ofgem Making a positive difference for energy consumers

FTI CONSULTING

Future Trading Arrangements

Principles and Issues Working Group

31/07/13

Structure

- Part 1: Designing the electricity market in 2001 – guiding principles and key features of the market design

- Part 2: How the market has evolved since 2001, and likely future evolution
  - Experience of the market design
  - Changes in market fundamentals
  - Changes in policy landscape

- Part 3: What kind of changes are/will be required in light of developments since 2001?

Purpose

- Purpose of these slides is to promote a discussion of issues and principles. They are not a statement of policy or intent

- Purpose of this WG, and the FTA project, is forward-looking – look at how TA may need to adapt in light of current/ prospective changes

- For avoidance of doubt, FTA is not about:
  - Debating NETA
  - Debating EMR
  - Re-running BSC Mods

PART 1: DESIGNING THE ELECTRICITY MARKET IN 2001

ofgem Making a positive difference for energy consumers

Founding high-level principles of NETA…

- Non-discrimination
- Efficient dispatch
- Market signals drive long-run investment
- Competition where possible
- Minimum regulatory oversight
- Risks allocated to those best placed to deal with them
- 'Polluter-pays' principle

FTI CONSULTING™

ofgem Making a positive difference for energy consumers

...which were based on Ofgem's statutory duties and issues in the market at the time

Ofgem's principal objective relating to electricity in 2001

- *"to protect the interests of consumers in relation to electricity conveyed by distribution systems, wherever appropriate by promoting effective competition between persons engaged in or in commercial activities connected with the generation, transmission, distribution or supply of electricity."*
- No explicit reference to Europe

Issues in the market at the time

- Market power
- Manipulation of the Pool
- Dash for gas
- High liquidity in gas trading

ofgem Making a positive difference for energy consumers

The market features reflect NETA's high-level principles

- Non-discrimination
- Competition where possible
- Efficient dispatch
- Minimum regulatory oversight
- 'Polluter-pays' principle
- Market signals drive long-run investment
- Risks allocated to those best placed to deal with them

- Energy-only market
- Single price zone with locational signals via transmission charges
- Contractual freedom with no mandatory exchange
- Decentralised dispatch with a residual role for SO in energy balancing
- Equal treatment of demand-side
- Cash-out reflect full costs of energy actions
- Market participants incentivised to balance by exposure to imbalance risk
- SO deals with system issues outside of the market

FTI CONSULTING™

ofgem Making a positive difference for energy consumers

Selected lessons learned from NETA

NETA succeeded in most respects	Investment has occurred in a decentralised energy-only market	The lights have stayed on
Limited involvement of demand side	Wholesale market is not particularly liquid	Wholesale market price not completely transparent due to vertical integration
Imbalance exposure leads to generators routinely 'spilling'	SO incentive scheme has proved volatile and complex	Many changes to the rules

Are there any other important lessons that can be drawn?

FTI CONSULTING™

PART 2: HOW THE MARKET HAS EVOLVED SINCE 2001, AND LIKELY FUTURE EVOLUTION

ofgem Making a positive difference for energy consumers

What has changed since 2001?

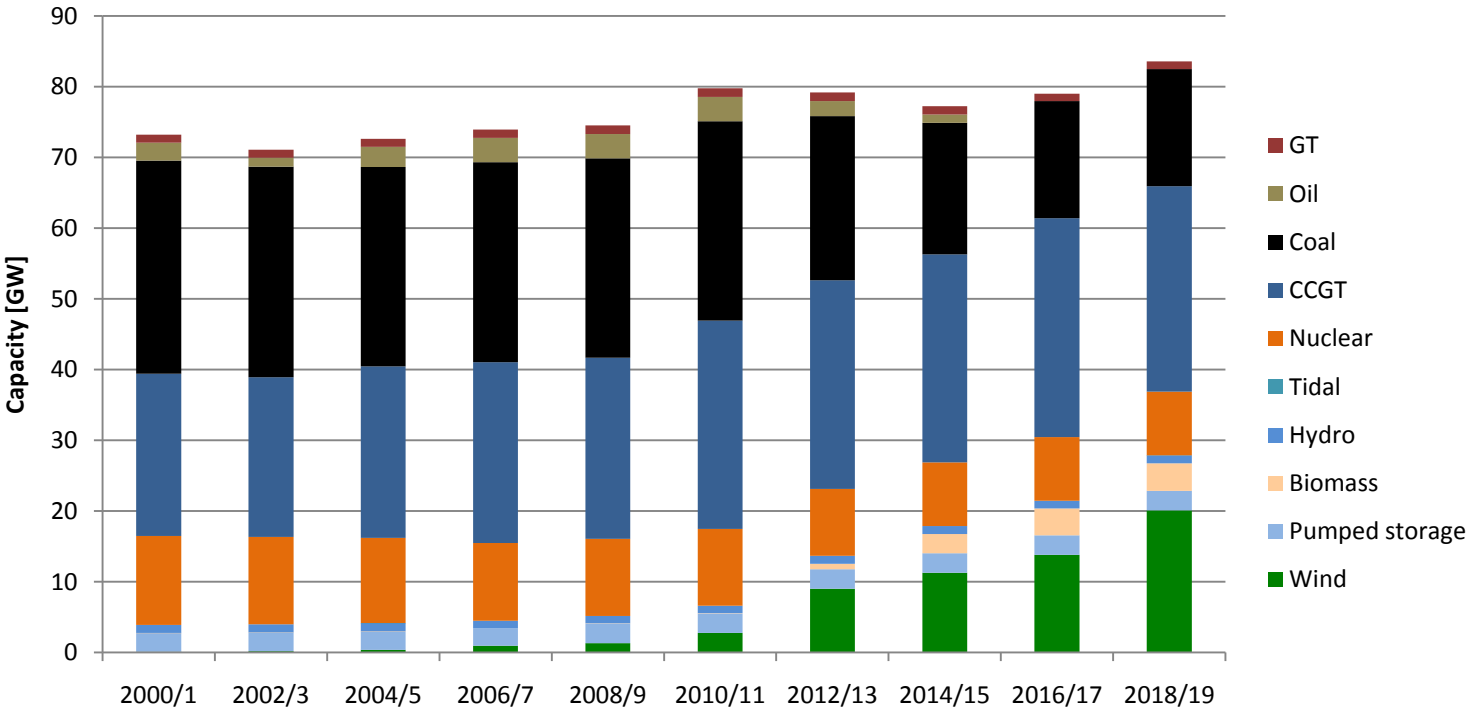
Statutory duties have evolved over time	■ *"The Authority's principal objective is to protect the interests of **existing and future consumers** in relation to…electricity conveyed by distribution or transmission systems. **The interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply of gas and electricity to them**"* ■ *"The Authority must carry out its functions in the manner that it considers is best calculated to **implement or ensure compliance with any decision of the Agency [for the Cooperation of Energy Regulators] or the European Commission under the Third Package**"*
Market fundamentals	■ Increasing share of intermittent generation ■ Ageing plant, forced closures and capacity margins tightening ■ E&W merged with Scotland in 2005 (BETTA) ■ Greater degree of interconnection ■ Higher energy prices
External factors	■ Third Package and EU Target Model ■ 2020 Renewables Target, EMR (CfDs/FiTs; CM; new nuclear)

FTI CONSULTING™

Do you agree that these are the key changes?

ofgem Making a positive difference for energy consumers

Intermittent renewables are playing an increasing role in meeting GB demand

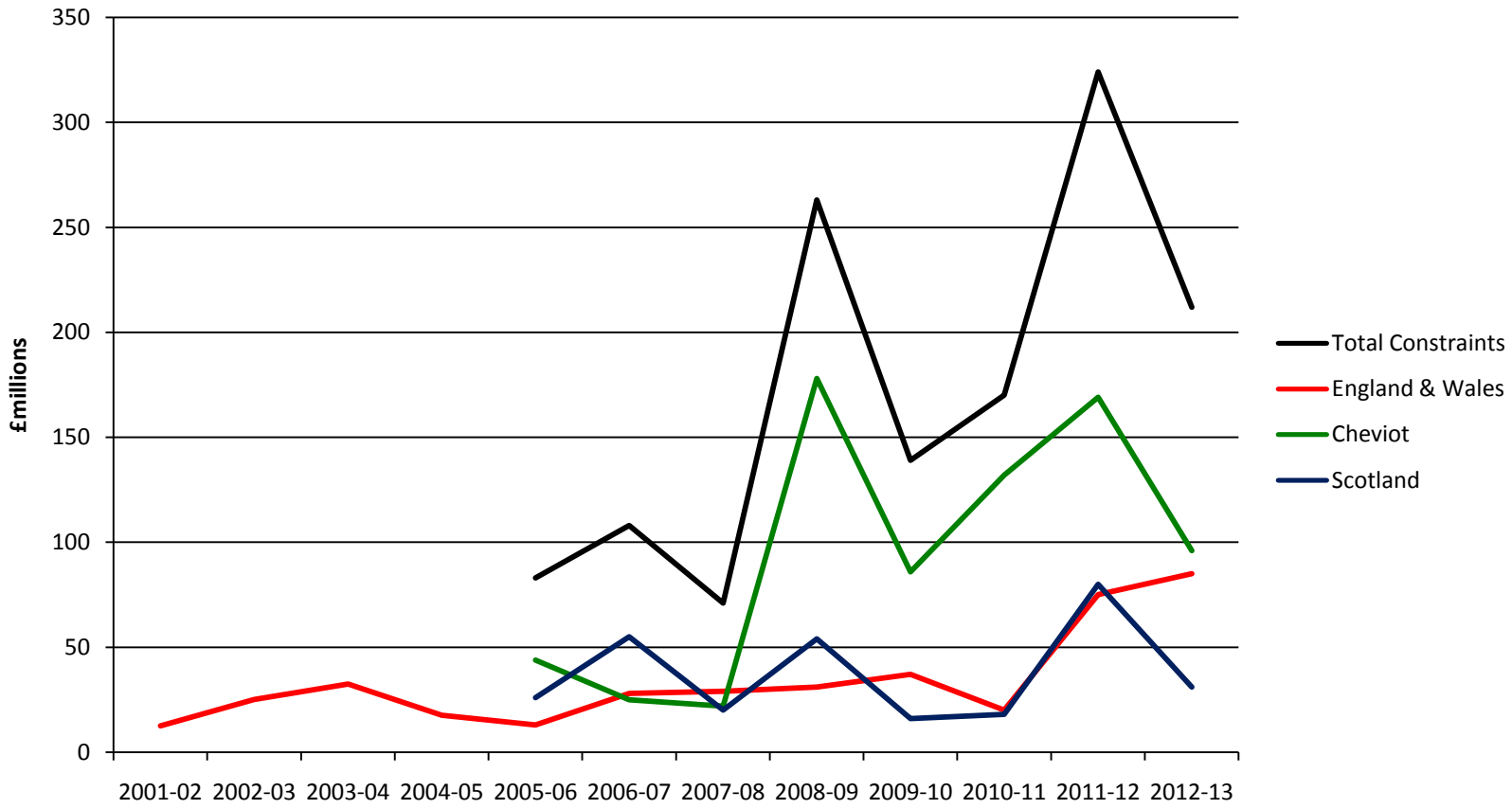


Source: Electricity Capacity Assessment Report 2013, Ofgem figures

FTI CONSULTING

ofgem Making a positive difference for energy consumers

Transmission constraint costs have steadily risen over time

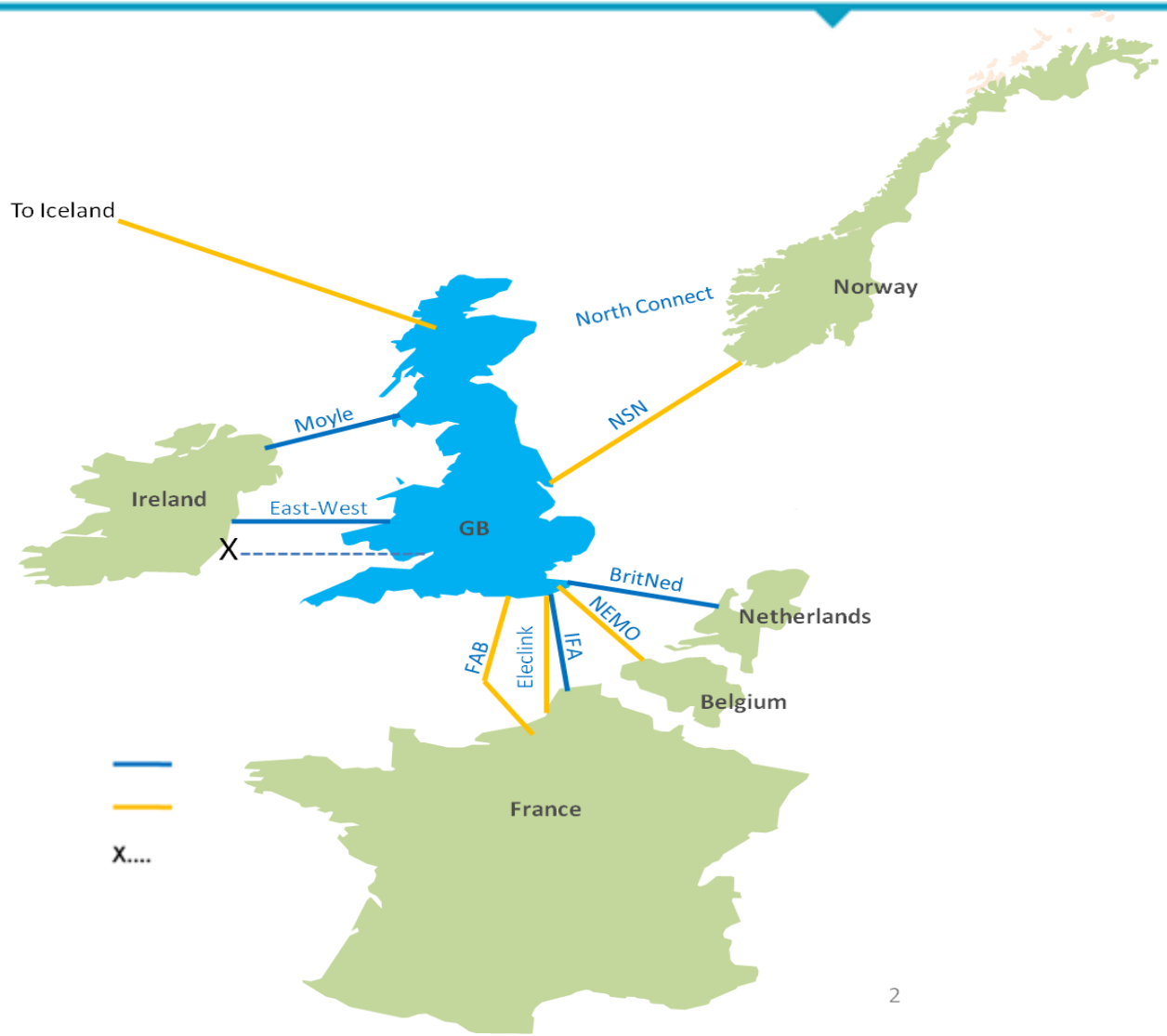


FTI CONSULTING

ofgem Making a positive difference for energy consumers

Increasing level of interconnection

Key	
	Existing (4GW)
	Future interconnectors
X....	Multi-purpose projects (GB RES support)

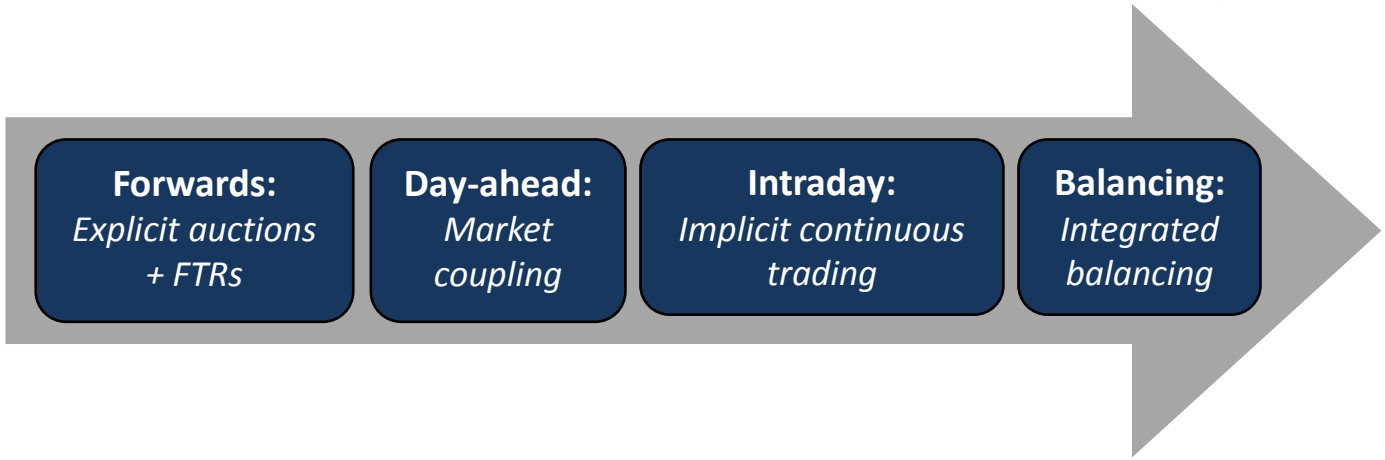


Levels of interconnection		
2000	**2013**	**2020**
2.5GW	4.0GW	6-9GW

FTI CONSULTING

ofgem Making a positive difference for energy consumers

External Factors - EU Target Model



Possible key impacts on GB	■ Consideration of market splitting and zones ■ Standardised products e.g. forward and balancing ■ Formalised role for power exchange in market coupling ■ Interconnector flows depend only on price differentials ■ Greater opportunity to trade cross-border within day ■ Cross-border competition for balancing services

FTI CONSULTING™

How might these key impacts affect the GB market?

ofgem Making a positive difference for energy consumers

External Drivers

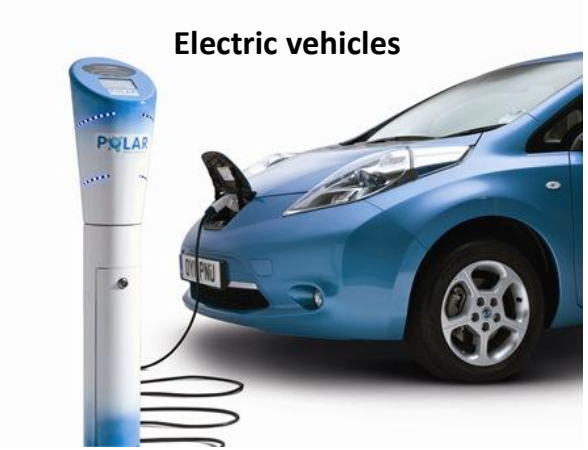
Contracts for Difference

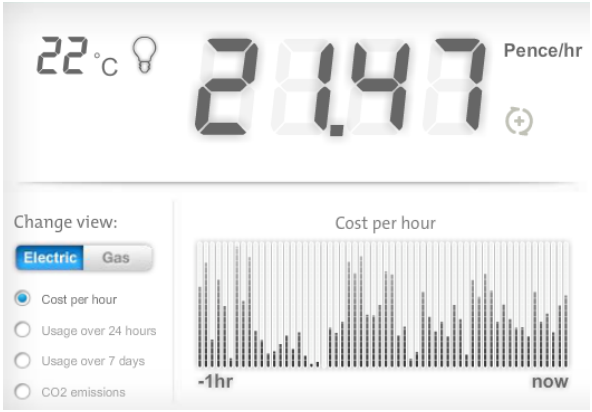
Carbon Price Support

Emissions Performance Standard

Capacity Mechanism

Electric vehicles





Smart meters

Do any other policy and technological developments need to be considered?

FTI CONSULTING™

PART 3: WHAT KIND OF CHANGES ARE/WILL BE REQUIRED IN LIGHT OF DEVELOPMENTS SINCE 2001?

ofgem Making a positive difference for energy consumers

How do developments impact on NETA's high-level principles and market features?

EMR

- Much greater government role in major generation investment decisions (mix, security margin)

Europe

- Interconnection with Europe: increases need for co-ordination
- European Target Model: market splitting, price zones, PX
- Interconnection with Europe: any risk of a "Swedish interconnectors scenario" with single GB price zone?
- REMIT and other financial regulation of energy trading: shift away from OTC trading?

Other

- 20GW+ of wind in Scotland raises locational issues
- Connect & Manage – new capacity before network re-enforcement
- Intermittency – should we expect very volatile or continuously low spot prices?
- Low reserve margins mid-'10s: avoid creating uncertainty/enhanced regulatory risk through FTA process

FTI CONSULTING

ofgem Making a positive difference for energy consumers

Might some principles need to evolve?

Ofgem's objectives have evolved over time and now include reference to *"the reduction of greenhouse gases"* and *"compliance with any decision of the Agency or the European Commission under the Third Package"*

"Market signals drive long-run investment" now has to take account of other signals and incentives

e.g. CfDs, FiTs, CM

"Minimum regulatory oversight" but Ofgem has much greater role in various forms of oversight

e.g. REMIT

"Cost reflective charges" - some cost-reflective charges may impose high costs with little efficiency gains

e.g. charging offshore wind for transmission losses may not change locational decisions

FTI CONSULTING™

ofgem Making a positive difference for energy consumers

How will developments impact on current trading arrangements?

Integration of renewables	■ What routes to market do renewable generators have? ■ Is renewable generation exposed to an appropriate level of risk?
Facilitating demand-side response	■ Do the current arrangements reflect the full value of DSR flexibility? ■ Are there obstacles to DSR in the current TA?
Efficient balancing & system operation	■ How can the SO efficiently meet greater reserve requirements? ■ Do we have the right ancillary services to support the system?
European integration	■ How does the implementation of the European Target Model impact on GB trading arrangements? ■ How should the economic case for zonal prices be considered?
Incentives to maintain & invest in capability	■ How can trading arrangements evolve to provide appropriate incentives to invest in new capability and evaluate trade-offs between different technologies?
Interactions with gas arrangements	■ Are electricity trading arrangements fully compatible with gas arrangements?
Institutional arrangements	■ Does the role of the SO need to change?

FTI CONSULTING™

ofgem Making a positive difference for energy consumers

What might this mean?

In a less-predictable, intermittent future...

An enhanced role for System Operator?

- Following the new role provided by EMR in coordinating CM and CfDs
- Recommending optimal bidding zones design
- Stronger coordination with European TSOs, e.g. in capacity calculations
- Sharing more information with market participants, e.g. wind forecasts
- Possible bigger role in network planning

A more crucial role for the market?

- Prices to signal need for short term flexibility and investments in new capabilities
- Spur competition between 'smart' and asset solutions
- Valuing flexibility, not just energy, e.g. reserve procurement and ancillary services
- Network planning informed by price signals (develops to respond to market needs)
- Efficient cross-border access to energy and flexibility in Europe

Questions

Fundamental questions (for discussion today, and for work in coming months):

- Principles: does this discussion identify the relevant principles, and the most important challenges to which those principles may need to adapt in FTA?

- Issues: what changes to TA may be required in response to the issues discussed today?

ofgem Making a positive difference for energy consumers

Ofgem is the Office of Gas and Electricity Markets.

Our priority is to protect and to make a positive difference for all energy consumers. We work to promote value for money, security of supply and sustainability for present and future generations. We do this through the supervision and development of markets, regulation and the delivery of government schemes.

We work effectively with, but independently of, government, the energy industry and other stakeholders. We do so within a legal framework determined by the UK government and the European Union.

www.ofgem.gov.uk