Ancillary Services:
Tender Procurement and Development

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Agenda

- Tender Procurement
  - Constraint Management
  - STOR
  - Fast Reserve
  - Firm Frequency Response
- Service Development
  - Frequency Response
  - Optional Fast Reserve Services
  - Negative Reserve

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Tender Procurement

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Constraint Management

- Voltage Management Contracts
  - **South Coast:** Marchwood overnight during April, May, June & July
  - **South Wales**: Pembroke overnight during June
  - **South East:** Contracts awarded to Grain and Coryton for May requirement. Tender published for July, currently reviewing submissions
  - **East Midlands**: Tender published for July, currently reviewing submissions
  - **Indexing:** Given the uncertainty around plant running, we are not looking to procure contracts on a fixed price basis. Our current tenders are inviting prices based on an index only approach for voltage at minimum output

Constraint Management

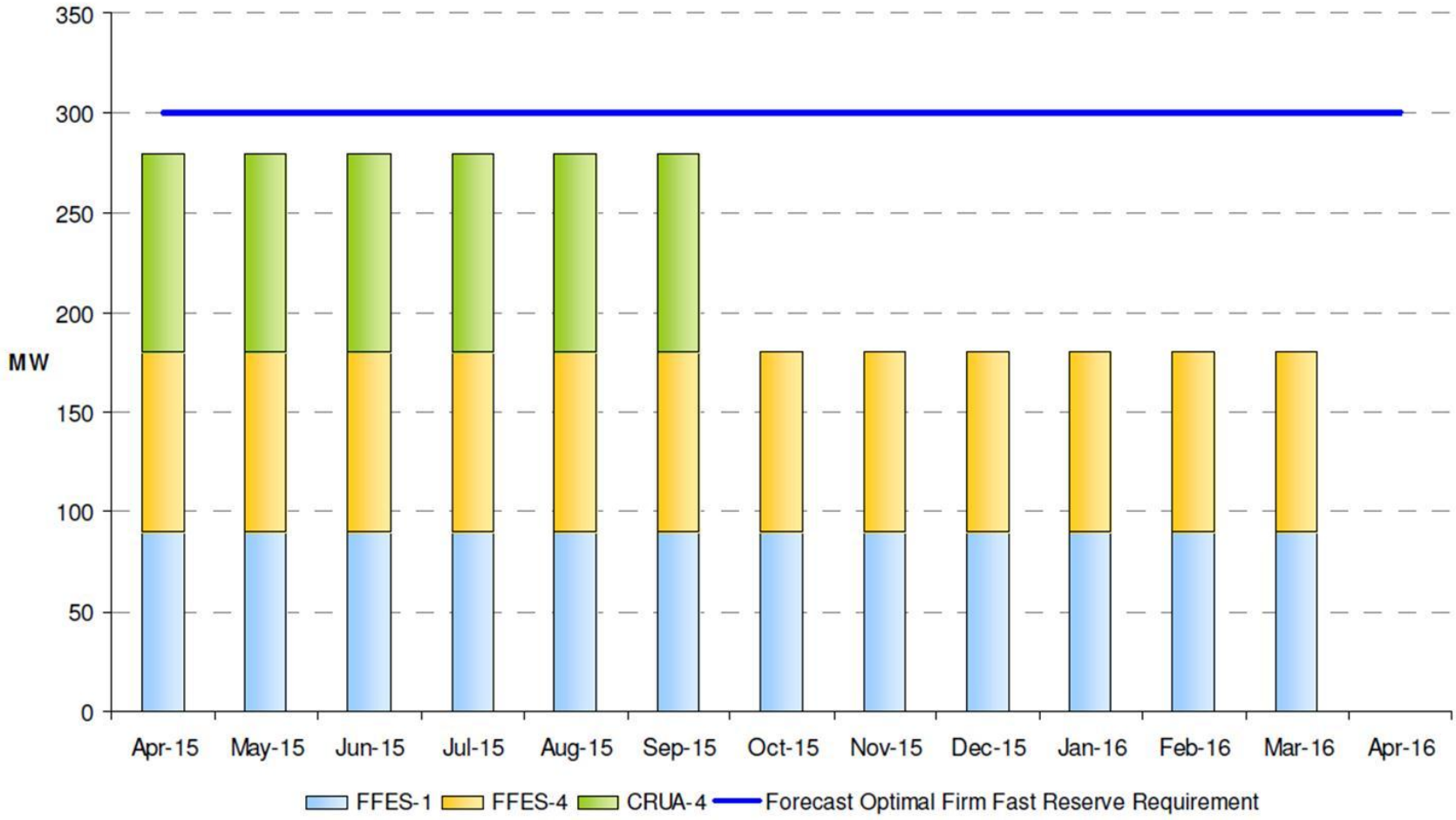
- Stability Contracts
  - **North Wales:** Capped pumping contracts with Dinorwig overnight for stability issues in April, May & June
- Standard Terms Review
  - Views invited on current contractual arrangements
  - Comments to Account Manager or commercial.operation@nationalgrid.com

STOR

- Carbon Intensity Report Published
  - Over 200,000 MWh STOR utilised in 2014/15
  - STOR saves ½ million tonnes of CO_2 compared to meeting reserve requirement through synchronised plant
- Standard Contract Terms Review - September
  - Currently working through potential proposals
- STOR reports
  - These are your reports – please tell us how we can improve them

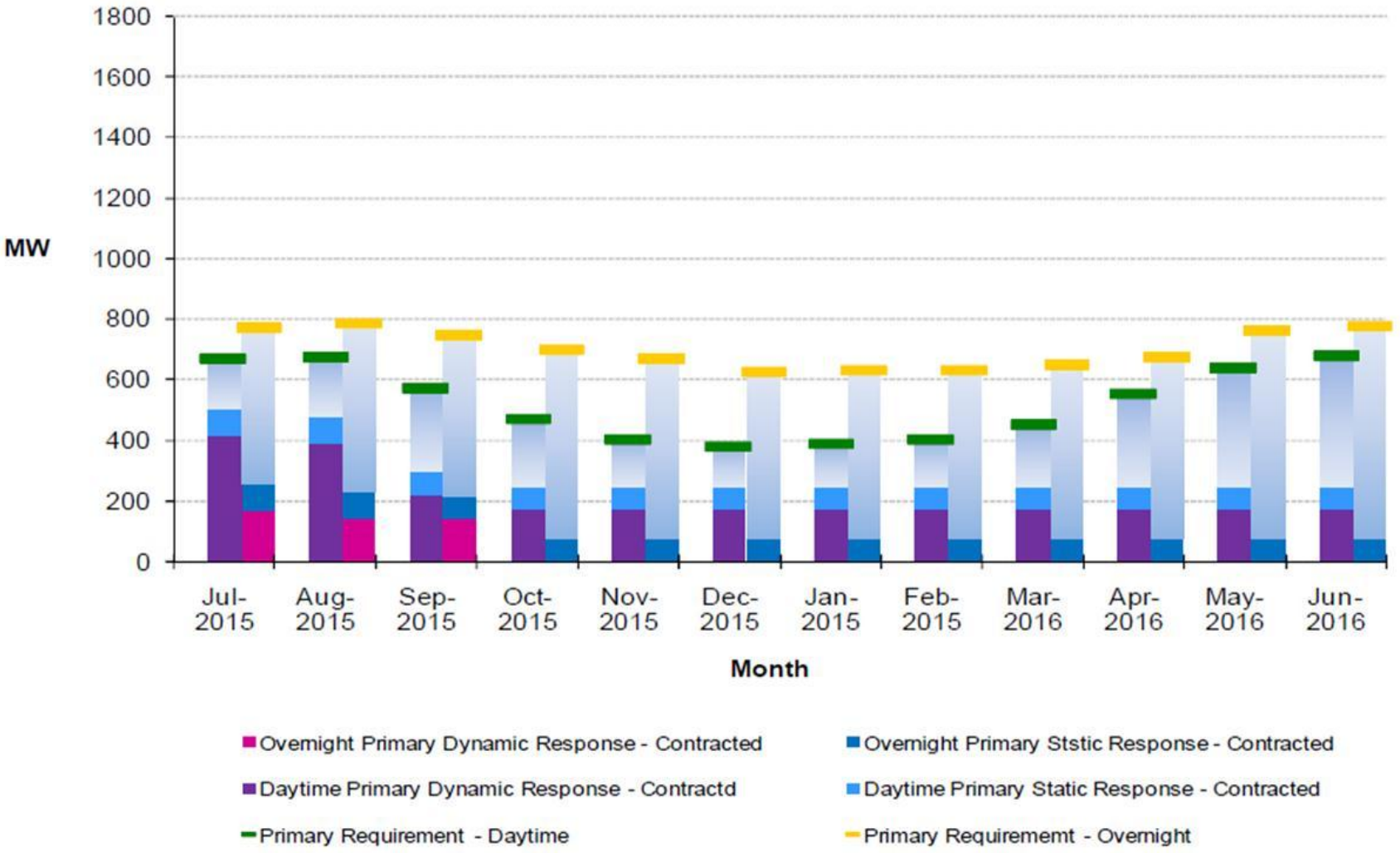
Fast Reserve

Fig.1 - Contracted Firm Fast Reserve



Firm Frequency Response - Primary

Fig.2a - 12 Month Primary Requirement



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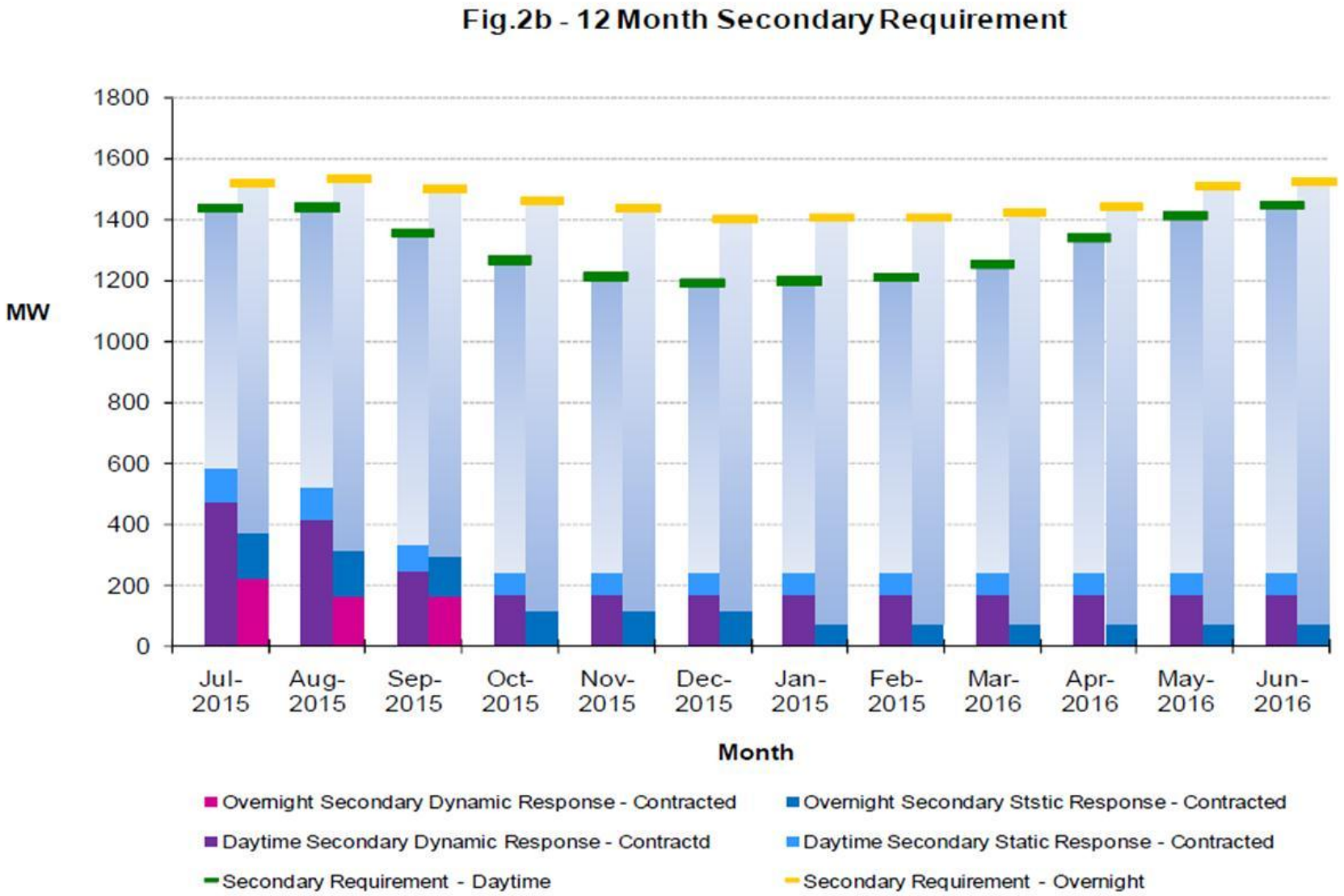
Firm Frequency Response - Secondary



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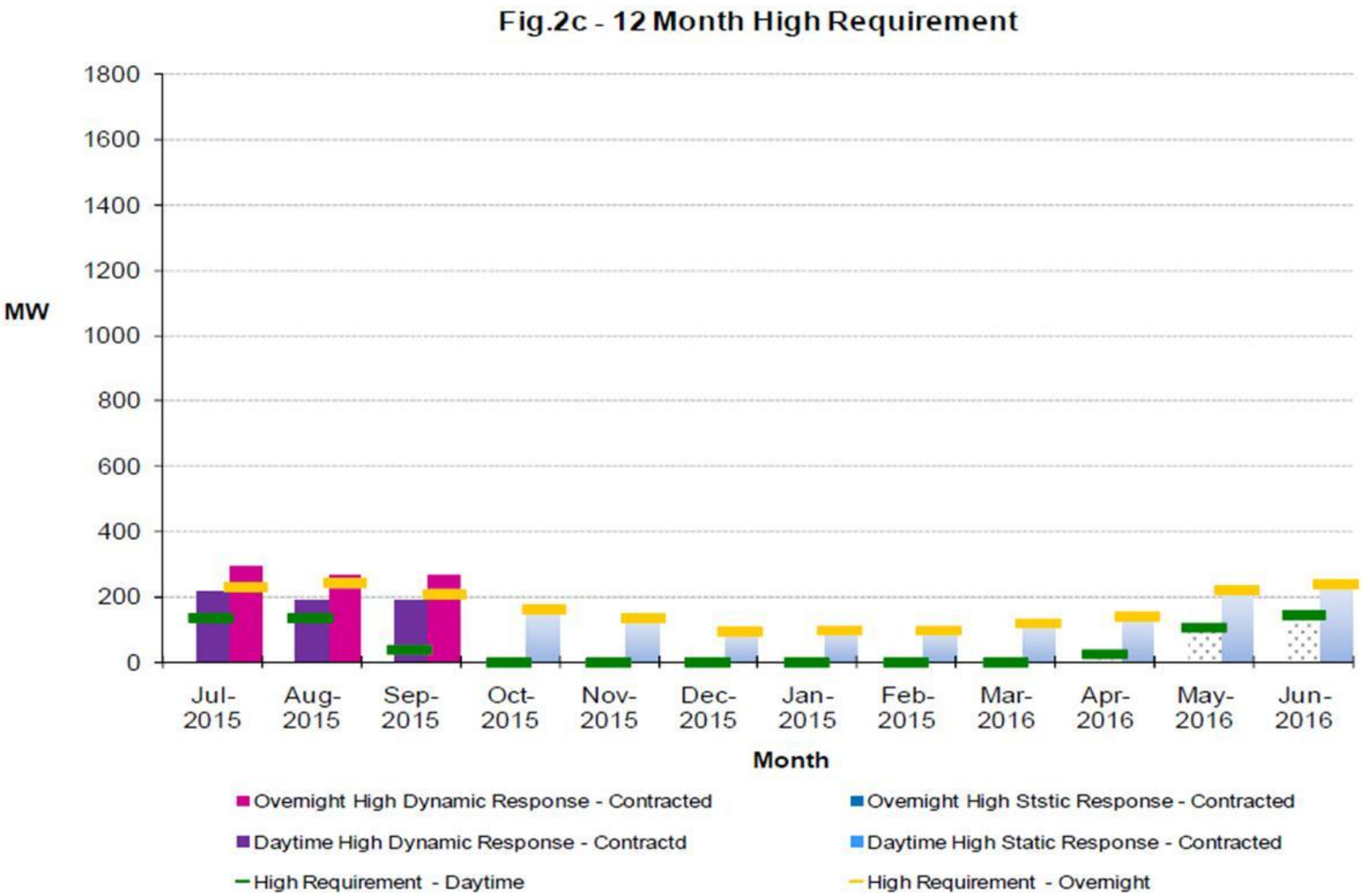
Firm Frequency Response - High



Frequency Response Utilisation from Wind

Holding Volumes

2015	Primary (MWh)	Secondary (MWh)	High (MWh)
January	105	56	174
February	0	0	0
March	0	0	0
April	352	143	333

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Frequency Response Utilisation from Wind

- We have started to issue more instructions to Wind Farms
- However:
  - Not all wind farms have fully understood the instructions
  - Some control points may be overseas
  - Delay in responding to instructions
  - Large range of prices within FRPS for wind
- Response is of a high standard during utilisation

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Service Developments

FFR Developments

- FFR Bridging contract for static response now live
  - Aimed at aggregators of <10MW sites to enter FFR market
  - Guidance document and testing procedure on website

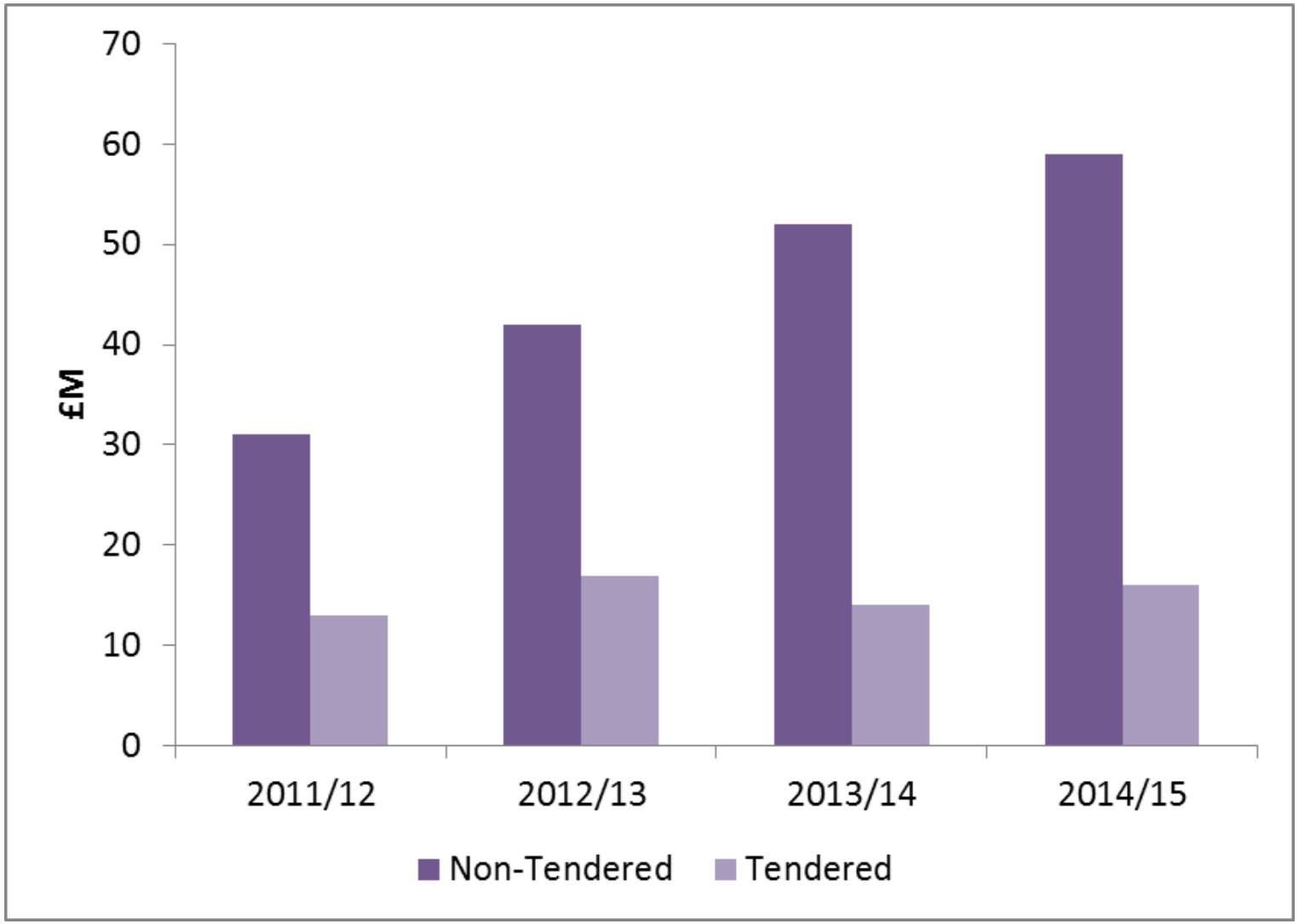
Excluding contracted response	Approx. Day Req.t (MW)	Approx. Night Req.t (MW)	Minimum Dynamic Req.t (MW)	Potential for static response (MW)
Primary	200	800	-450	0 - 350
Secondary	900	1200	-450	450 - 750
High	0	100	-450	0

http://www2.nationalgrid.com/UK/Services/Balancing-services/Frequency-response/Firm-Frequency-Response/FFR-Bridging/

Fast Reserve – Current Market

- Absolute Firm requirement ~300MW between 06:00-23:00
- Actual requirement between 300-600MW
  - Up to 300MW met by units providing Optional Services
- Optional Services (Non-Tendered)
  - Enhanced Run Up / Run Down Rates, Spin Gen / Spin Pump, etc.
  - Enhanced Rate Fees and Optional Energy Price paid on utilisation
- No transparency over utilisation or payments

Fast Reserve – Current Market



Development of Optional Reserve Services

- Specify service requirements
- Identify provider opportunities
- Industry engagement:
  - Commercial Balancing Services Group (CBSG) 4th June
  - Open Letter
  - Development workgroup
- Further communication at the next CBSG meeting in September

Negative Reserve

- The ability to reduce generation/increase demand as a result of a system need
  - Capacity required in the opposite direction to other reserve products such as STOR
- Historically not procured directly, sufficient capacity from generation operating above SEL
  - Occasional requirement to BOA a low cost unit above SEL
- In future, lower demand minima and less cheap generation will reduce the amount available

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Negative Reserve

- NCC instruct generators to zero through BM for a short period (two-shifting)
- NCC use capacity on wind generators to secure negative reserve volume
- Impact on cost as a result of BOAs

Contracting for negative reserve may become economic

- More internal work required, further communication expected at CBSG in September