

Market Challenges: can GB learn from events in New England

**British Institute of Energy
Economics**

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THREE CORE MESSAGES

1. The ability for GB to trust in and continue to use markets for gas and electricity could rest in whether we learn lessons from volte-face in NE.
2. For now Ofgem the – the GB regulator- is instrumental in giving markets the greatest chance of delivering:
 - early recognition of monies for new networks to line up new generation sources. (“providing a route to market”)
 - monitoring players behaviour (gas probe 2005, retail probe 2008)
 - alerting market distortions.
3. We can improve further by importing some of the better ideas from America.

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COUSINS BECOME DISTANT COUSINS

THE MARKETS: KEY FEATURES

| | <u>New England</u> | <u>GB</u> |
|-------------------------------|---|--|
| Retail Competition Introduced | 1998 ... 10%-15% cuts then flat rates under-pin "big bang". | 1990-2002 ... gradual opening of rates to market float. |
| Results | <ul style="list-style-type: none"> • Virtually no switching at retail. • No new generation ahead of 2009 reserve margin squeeze. • Little new retail entry. • No development of ESCO's. | <ul style="list-style-type: none"> • 50% switching. • Limited generation from Langage/Marchwood but extensive CCGT plans in next 8 years. |
| Features | <ul style="list-style-type: none"> • Very volatile prices led to cap introduced (2002)...too low • Capacity credit market (FCM) introduced (2008) ... too low. • Full unbundling of ISO | <ul style="list-style-type: none"> • Market price Floats: £20 Mwh to £100 Mwh • Electricity wholesale market tested in 2003 – Margin bounce. (16% - 22%) • Gas wholesale market tested in winter 2006 – bcm bounce. (100bcm to 150bcm) • SO controlled (arms length) by TO |

NE MODEL STALLS GENERATION, STYMIES CHOICE

SIMILAR CHARACTERISTICS

| <u>New England</u> | <u>GB</u> |
|--|---|
| Nuclear and coal new build effectively off agenda. | New nuclear a real possibility. Kingsnorth the test case on coal (needing appropriate CCS). |
| Supply margins in decline: 2009 danger period...29 GW versus 31 GW capacity | •2015/20 appears to be a “pinch point”... 8 GW coal plus nuclear closures. |
| Big investment needed in Renewables. | To meet targets – huge renewable investment needed. (2.5 GW to 33 GW by 2020) |
| Massive locational constraints on transmission (N-S). | Significant locational constraints on transmission (N-S). |
| Very large state environmental mandates. | EU environmental targets are ambitious. |
| Prices through the roof. 2002-08: Gas +252%, coal +209%, Oil +369%. Retail in MA: +109 % fuel, +24% network +19% CPI | Prices through the roof: 20p therm to 100p therm etc. |

TIGHTNESS IN SUPPLY MARGIN A KEY DIFFERENCE

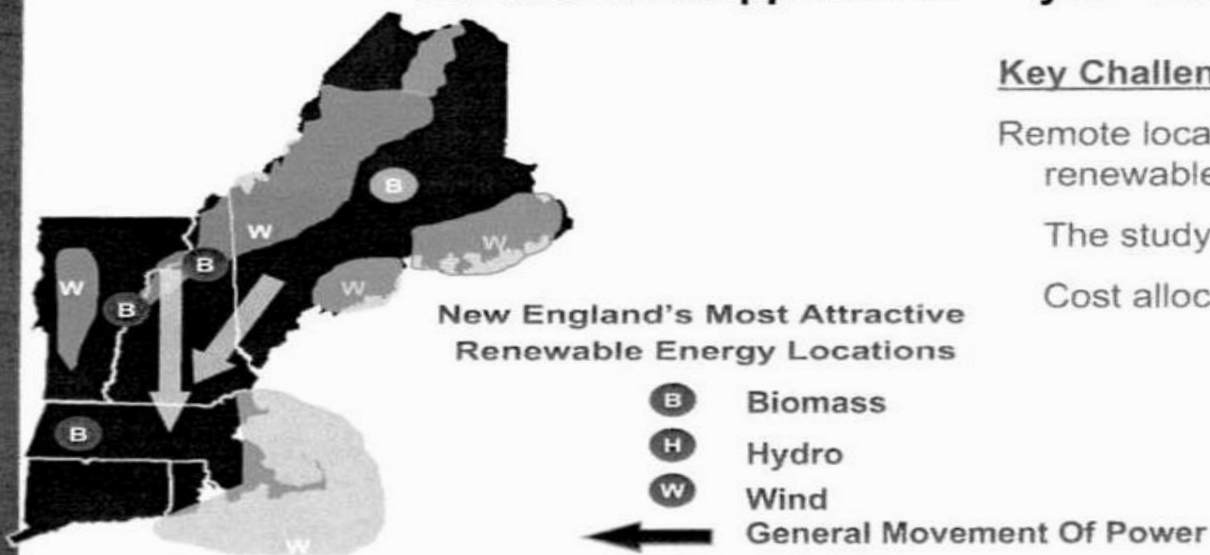
SIMILAR GEOGRAPHICAL CHALLENGES

New England ISO New Transmission Approaches

To Enable New England's Most Attractive Renewable Resources New Transmission Approaches May Be Needed

Key Challenges:

- Remote locations of the highest potential renewable generation
- The study queue
- Cost allocation for transmission

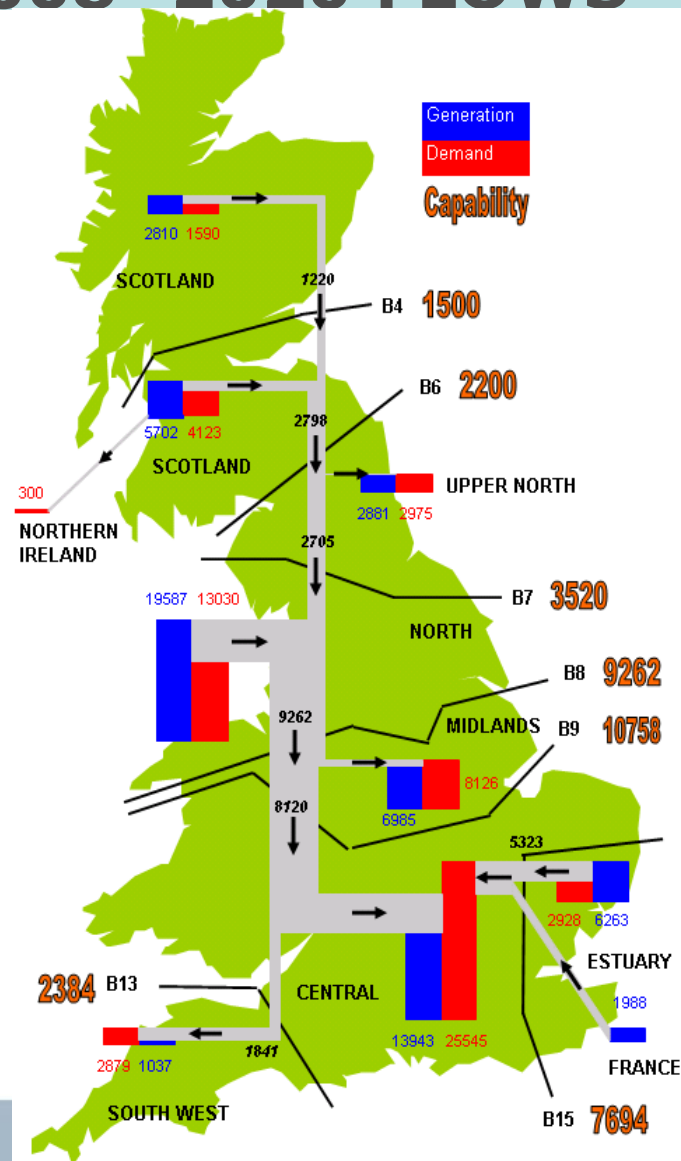


GETTING RENEWABLES FROM SCOTLAND

Option1- Offshore HVDC



2008 -2020 FLOWS



SIMILAR TRANSMISSION CHALLENGES?

NEW ENGLAND

- Look to **FERC** to change “First Come First Serve” rule.
- **Maine has fallen out with ISO-NE** – who pays for the extra T? Maine needs connections to main grid.
- **Huge investment needed** – TO’s estimate \$2billion immediately.
- **Congestion** a massive problem. North-South route. 5GW identified from Maine by 2018.
- **Massive planning issues.** **BANANA** (Build Absolutely Nothing Anywhere Near Anyone!) **Nope** (Not on plant earth ever)
- Develop the concept of “scarcity pricing”.

GB

- Ofgem revisits TAR (Transmission Access Review) – 4 quick wins.
- Scotland presses preferred solution.
- £3bn for RETS2? £560m for RETS1 in 2004. (4 specified routes)
- Congestion at English - Scottish border.
- Planning is hindering key Beaulieu Denny project.

**REGULATORS CAN HELP BUT POLITICAL WILL
CRITICAL**

FERC and NE's RESPONSES

- Public funding of "T" lines – Neptune 600MW.
- Use public bodies to fund renewable only "T" lines/cables? (dedicated lines).
- Maine even considering leaving market ... allow regional variations in processes (and rates?)
- Create a NREZ. (National Renewable Energy Zone)
- Expedite planning on special routes: FERC.
- Split analysis of "T" into Reliability routes (driven by load) and economic routes.
- Superior rate awards: FERC and state level.

CAN UK LEARN FROM US/NE INITIATIVES?

SIMILAR ENVIRONMENTAL CHALLENGES

NEW ENGLAND

1. RGGI starts in organisational chaos ahead of launch in late 2008.
2. PA undermining it as won't enter – causing leakage ... regional problem as well.
3. Want to use allocations/100% auction for poor income households.
4. RPS (Renewable Portfolio Strategy) of each state is a subsidy – a feature of which is the economic benefits it brings to the State.

GB

Familiar? EUETS Phase 1.

Familiar? France and Germany originally.

Familiar? Ofgem's idea on using free EU ETS 'Handout'

CAN NE LEARN FROM EU/GB TEETHING ISSUES?

DIFFERENT RESPONSES

| <u>New England</u> | <u>GB</u> |
|--|--|
| Capacity credits (CC) introduced... complex and priced low | CC a "false step" ...and so far resisted |
| Re-regulate generation: "cost of service"... competition at award stage. | No re-regulation but massive subsidies for renewables and environmental projects |
| DNO's allowed back into generation | Incentives for DG in DNO price controls |
| Hand powers to centralised control – ISO | EU wants unbundling |
| Maine's regulators made responsible for environmental targets | Pressure on Ofgem's duties and roles. |
| De-couple kwh from revenue... now being done | Done at DNO/GDN level |
| L/T bi-lateral contracts "will be tolerated" | L/T contracts to be competitive |
| Regulators are intervening much more (esp in CT) | Ofgem using probe powers to investigate behaviour of participants. |

MUCH MORE DIRECT INTERVENTION IN NE

IS THE GAME UP FOR MARKETS IN NEW ENGLAND?

"It is fair to say that in the States that did restructure and liberalise, we are on the defensive."

John Shelk, President EPSA – September 2007

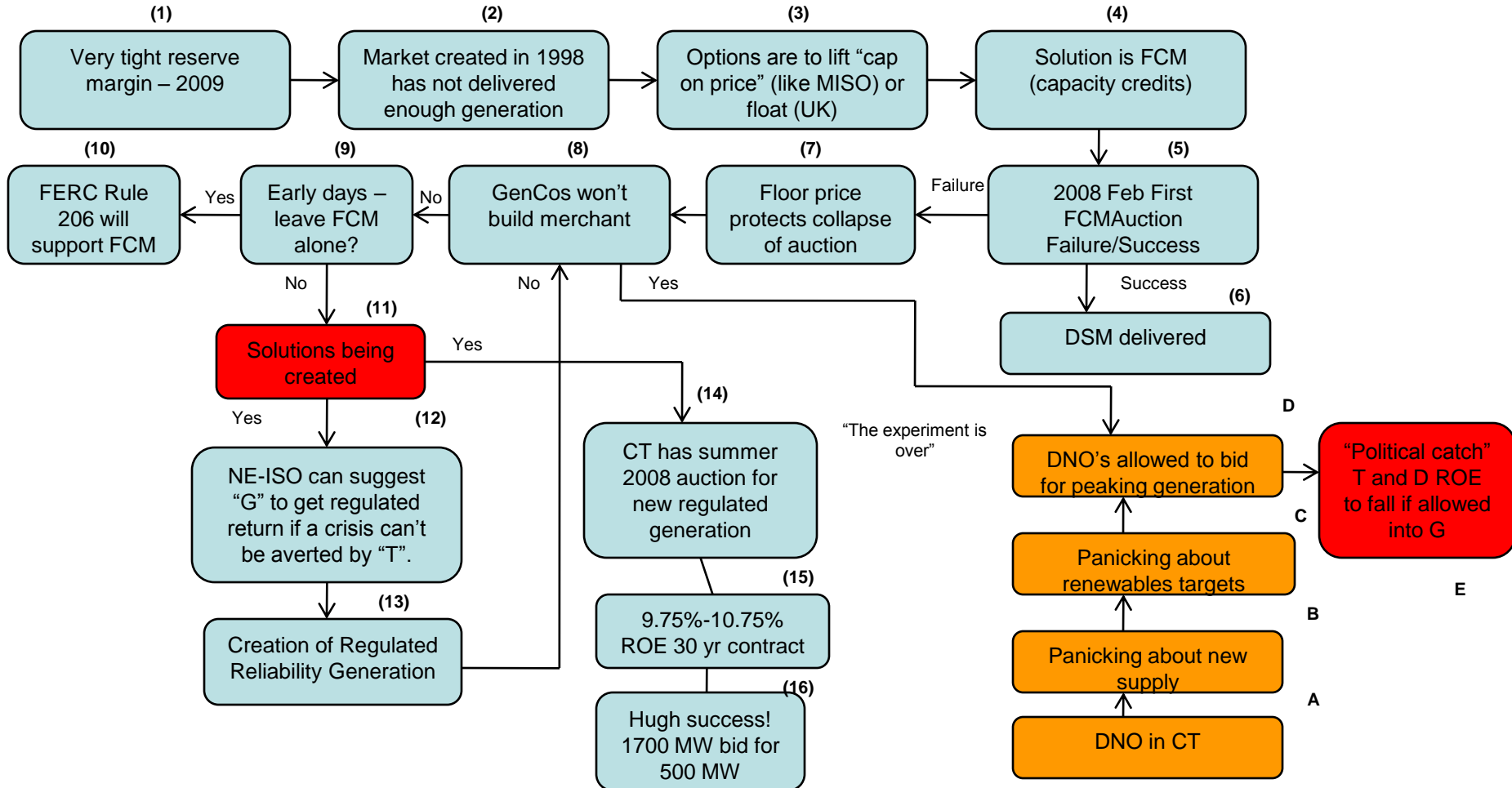
"In 2007 the "competition works" message no longer resonated with CT legislations who had constituents dealing with escalating energy prices".

"There is a dissatisfaction with market based generation despite vastly improved efficiency and affordability"

NRG – May 2008

"THE EXPERIMENT OF THE MARKET IS OVER"

ANATOMY OF A CRISIS – A MARKETING UNRAVELLING – NEW ENGLAND MARKET (NEPOOL)



KEY THEMES FROM NE HIATUS

- (1) Regulated generation – to the rescue? (called “The Hybrid Generation Model”)
- (2) ISO becomes absolutely critical player in all decisions – generation/DSM/Networks.
- (3) DNO’s start to work back into generation: peaking units first but now in CT also base-load.
- (4) Capacity credit struggling to survive – hated by public, Gencos and politicians.
- (5) DSM a surprise feature of capacity markets but how fragile is it? What reliability can be placed on DSM?
- (6) NE-Pool under intense pressure as a market: not allowed nuclear or coal, RGGI allowances introduced and FCM a poor start.

CAPACITY CREDITS: LOATHED OR LOVED?

LOATHED

- Auction price at \$4.50/kw floor won't create new build (FCM should float).
- Public fear that \$4.50/kw charge and no new build – so why bother – also on bills.
- GenCos hate it – complex, they get blame.
- Seen as a safety net payment and not new build trigger.
- Being undermined by CT moves and NE-ISO powers.
- Failed to engage consumer groups only (1/61 responses from consumer group and with rising prices has created resentment).
- No CCGT until 2013 on current auction – but shortage in 2009.
- DCM get “the cream”.

LOVED

- FERC will support it as it is a market instrument but it has to support it as the burden falls on it to show FCM's fail to deliver against “scarcity”!
- Drew out DSM response (1200 MW after FCM), and flushed out some new gen projects.
- 6000 MW wanted for CC. 17000 MW expressed an interest – price collapse.
- DSM for significant fraction of load requirements.

A SAFETY NET OR PROMOTER OF CAPACITY?

HAS NEPOOL STUMBLLED UPON THE DSM SOLUTION?

YES

- Hoping to tap 13-16% of total demand by 2013!

NO

- USA consumption is astronomical per household – danger to compare.
- DSM the obvious play in first auction.
- Worry about its fragility and permanence: how to integrate into a market?

IS DSM AS GOOD AS STEEL IN GROUND?

5 MESSAGES FOR GB MARKET?

1. Interfere with markets at your peril – but if you must then know where you are going.
2. Markets won't deliver generation if too many political barriers erected
3. Develop transmission networks as part of solution to the demand pressures and generation mix **but** the response must be early enough
4. Review the fullest extent of the reach of realistic DSM
5. Having an ISO might have advantages if the SO becomes more involved in generation decisions.

DO WE IGNORE SUCH MESSAGES AT OUR PERIL?