

Transmission Capacity - Transparency & Investment

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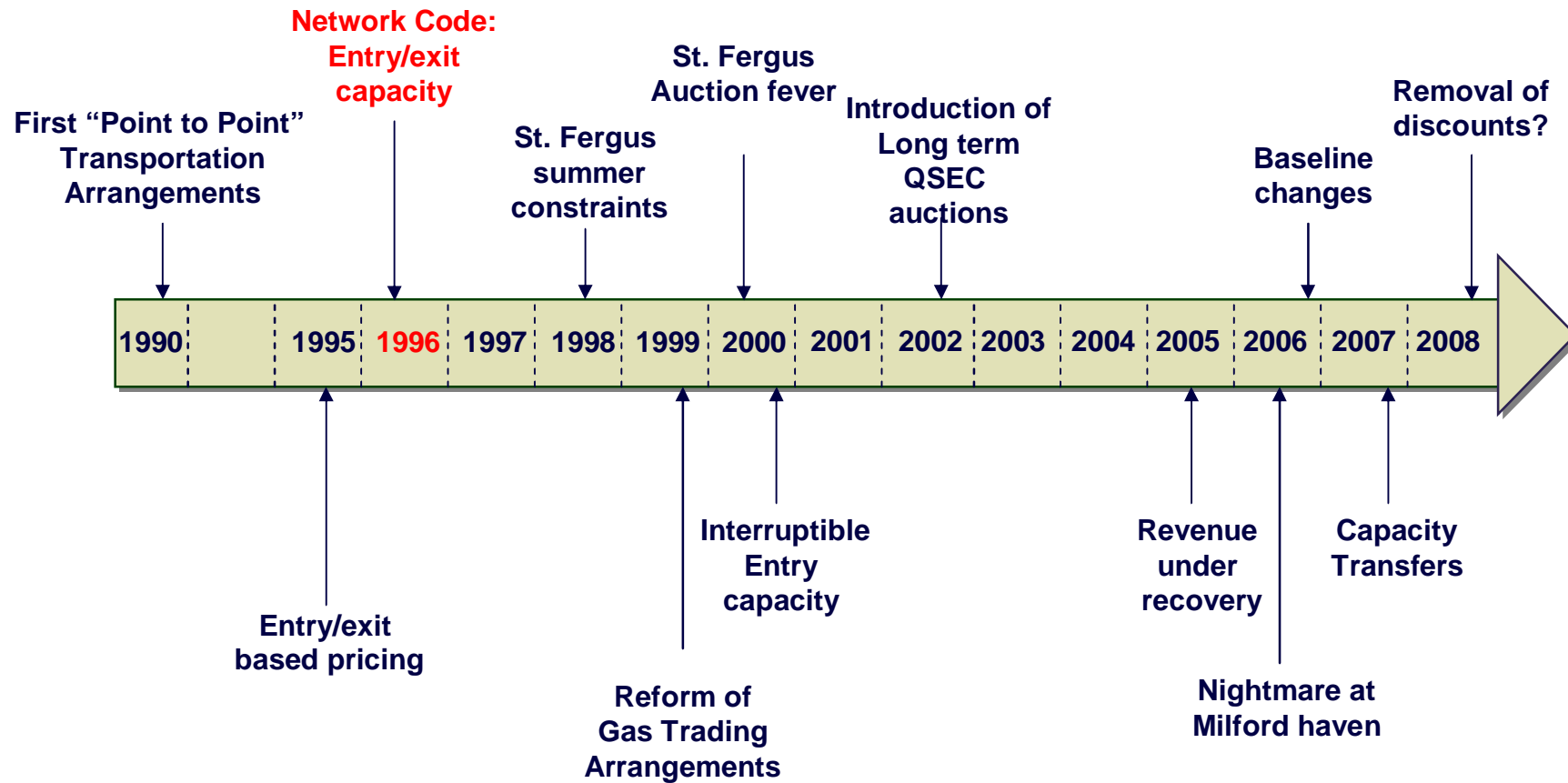
Vienna, 6th November 2007

Agenda



- UK entry capacity experience
 - From no limit to auctions & transfers
- Is it relevant elsewhere?
- Calculating capacity levels
 - Are transparency and consistency achievable?
- Implications for investment & the market

Development of UK entry capacity

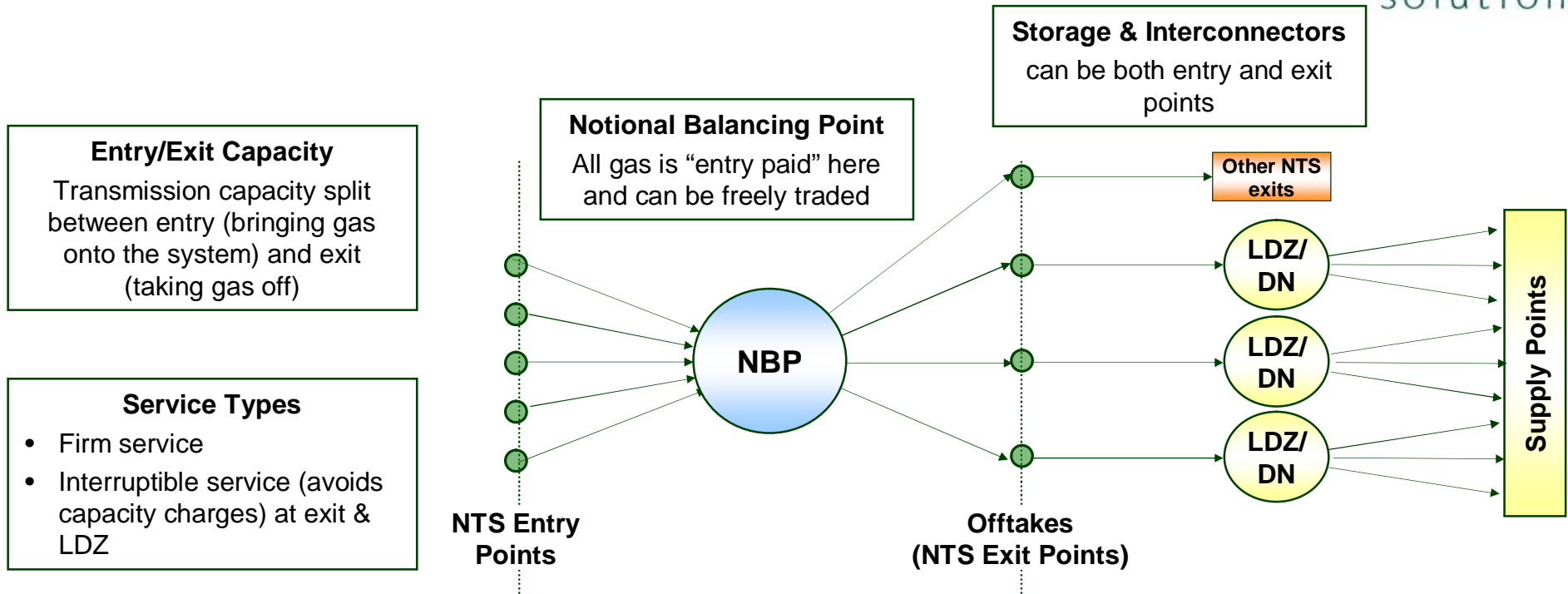


Network Code



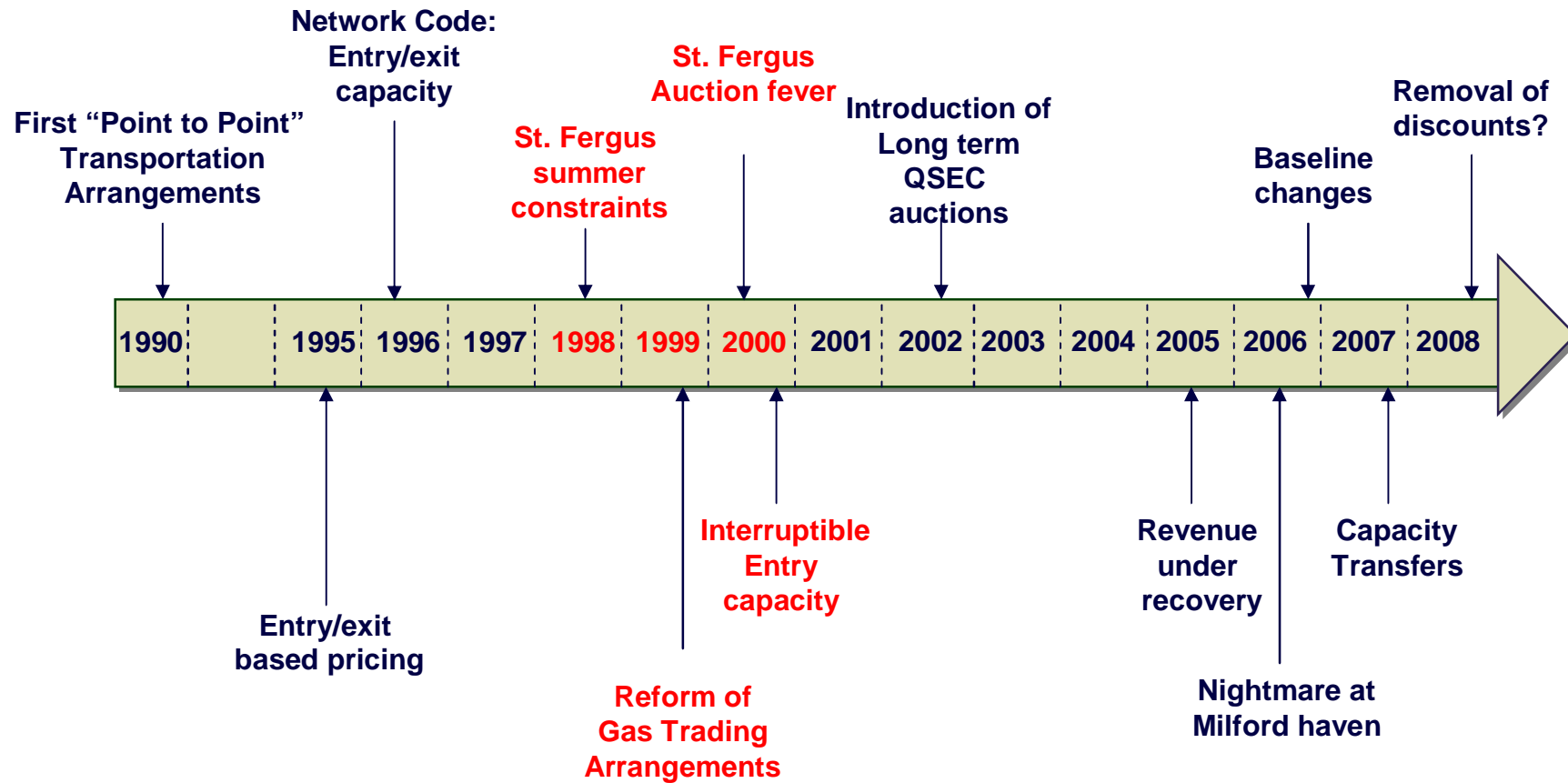
- Point to point capacity replaced by entry/exit
 - Independent capacity products
 - Broke the notional path link
 - ➔ Facilitated concept of the NBP
- 12 month capacity blocks
 - No daily or one month sales
 - No seasonal profiling
 - Firm capacity, no interruptible at entry
- Unlimited sale “on demand”
 - No rationing of entry capacity purchases
 - Constraints managed via system balancing rules

Network code capacity model



Transportation Tariffs	Entry Capacity Charges	NTS Commodity Charges	NTS Exit Capacity Charges	LDZ Capacity Charges LDZ Commodity Charges Customer Charges
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Development of UK entry capacity



St. Fergus constraints

- Large summer maintenance programme
 - Unable to provide peak capacity all year round anyway
- St. Fergus inputs remained very high
 - Some opportunistic nominations
- ➔ Surplus gas “bought off” system
- Cost recovery “smeared” across all terminals, not targeted
- Solved by “scale-back” modification
 - Pro rata to nominations

RGTA modifications



- Regulator unhappy with “scale back”
 - Not a market value based approach
- Desire for rationing of initial allocation
 - ➔ Limits placed on amount of capacity for sale
 - To be sold via auctions
 - Reserve prices based on LRMCs
- ➔ Develop a “financially firm” product
 - Capacity buy back if constraints emerge
 - New incentive schemes for TSO
- No primary interruptible products
 - Leave sophistication to secondary markets

St. Fergus Auction fever



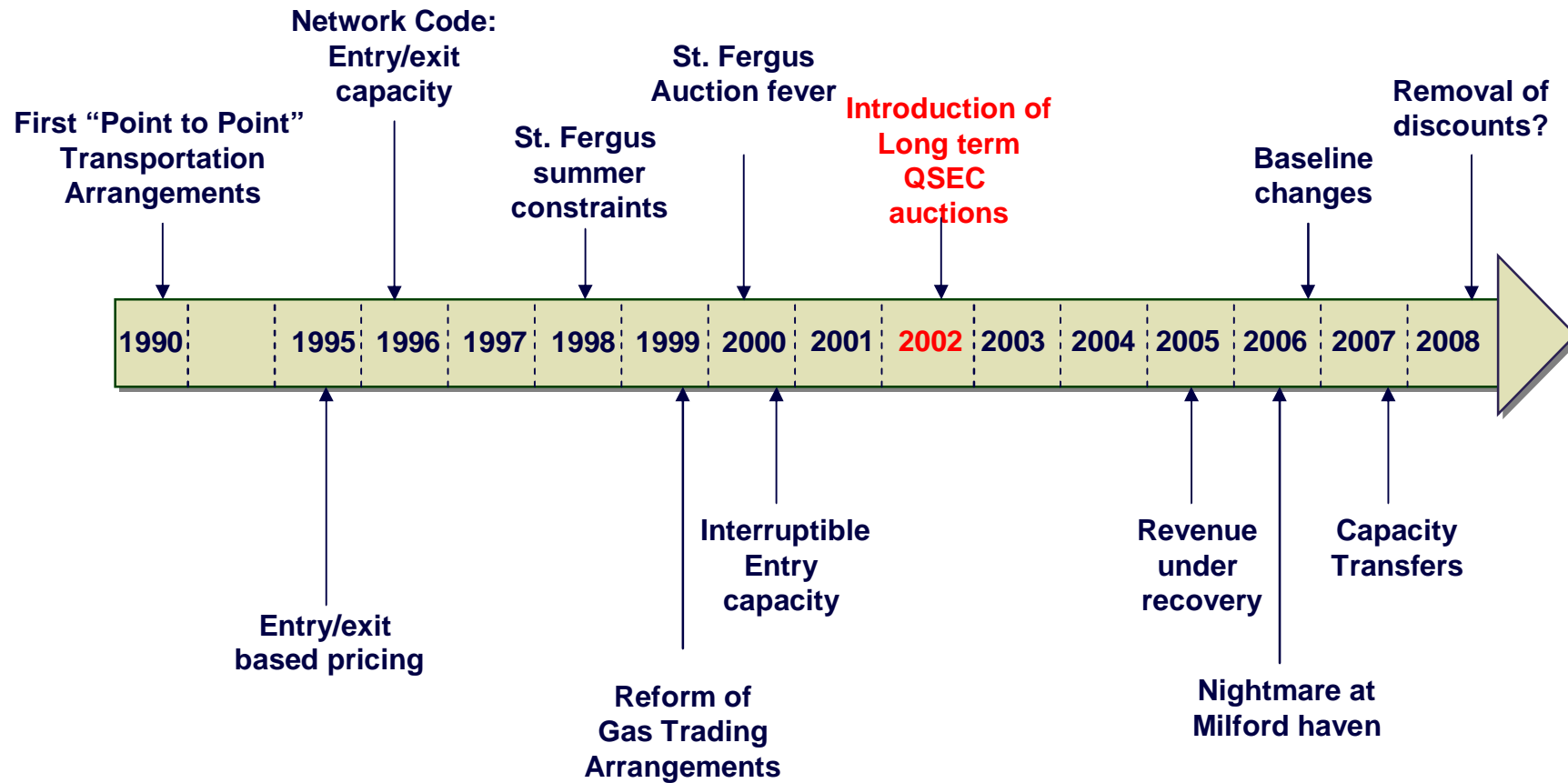
- Capacity auctions worked smoothly at most terminals
- But at St. Fergus shippers could not risk being shut-out
 - Associated gas linked with oil production
- ➔ Bidding war in 2000 auctions
- ➔ Massive over-recovery of revenues

Interruptible entry capacity



- Regulatory dilemma in face of St. Fergus
 - Driving up the forward curve
 - Uproar amongst shippers & consumers
- Need to persuade shippers not to “panic”
- ➔ Offer new interruptible capacity product
- Reassure market that all possible physical capacity will be made available
- Ex-post justification as a requirement for transporter to hold a “clearing auction”

Development of UK entry capacity



Long term QSEC auctions (1)



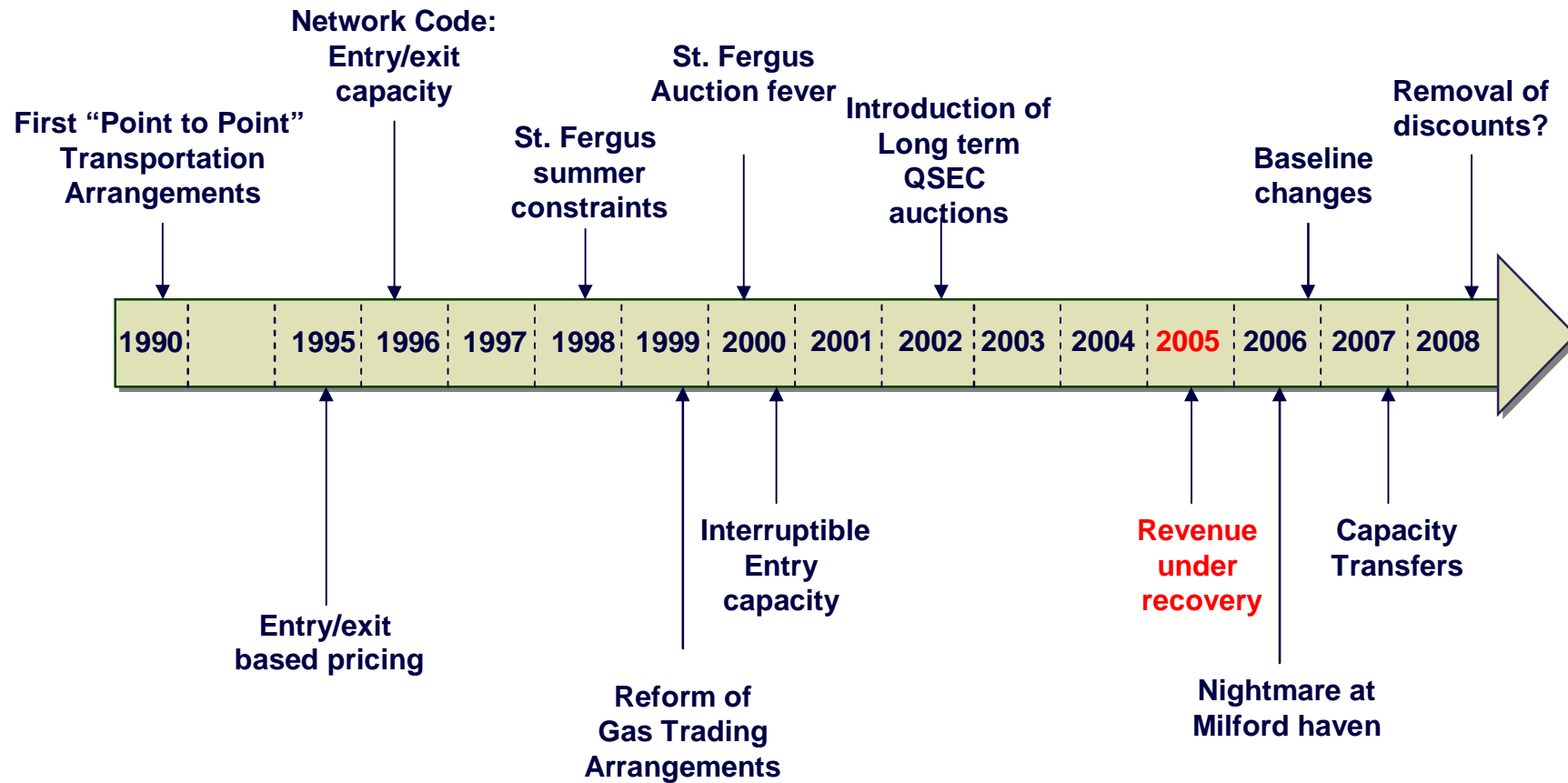
- Origin of the “user commitment” model
 - Designed to link NTS investment to what shippers will pay for, not what they say they want
- Offering quarterly entry capacity
 - Up to 15 years duration
 - Minimum 2 year lead-time
 - Prices based on cost assumptions
 - Expressed as incremental price steps
 - Effectively a tender for volume rather than a price auction

Long term QSEC auctions (2)



- But, TSO retained licence obligation to invest to meet peak day level
 - Auction signal only part of TSO's planning
- Most shippers content to book capacity at (much) shorter notice
 - Confident that capacity will still be there
 - And (as we will see) cheaper to purchase!
- Long term booking mostly only relevant for new terminal requirements such as LNG
 - Need to pass economic investment hurdle

Development of UK entry capacity



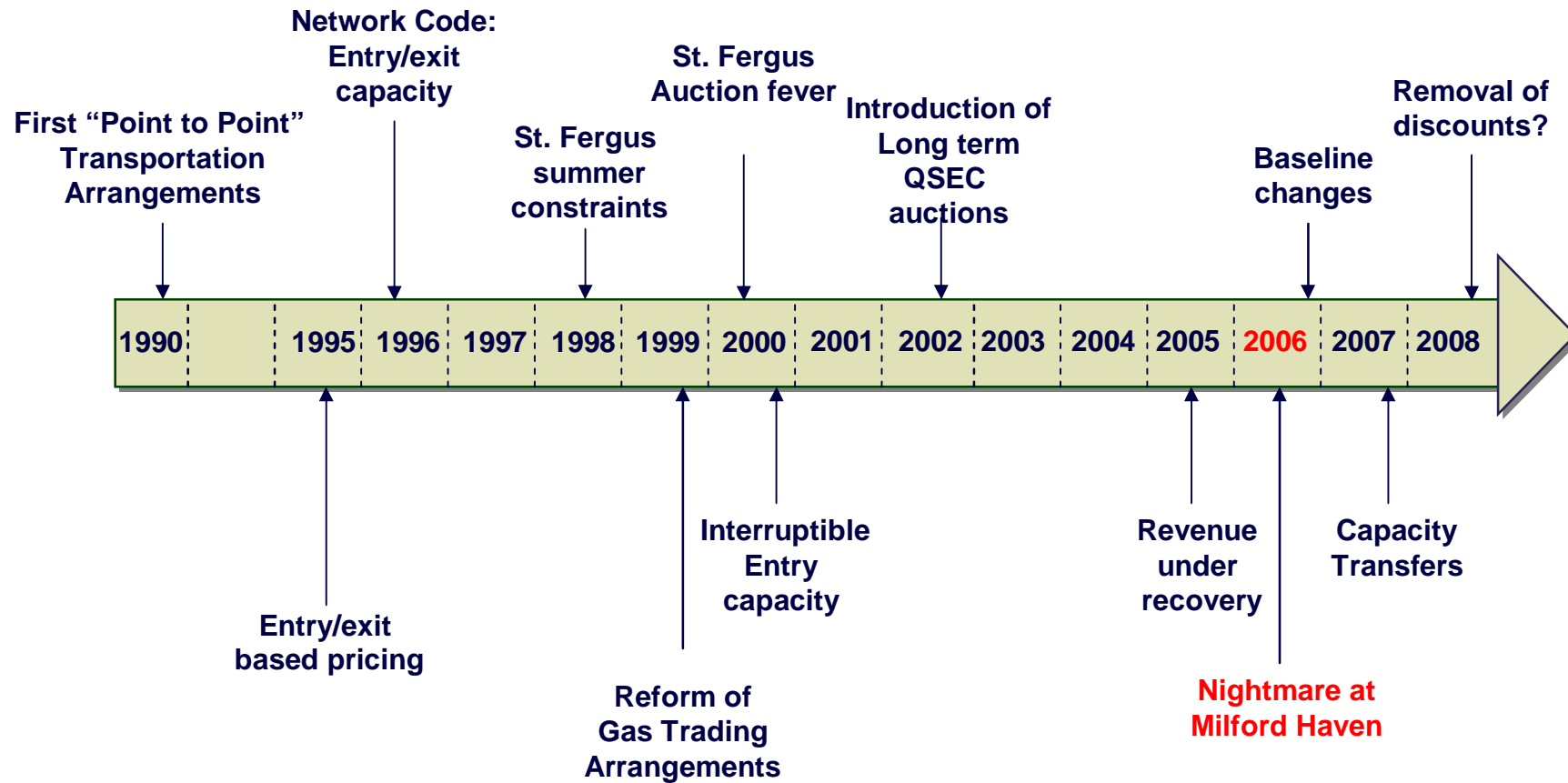
Revenue under recovery (1)

- Availability of shorter term products
 - Discounts for monthly firm capacity
 - Zero reserve price for “interruptible”
 - Obligated TSO “baseline” capacity levels
 - Capacity set aside for monthly auctions
- ➔ Shippers increasingly buying short term and cheaply, with confidence!
- ➔ Creating need for cost recovery mechanism and undermining investment signals

Revenue under recovery (2)

- Revenue recovered via a new system throughput charge at entry
 - Effectively commoditising the regime
 - Deterrent to landing “optional” gas in UK?
 - Also concerns about St. Fergus income
 - Spare capacity becoming apparent
 - LRMC based reserve prices would fall anyway
- ➔ Subsequent development of new pricing model
- Designed to keep St. Fergus tariffs up

Development of UK entry capacity

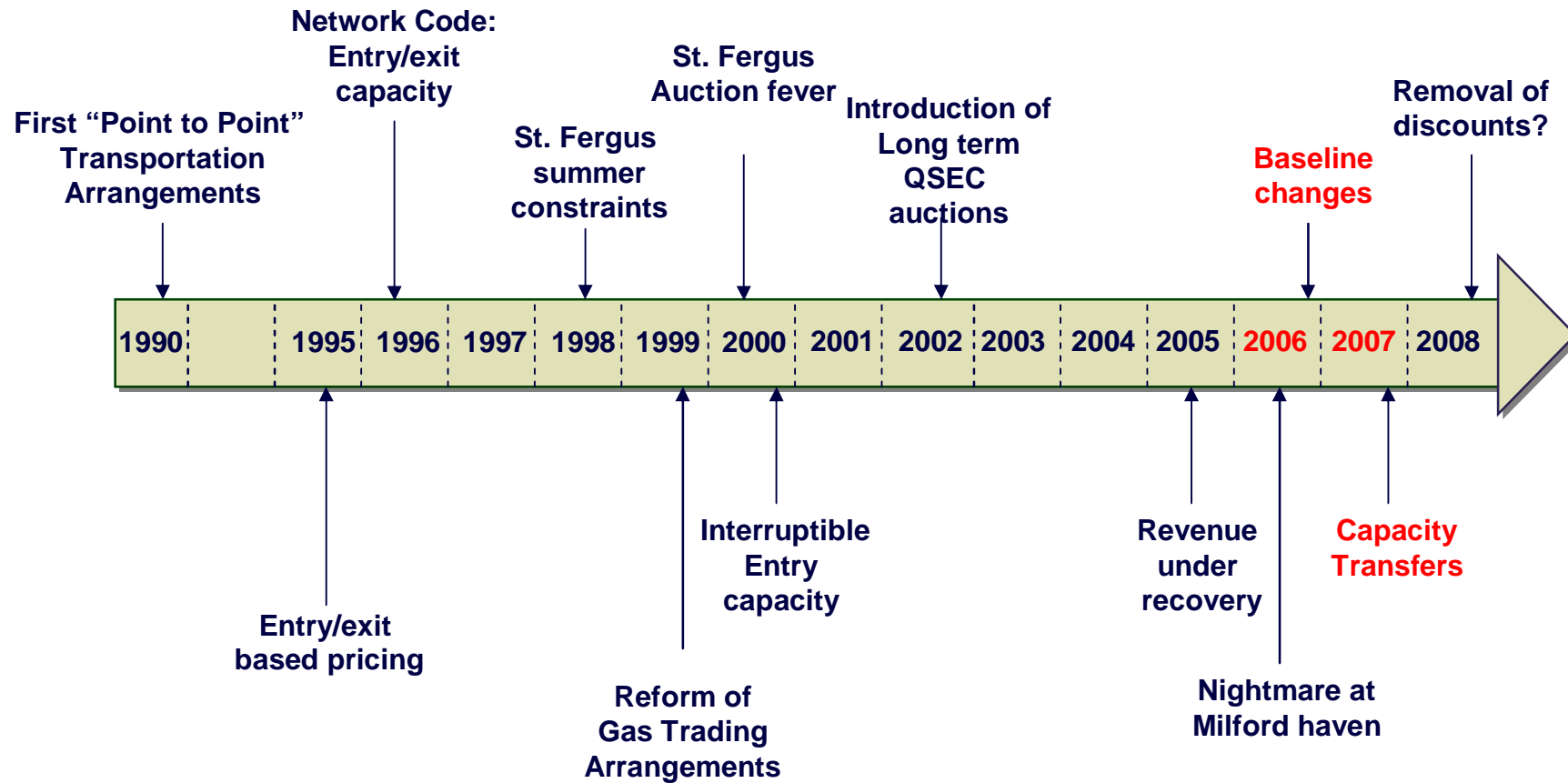


Nightmare at Milford Haven



- New LNG terminals secured NTS entry capacity from 2007/8
- National Grid experienced serious project delays
 - Potential for enormous capacity buyback
- ➔ Special buy-back package for Milford Haven
- ➔ Change to rules in new price control
 - Limits on exposure for “new investment” risk
 - But what about a major operational problem?
- Problem has since lessened anyway
 - Delays to terminal start dates
 - Reduction in wholesale prices

Development of UK entry capacity



Baseline changes



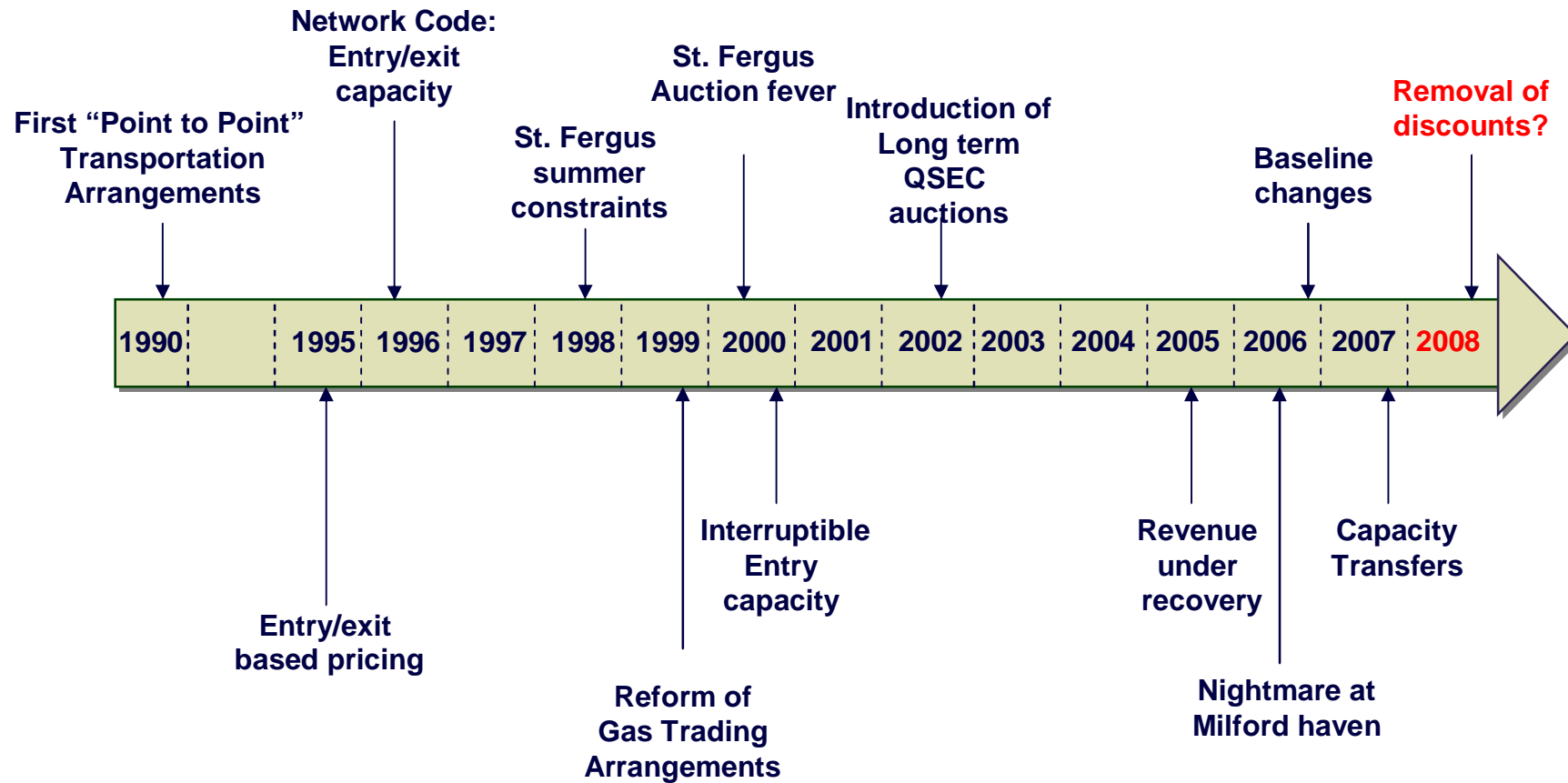
- Anticipation of new 2007 price control
- Ofgem adjusted TSO committed baseline levels for March 2007
- Teesside level dropped considerably
 - St. Fergus remained surprisingly high
- New Teesside shipper raised judicial review proceedings against Ofgem
 - Ofgem now reconsulting on baselines
 - Problem also triggered push for transfers

Capacity transfers



- Motivation
 - Easington capacity shortage for coming winter
 - Threat of judicial review over Teesside baseline
- Solution
 - Require National Grid to develop capacity transfers
 - Allow for uncontracted baseline capacity to be switched between terminals to the highest bidder
 - Requires “exchange rates” between terminals
 - Subject to TSO analysis (and risk aversion)
- Winter 2007/8 stop-gap auctions now completed
 - “Enduring” regime to follow next year

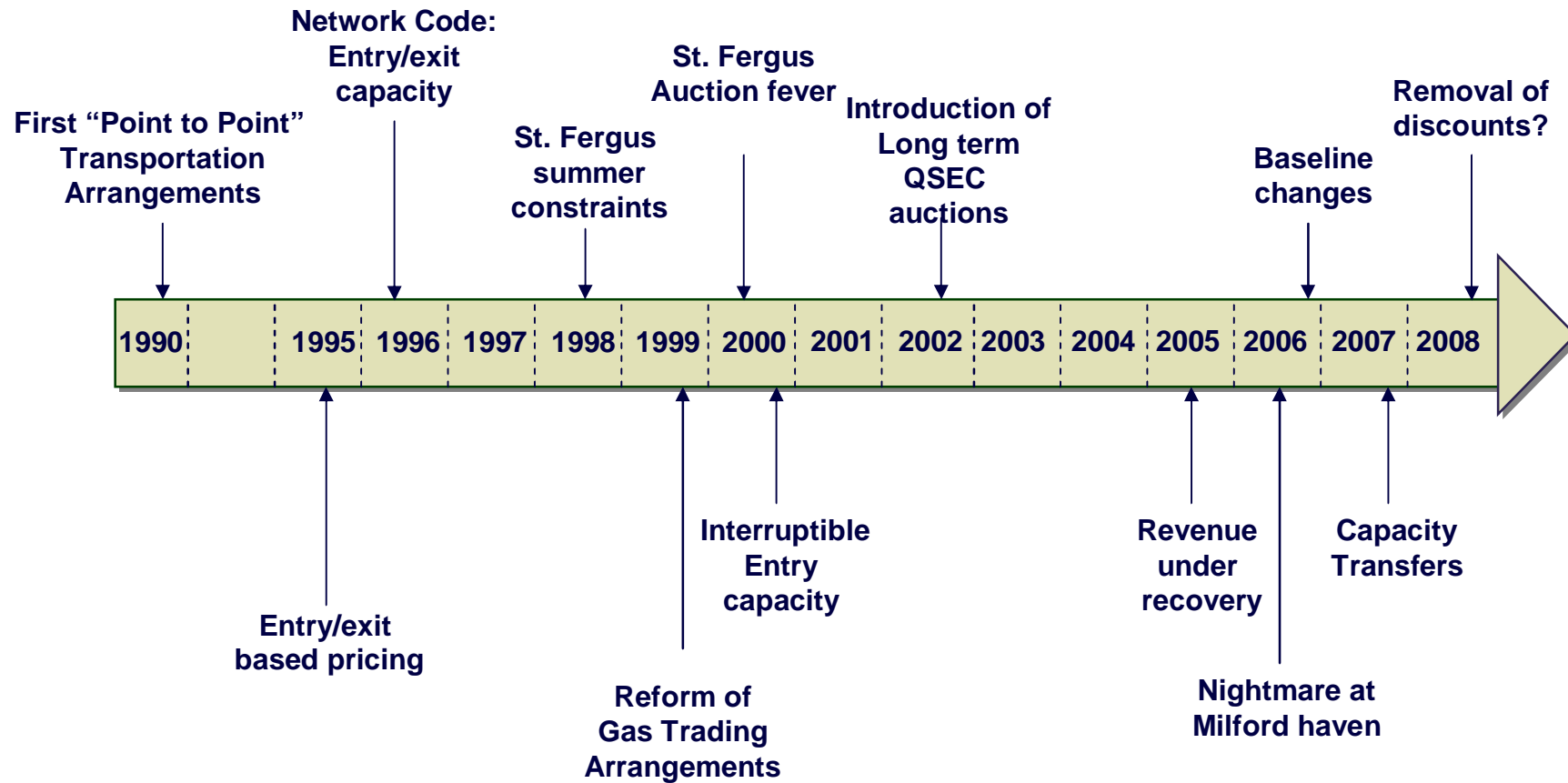
Development of UK entry capacity



Removal of discounts?

- Why continue to offer discounts for short term sales?
- Why offer interruptible products which aren't likely to be interrupted?
- ➔ Limit revenue under recovery
- ➔ Encourage participation in the long term sales process
- ➔ Encourage secondary capacity market
- Possible implementation now deferred
 - Revenue recovery problems have abated recently
 - To be considered further for October 2008

Development of UK entry capacity



Reflections



- **Absence of coherent policy & strategy?**
 - Tendency towards tactical interventions
 - Continued inconsistencies with exit regime
 - And what about the upstream regime?!
- **Or lack of political will to commit?**
 - Long term capacity rights require stability of regulatory and commercial regime
 - And clarity of investment planning criteria
- **Focus on “fine tuning” transmission investment**
 - Only a small part of the value chain in terms of cost
 - But vital to wholesale market functioning

Transparency concerns



- Calculation of capacity availability is difficult enough in best of circumstances
 - Especially in more complex non-linear networks
- Problem is compounded by:
 - Financial incentives on TSO regarding level of existing & new capacity made available
 - Exposure of TSO to capacity buy back risk
 - Need to establish exchange rates for capacity transfer between entry points
- Creates fertile ground for misalignment between the TSO and system users

Investment decisions



- Should new investment be based exclusively on shipper commitments?
 - Contract carriage a.k.a “user commitment” model rather than common carriage
- Can this be reconciled with TSO being required to offer short term capacity?
 - Surely not compatible with discounted short term products

Pros & cons of user commitment model



Pros

- Avoids “centralised planning” by TSO or regulator
- Reduces risk of asset stranding
- May reduce “cross subsidies”
- Works better for “annual gaps”

Cons

- Increases shipper risk & hampers competition?
- Complexity of rules
- Not well suited to entry/exit model?
- Not so good for meeting “peak gaps”?

Preconditions for user commitment model



- **Stable & predictable regulatory regime**
 - Fair (but not excessive) revenue recovery for TSO
 - Avoid meddling & shocks to property rights of users
 - Well defined baseline capacity availability
- **Removal of impediments to long term booking**
 - E.g. discounted short term products
- **Suitable capacity structure**
 - Is entry/exit better suited to common carriage?
- **Solution for meeting the “peak gap”**
 - Especially in absence of adequate storage buffer

Common carriage model



- TSO invests on basis of anticipated requirements
 - Transparent industry wide planning process
 - Regulatory scrutiny at time (no benefit of hindsight)
- Onus is on ensuring adequacy of infrastructure
 - Clear TSO investment criteria and revenue recovery
 - Flexibility of network benefits supply competition
- No need for long term user commitments
 - TSO can offer shorter term products
 - Evergreen concept can address any user need for guarantees
- Initial allocation “on demand” can work ok
 - Provided TSO has made adequate investment
 - Probably need to address seasonality
 - Scale back can deal with (occasional) constraints

In conclusion



- UK entry capacity regime has been subject to various (ongoing) changes
- Interventions have sometimes been more tactical than strategic
- The lesson for others is clear:
 - Choose the fundamental regime carefully
 - Well managed evolution is fine, but:
 - Avoid frequent interventions that undermine TSO and user confidence

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