

The Demand Side and Transmission Access 10 June 2002

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Purpose

- Provide reminder of case for two sided markets – access as well as energy
- Consider starting point
- Identify mechanisms that enable dynamic benefits of load to be captured in access market
- Identify practical issues and issues for further development

“Fall back” Models

Fall back approaches

- Two models “merit consideration as possible ways forward”
- Assessed against:
 - defining and allocating entry and exit rights
 - trading and constraint resolution
 - interactions with NETA
 - settlement
 - recovery of constraint costs
- “Raises issues for resolution if they are to be taken forward” – demand side participation one such issue

Merits of Two sided markets

What is meant by demand side and its participation?

Any form of decision taken by an electricity purchaser or their supplier to vary consumption.

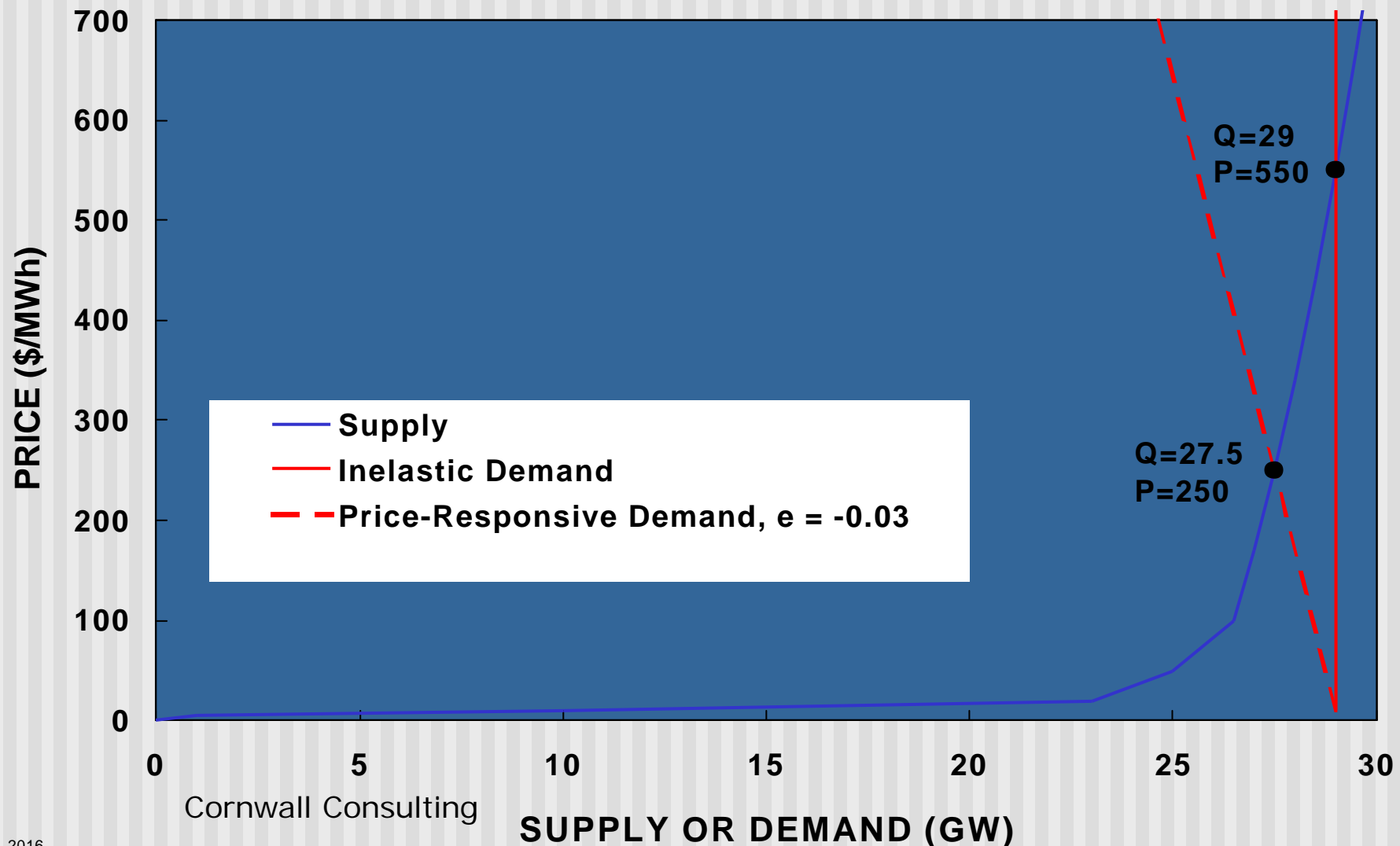
Wholesale

Administered	Ancillary service contracts DM programmes Load management contracts	DSB Interruptible tariffs Embedded generation Load shifting	"Dynamic"
	Teleswitching (Ec7) EE programmes	Teleswitching (price based) Interruptible tariffs Smart metering	

Benefits of demand side participation

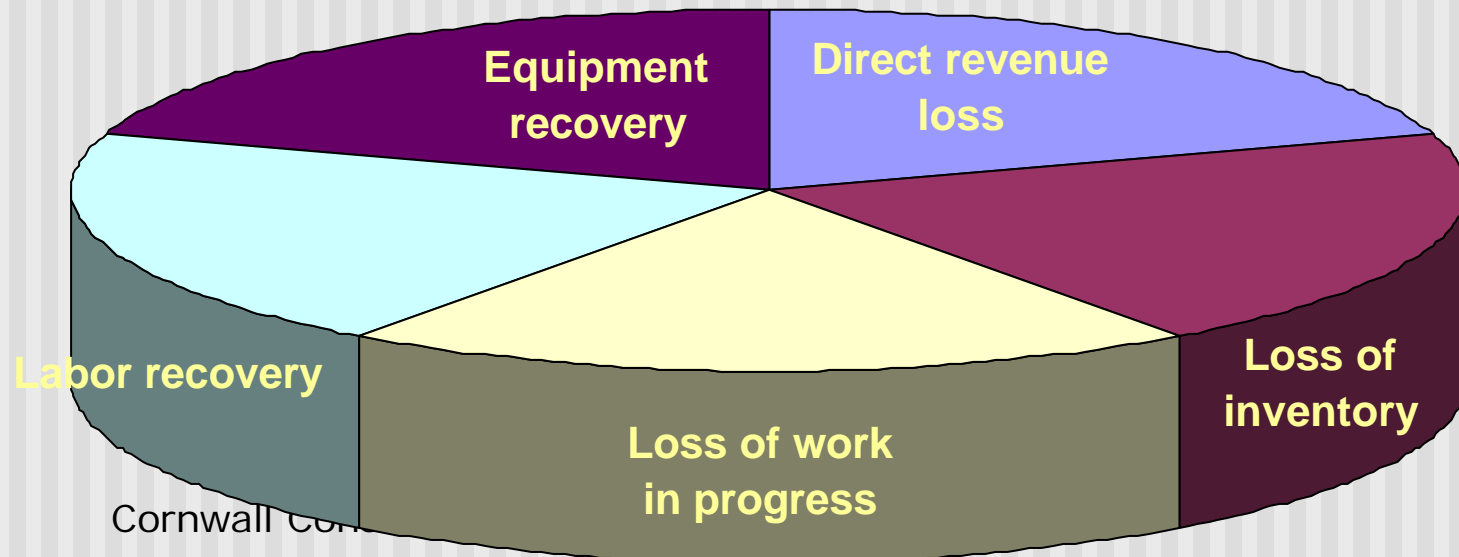
- Can improve reliability and security of energy supply (UK triad avoidance; NZ 500MW IL out of 7GW)
- Can reduce the cost of energy services and encourage more efficient resource utilisation
- Can improve environmental performance – but how to set shadow carbon values?
- Creates two sided markets and can constrain market power
 - auctions
 - constraint management

Limited demand response can cut price spikes



Costs of power problems

“Outages cost facilities an average of \$4,000 to \$11,000 each, although many end users suffer much greater losses. For example, one semiconductor manufacturer reports that a single five-second outage could cost the company \$12 million in lost production alone - the equivalent of its entire annual electricity bill.” - E-Source, May 1999



Status Quo

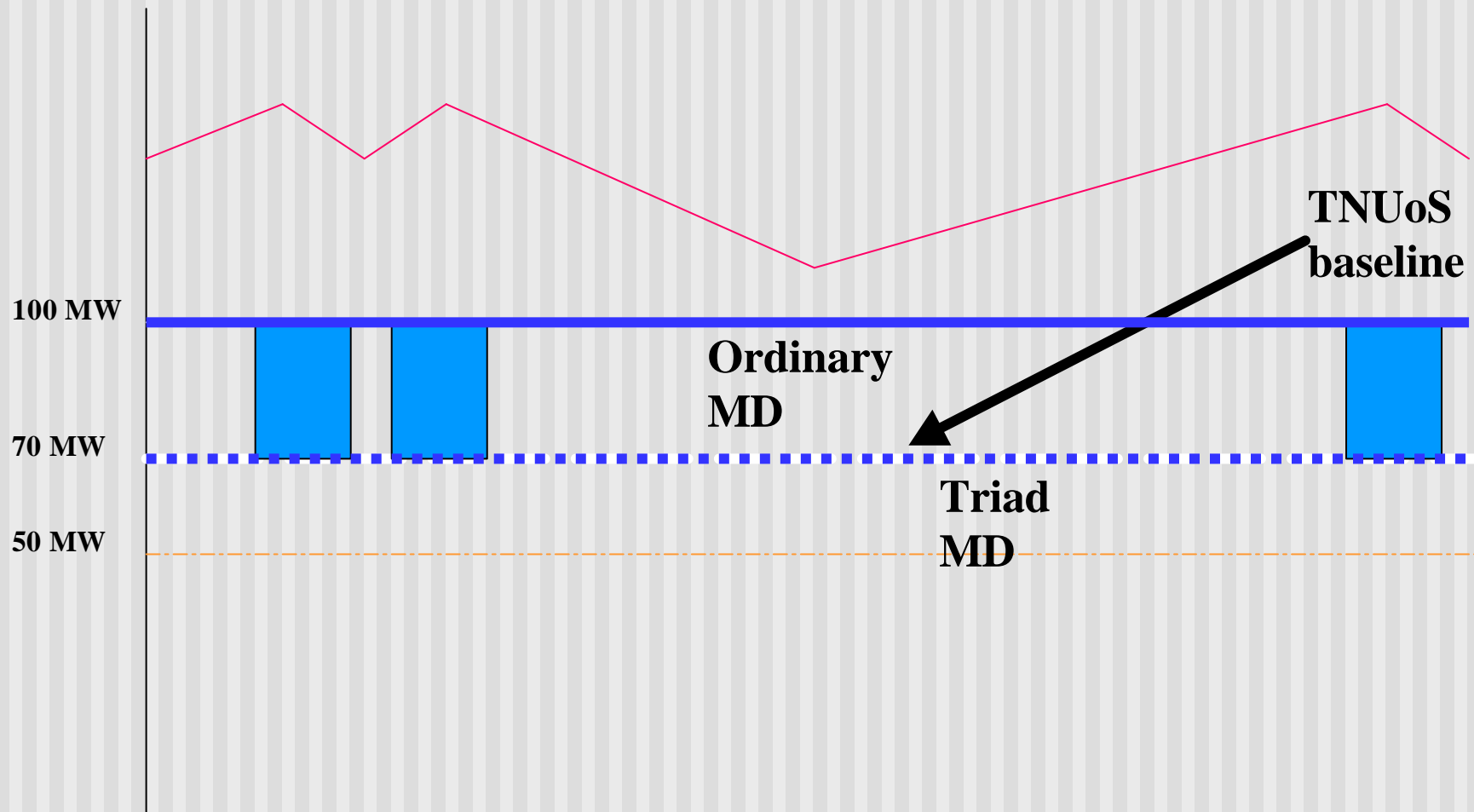
Present treatment of demand side (1)

- Payments by distributors in respect of connection
- Payments by suppliers in respect of TNUoS
- Payments by suppliers in respect of BSUoS
- Note implications of DUoS – alignment
 - (i) TNUoS vs DUoS
 - (ii) DUoS vs DUoS

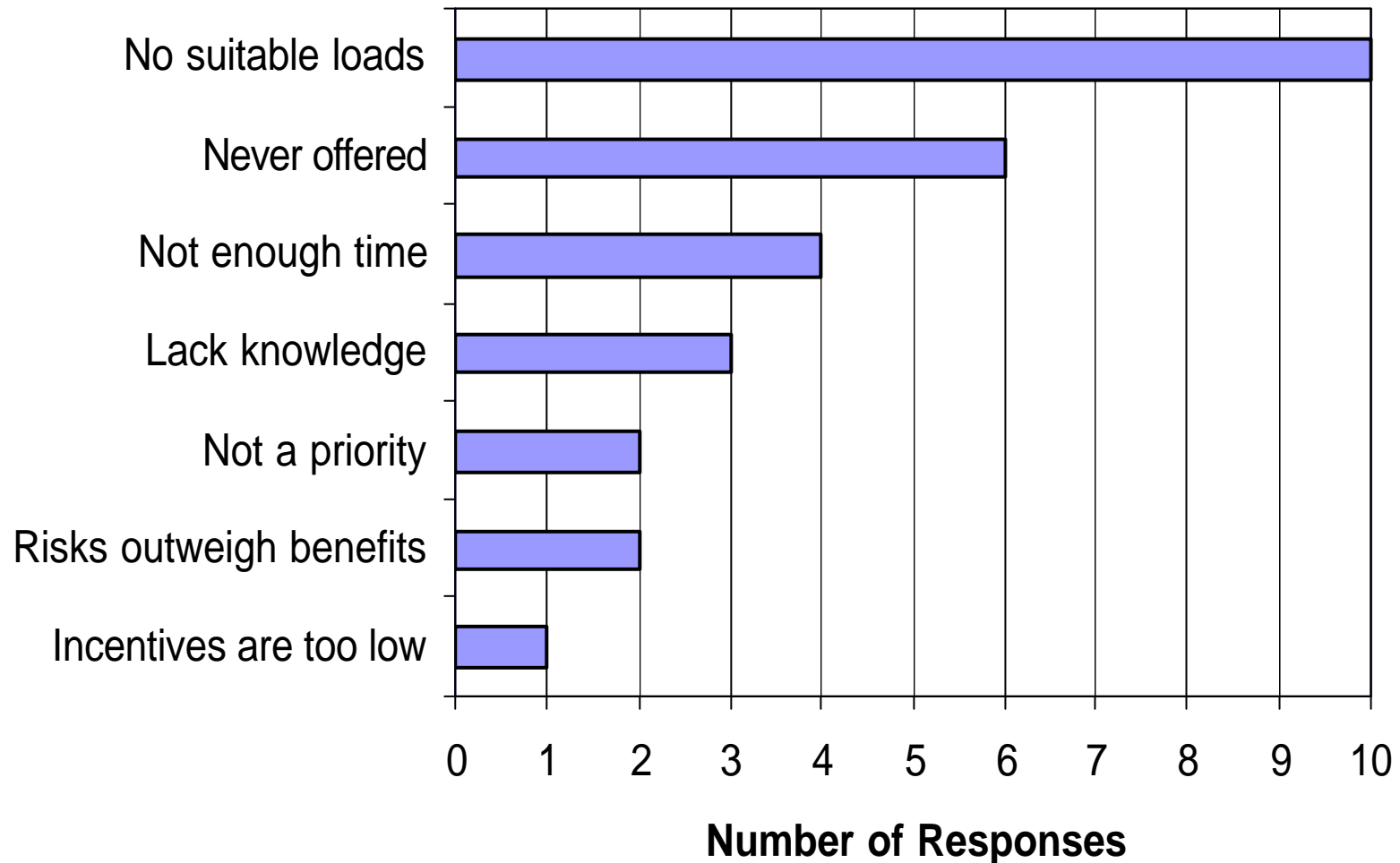
Present treatment of demand side (2)

- TNUoS allocation:
 - triad for HH customers
 - total annual consumption for NHH
- Other DS options:
 - option of BM participation
 - commercial load management between market participants
 - balancing service arrangements for ancillaries
 - limited DS success under NETA

Triad



Barriers to DS participation



Looking Forward

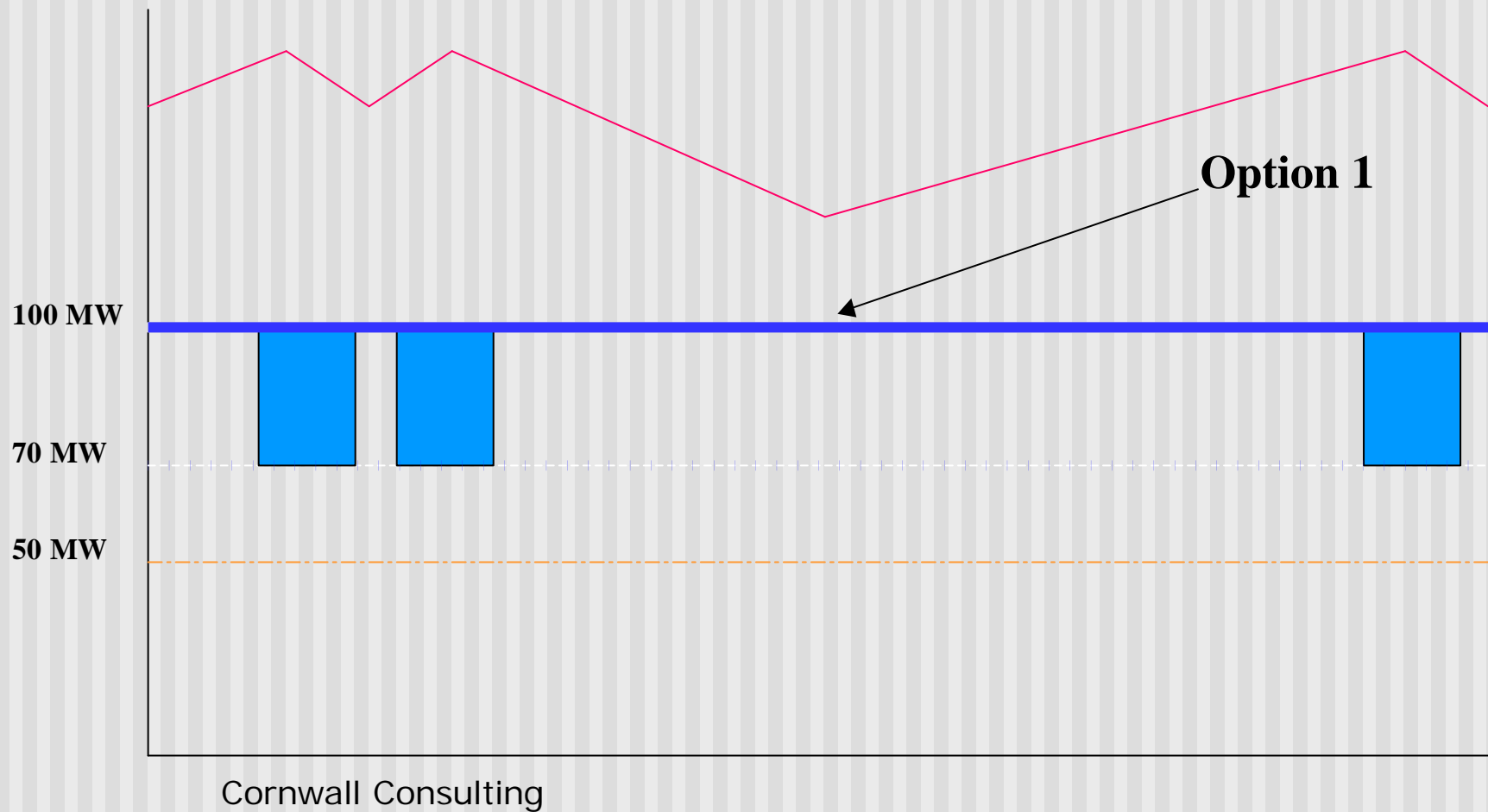
Demand side must have firm tradable rights

- Enables compensation against network failure
- Cost certainty and risk management
- Tradability will enable within year adjustments and switching
- Provides baseline to trade interruptibility
- Opens up options
- Parity and equity
- No countervailing reason why not
- Others?

What form should they take?

- Ex ante definition?
- Annual definition or longer?
- Seasonal rights? Firm and non firm?
- Penalties for overrun?
- Use it or lose it?
- choice – firm and non-firm rights?
- Parity for HH and NHH?

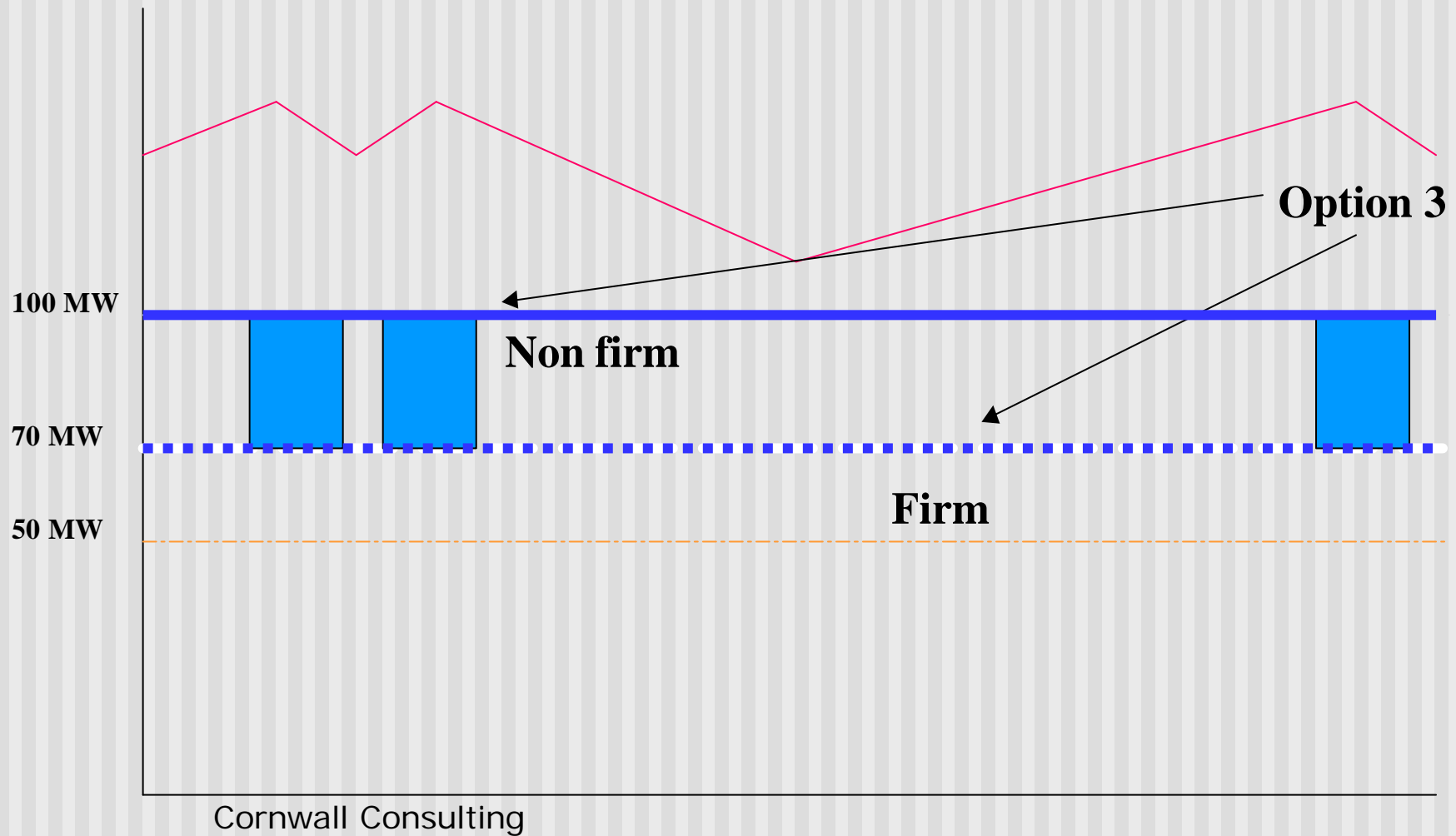
Rights definition (1)



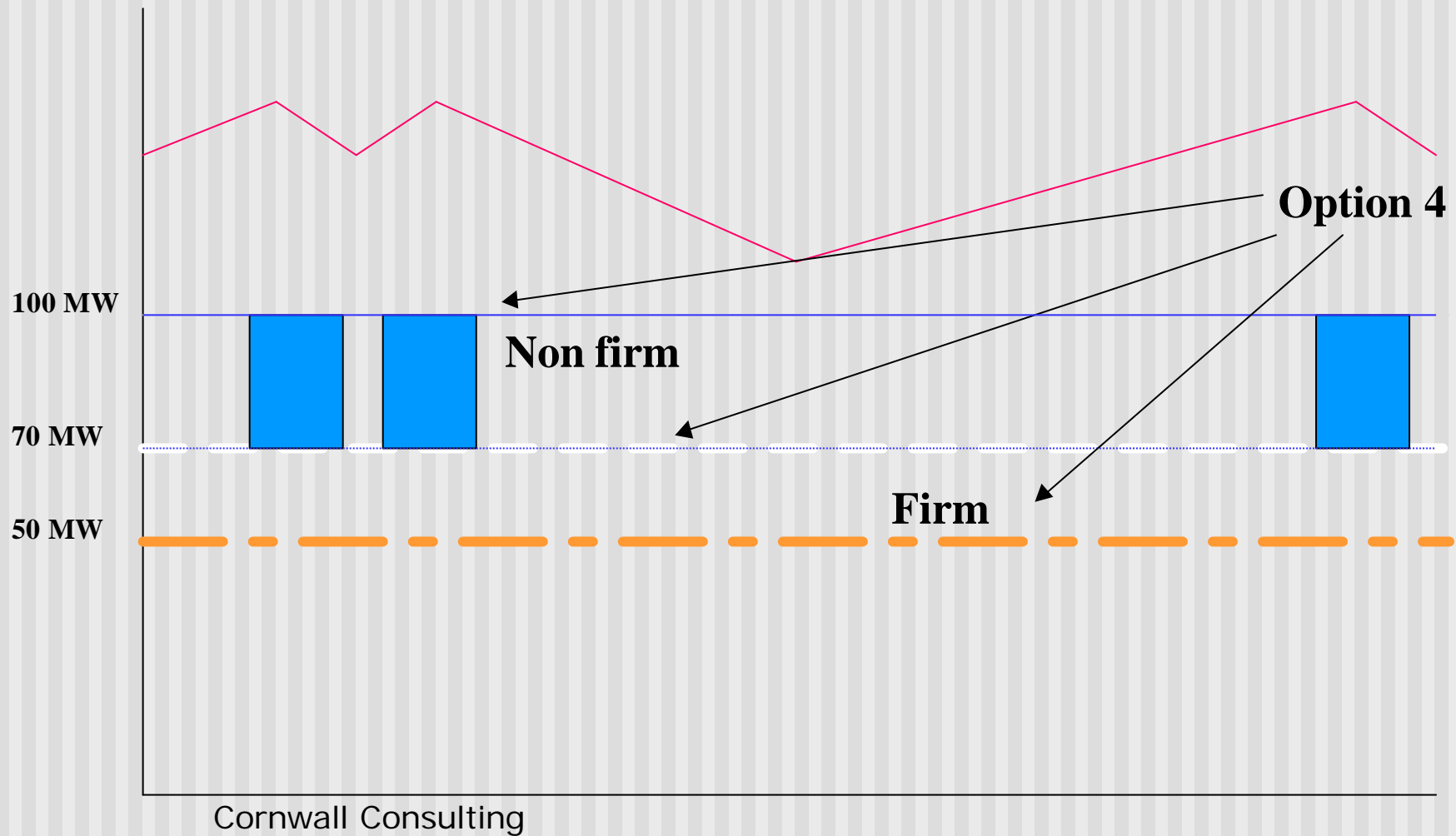
Rights definition (2)



Rights definition (3)



Rights definition (4)



Other issues – large customers

- Dynamic role for suppliers vs DSOs
- Compliance and audit – HH and NHH
- Embedded generation and embedded benefits?
- Interaction with balancing service contracts?
- Interaction with balancing mechanism?
- Interactions with short term forward markets?

Other issues - retail

- DM debate has focused on large customers
- However, mass market programmes can be important – teleswitching, interruptible tariffs etc.
- Profiling and estimation issues
- Customer retention is a big issue
- ESCos - myth or reality?
- Paradox of competition
- Innovation secondary to price
- Important not to foreclose options

Desirable outcome?

- Ex ante definition of rights and associated performance requirements by TO
- Choice over quantity, duration of rights
- Differential rights – firm vs non firm?
- Ability to sell back firm rights in event of scarcity to SO
- Open competition with generators in constraint relief
- Simple mechanisms to accommodate retail change

Unused slides

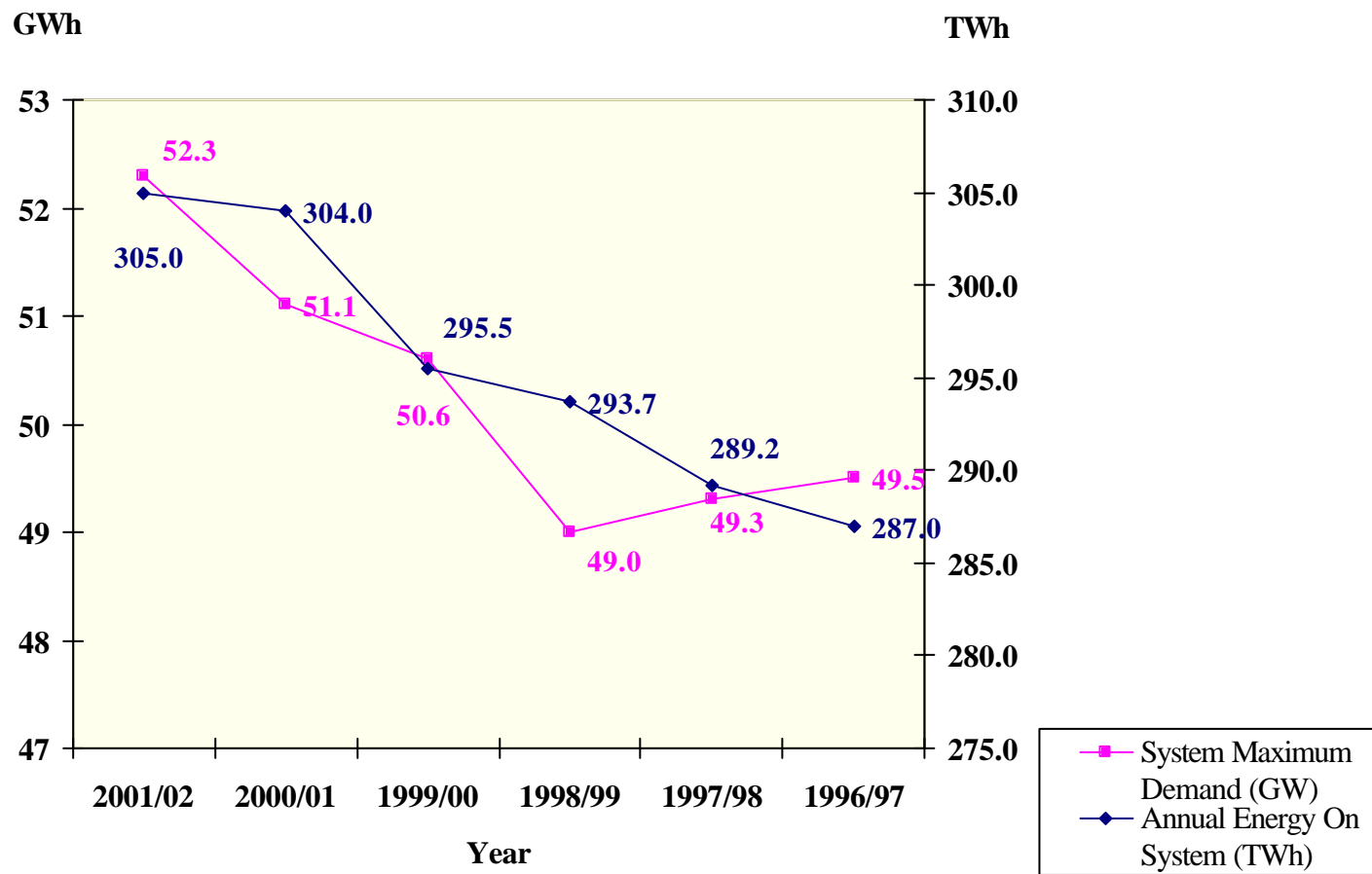
Comparison (1)

Feature	Model 1	Model 2
Primary rights	Two sided allocation up to GC	Two sided allocation up to GC/GSP limit. Performance agreements
Access charges	For discussion	Zonal
Secondary trading	Constraint contracts only	Limited intermediary
Constraint management	Option contracts	Access market

Comparison (2)

Feature	Model 1	Model 2
NETA interactions	Minimal but unclear	None after Gate Closure
Imbalance settlement	Option contract penalty	Administered buyout price
TO/SO separation	None	Important
Transmission failure	Scheme linked to SSP	Performance agreements
BSUoS	Flat?	Locational, by zones/GSP

NGC “Metrics”



Barriers to DSB

- Disparity between wholesale costs and retail tariffs
- Existence of price caps
- Supply side centric market designs
- Artificial limits on reliability services
- Immaturity of metering and info systems
- Absence of third party intermediaries
- Immaturity of risk management markets