consumers
9. Market Transparency	Futures market is fully transparent as opposed to reallocation contracts which is a non-disclosed, bi-lateral agreements whose terms vary significantly	➢ Transparent markets promote long term efficient pricing in the NEM
10. Anonymity of counterparty	Retailers buy futures anonymously and lodge FOA's anonymously encourages retailers to use the instrument as they do not have to reveal their position to a reallocator who may also have a competing retail interest	➢ Long term use of an anonymous prudential instrument leads to increased financial reliability of the NEM ➢ Market quality is improved as it levels the playing field and increases access for all participants
11. Promotes peak as well as base load generation technology	Peakers can readily participate in the futures market	➢ Promotes long term security of supply in the NEM as peaking plants are not excluded from an attractive market segment