

European Update

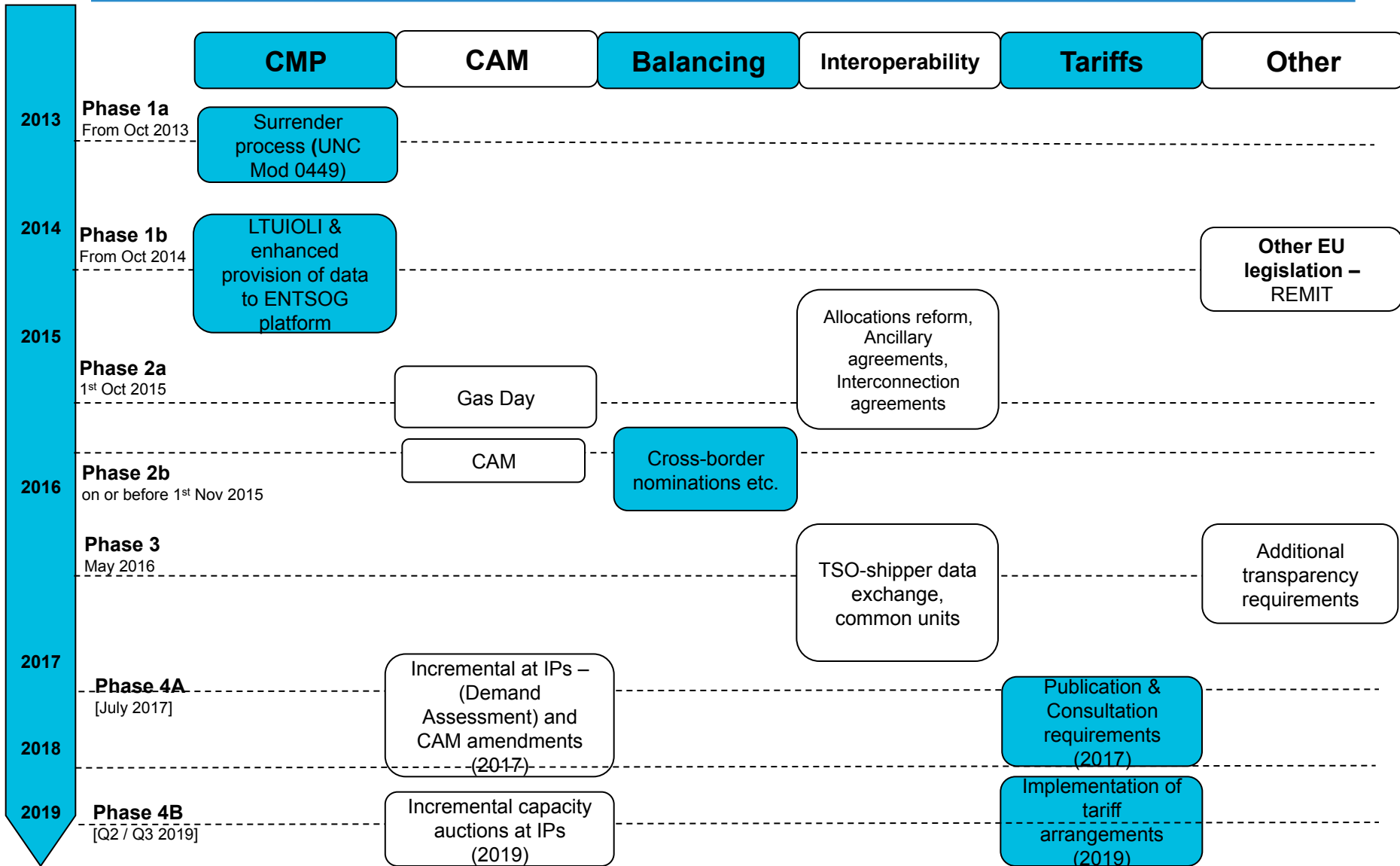


1. General Update

Code Status Update

Code	Current Status	Implementation date
Congestion Management (CMP)	Implemented	1 st October 2013
Capacity Allocation Mechanism (CAM)	Implemented	1 st November 2015
Gas Balancing (BAL)	Implemented	1 st October 2015
Interoperability & Data Exchange (INT)	Code entered EU Law on 30 th April now Commission Regulation (EU) N0 703/2015	1 st October 2015, 1 st May 2016
Tariffs (TAR)	Approved in comitology	Applicable from EIF [April 2017], October 2017, 31 May 2019.
Incremental Capacity (& CAM amendments)	Approved in comitology	Applicable from [April 2017] Auctions applicable from [2019]

Road Map



2. EU Code Updates

EU Tariffs Code Update

EU Tariff Code: Process Steps

- **29-30 Sept 2016:** 2nd Formal Comitology meeting for both TAR NC and CAM NC amendment, with translated NCs, with voting (TAR NC approved)
- **Oct 2016:** Finalisation of translation
- **Nov 2016 – Jan 2017:** Council and EU parliamentary scrutiny
- **March 2016:** Formal adoption of TAR NC
- **Mar-Apr 2017:** Publication of TAR NC & entry into force

EU Tariff Code

■ Madrid Forum (6-7 October)

- EC welcomed gas committee approval of TAR NC
- Push for “timely implementation” & ACER/ENTSOG “invited” to support and monitor implementation
- General stakeholder support for transparency and consultation
 - Some concerns about limited opportunity for stakeholder input when EC took over process
- EC again flagged further development of tariff rules (i.e. a Phase 2)
- <https://ec.europa.eu/energy/en/events/madrid-forum>

EU Tariff Code: ENTSOG activity

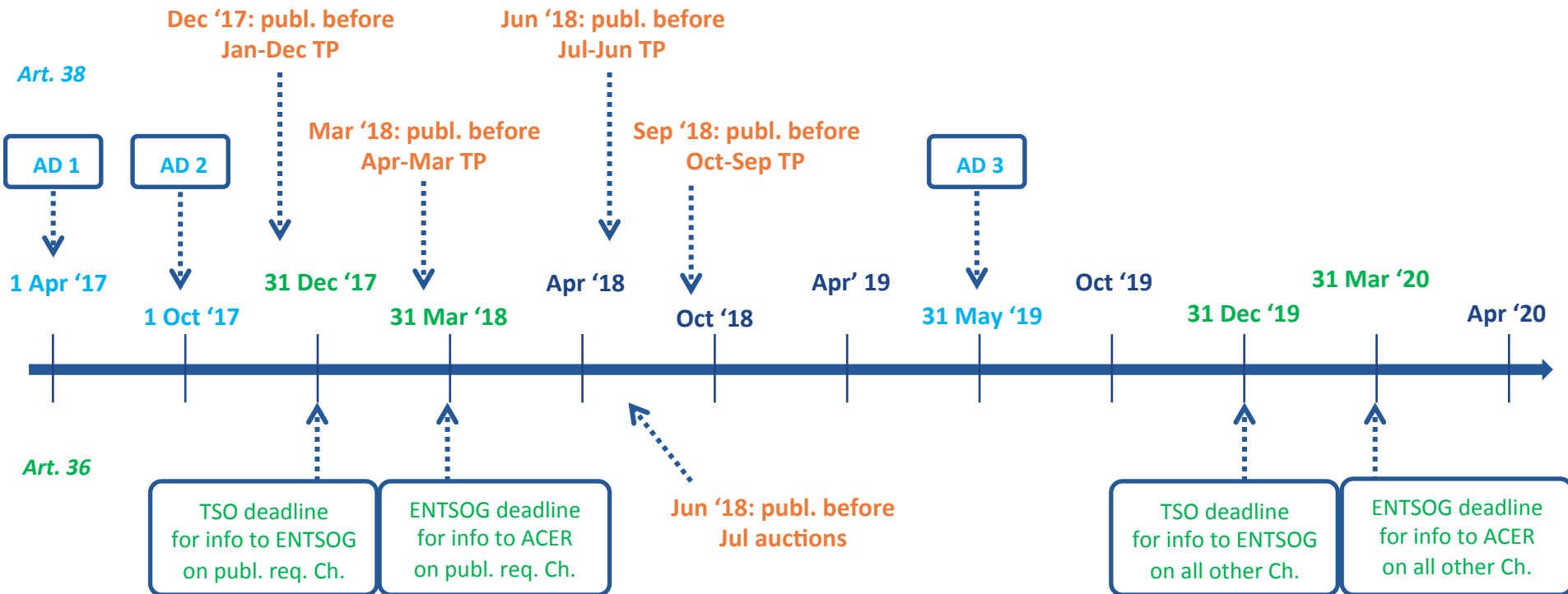
- ENTSOG producing a “high-level” slide pack and Implementation Document on TAR NC
- Implementation Document
 - Publication of ID to coincide with publication of TAR NC in Official Journal (i.e. March-April 2017)
 - Possible Implementation Workshop after “*entry into force*”
- Preparation of template for publication of information on TSO/NRA website

EU Tariff Code: ENTSOG activity

- **Art 36: Implementation monitoring**
- ENTSOG have role in assisting ACER in monitoring implementation of TAR NC
- Series of reports to be produced from March 2018
 - 1st report (March 2018)
 - Chapters application from EIF (plus Chapter VIII publication requirements if relevant)
 - 2nd report (March/April 2019)
 - Chapters with 2nd application date (including Ch VIII publication requirements), including comparison with 2018
 - 3rd report (March 2020) Chapters with 3rd application date, including trends
 - Etc....



Implementation Timeline



*This timeline impacts the content of ENTSOG's implementation and effect monitoring reports;
In any case, their preparation is a yearly activity as it is linked to ENTSOG's annual report*

EU Tariff Code – Phase 4a (transparency)

- Focus on Art. 29-32 of TAR NC for Phase 4a
- Application Date in TAR NC: from 1 October 2017
 - In reality aligned to July 2018 auction and October 2018 tariff year
- Solution being developed concurrently with CAM amendment and incremental release
- Requirements gathering (NG/Xoserve) underway for impact on systems e.g. new publication requirements on NG website and EU Transparency Platform

Other details of TAR NC requirements discussed at NTSCMF

EU CAM Amendment & Incremental Update

EU Code update for CAM

- Rescheduled Comitology Meeting took place on 13th/14th Oct
- Final changes shared in following slides
- ‘Informal’ changes shared last month - Articles 11, 21, 25, 31, 32, 37 - went in. These changes are not repeated in this slide pack (unless there was even further change to the relevant text)
- Some final changes will impact UNC modifications raised
 - Impact of changes on the modifications will be discussed at the workgroup development (first meeting 15th Nov)
- 1st April 2017 remains Entry into Force date

Capacity calculation & maximisation

Article 6

- ~~2. The calculation methodology and the rules of making available the capacity, adopted by the transmission system operators, shall guarantee that when an emergency situation or when an exceptional event as defined in Article 2(a) of Commission Regulation (EU) No 2015/703 occurs in the Member State or an adjacent Member State firm capacity at interconnection points has priority over firm capacity at exit points into storage facilities.~~
- The calculation methodology and the rules of making available the capacity, adopted by the transmission system operators, shall address specific situations where competing capacities across systems involve interconnection points and exit points to storage facilities.

Auction Calendar changes

Article 11

3. *The auction process shall offer capacity **at least for the upcoming 25 gas years and** for no longer than the upcoming 15 gas years for existing capacity. When offering incremental capacity, the offer levels may be offered in yearly capacity auctions for a maximum of 15 years after the start of operational use.*
4. ***As from 2018**, annual yearly capacity auctions shall start on the first Monday of July each year unless otherwise specified in the auction calendar.*

Alignment of Terms and Conditions

Article 20

1. Within ~~nine~~ 9 months from the entry into force of this Regulation [*Precise date to be entered by OPOCE*] ENTSOG shall, *after consulting stakeholders, review and* create a catalogue of the ~~applicable main~~ terms and conditions of the transport contract(s) of the transmission system operators for bundled capacity products. *ENTSOG shall analyse existing transport contracts, identifying and categorising differences between the existing in relation to the main* terms and conditions and the reasons for such differences and publish its findings in a report.
- ~~2. No later than 6 months after the publication of the report referred to in paragraph 1, any NRA, having due regard to applicable EU and mandatory national legislation, may provide an opinion to ENTSOG and to the Agency indicating the differences which they consider may be addressed through common terms and conditions as well as those that may not be reconciled.~~

Alignment of Terms and Conditions (cont)

2. On the basis of the ~~ENTSOG~~ report referred to in paragraph 1 ~~and any opinions of the NRA pursuant to paragraph 2~~, ENTSOG, *after* consulting ~~network users stakeholders~~, shall within ~~126~~ months after the publication of the report develop and publish a template for ~~common~~ *the main* terms and conditions covering ~~all~~ contractual provisions which are not affected by fundamental differences in principles of national law *or jurisprudence*, for the offer of bundled capacity products.
3. The Agency, having due regard to the opinions of the national regulatory authorities, shall provide an opinion on the *template for the main* ~~common~~ terms and conditions within a further three months. Taking into account the opinion provided by the Agency, ENTSOG shall publish on its website the final template for the *main* ~~common~~ terms and conditions no later than three months after receiving the Agency's opinion.
4. After the publication of the *final* template for *the main* ~~common~~ terms and conditions, transmission system operators, subject to the approval of national regulatory authority, ~~shall~~ *may* apply the terms and conditions set out in the template in the case of newly contracted bundled capacity products.

Capacity Conversion

Article 21

- 3. As from 1 January 2018, transmission system operators shall offer network users holding mismatched unbundled capacity at one side of an interconnection point a free-of-charge capacity conversion service. Such a capacity conversion service shall apply to **annual, quarterly or monthly** capacity products for **bundled** firm capacity at that interconnection point which the network user had to acquire because insufficient unbundled capacity on the other side of the interconnection point was offered by an adjacent transmission system operator. This service shall be offered on a non-discriminatory basis and shall prevent additional charges from being applied to network users for capacity they already hold. **In particular payments for the part of the contracted bundled capacity which network users already hold as mismatched unbundled capacity shall be limited to a possible auction premium.** This service shall be based on the conversion model under development by ENTSOG and to be finalised at the latest by 1 October 2017 after consulting **stakeholders and** the Agency. The implementation may be facilitated by the capacity booking platform(s) referred to in Article 37. The use of this service shall be reported annually **20** to the respective national regulatory authorities.*

Economic Test

Article 22

- 3. An incremental capacity project shall be initiated if the economic test has a positive outcome on both sides of an interconnection point for at least one offer level that includes incremental capacity. In case more than one offer level results in a positive outcome of the economic test, the offer level with the largest amount of capacity that resulted in a positive outcome shall be used for proceeding with the incremental capacity project towards commissioning. In case no offer level results in a positive outcome, the specific incremental capacity process shall be terminated.*

Article 23

- 2. If the economic test has a positive outcome then the ~~actual~~ investment costs associated with the incremental capacity shall be reflected ~~in full~~ in an increase in the allowed or target revenue in accordance with the applicable national rules.*

Market Demand Assessment

Article 26

- *Immediately after the start of the annual yearly capacity auction at least in each odd-numbered year, transmission system operators shall co-operate in the processes of assessing market demand for incremental capacity and of conducting technical studies for incremental capacity projects for their joint interconnection points. The first demand assessment shall be conducted in 2017 [as from the entry into force of this Regulation](#).*

Alternative Allocation Mechanism

Article 30

2. ~~TSOs may apply an alternative allocation mechanism where the demand assessment report referred to in Article 26 or the Consultation referred to in Article 27(3)~~ An alternative capacity allocation mechanism can be used, subject to national regulatory authorities' approval, where it is reasonable to conclude from the market demand assessment pursuant to Article 26 or the consultation defined in Article 27(3) that the ascending clock auction is not suitable and, ~~indicate~~ that the incremental capacity project fulfils both of the following conditions:
5. If either booking duration or bids for higher amounts of capacity are prioritised, national regulatory authorities shall decide ~~to~~ on setting aside an amount ~~equal to~~ of at least 10% and up to 20% of the technical capacity at each interconnection point when applying Article 8(8). Capacity set aside in this manner shall be offered in accordance with Article 8(7).

Transitional Arrangements

Article 31

- In the case of incremental capacity projects initiated before ~~1 April 2017~~ entry into force, Articles 26 to 30 shall apply unless such projects have been granted the applicable approvals for capacity allocation by the respective national regulatory authorities before ~~1 April 2017~~ 1 August 2017.*
- ~~Articles 26 to 28 shall apply only to incremental capacity processes initiated after 1 April 2017. Articles 29 and 30 shall mutatis mutandis apply to incremental capacity processes initiated but not completed before 1 April 2017 where capacity allocation has not taken place.~~*

Interruptible

Article 32

1. *Transmission system operators shall ~~only~~ offer a daily capacity product for interruptible capacity in both directions at interconnection points where the respective standard capacity product for firm capacity was sold out day-ahead or was not offered. At unidirectional interconnection points where firm capacity is offered only in one direction, transmission system operators shall offer at least a daily product for interruptible capacity in the other direction. ~~As from 1 January 2018, transmission system operators shall only offer a daily capacity product for interruptible capacity in both directions at interconnection points if the respective standard capacity product for firm capacity was sold out day-ahead or was not offered.~~*

EU Gas Quality Update

EU Gas Quality Update: Implementation of the CEN Standard via INT Code

- Madrid Forum minutes – 6-7 October 2016
- **04. Gas quality harmonisation**
- *“Following intensive discussions and recognising the lack of support for making the CEN Standard EN 16726 legally binding, the Forum supports the Commission’s announcement not to pursue legally binding provisions on this matter at this stage.*
- *Nevertheless, the Forum invites ENTSOG to finalise its assessment of the effects of the inclusion of the CEN Standard EN 16726 into the Network Code on Interoperability and Data Exchange Rules by the end of 2016.*
- *The Forum confirms its support for CEN to carry on the work on finding an agreement on a band for the Wobbe Index, elaborating on the possibility of regional bands, to be included in an updated CEN standard while ensuring the integrity of the existing standard and calls on market participants to be constructively engaged in this process. The Commission will reconsider further harmonisation activities in light of the outcome of the CEN revision work.”*

EU Gas Quality Update: Implementation of the CEN Standard via INT Code

- ENTSOG's process leading to the publication of its impact analysis will still continue
- ENTSOG's second consultation closed on 21st October 2016
- National Grid NTS' response is published with the documents for this meeting. Key points are that we:
 - Maintain a preference to keep the CEN standard voluntary;
 - Acknowledge that the refined 'IPs only' scenario is now workable for us as a TSO whereas the original one was not; and
 - Promote a vision for the future of gas which gas quality specification(s) should then be designed to fit

EU Gas Quality Update: Implementation of the CEN Standard via INT Code

- ENTSOG's third stakeholder meeting will take place on 16th November 2016, at which ENTSOG will:
 - Present the outcome of the second consultation
 - Share with stakeholders the draft conclusions of its analysis as well as its reflections on how potential future work on the topic could be driven
- Stakeholder meeting on 16th November 2016 details:
 - Location: Silken Berlaymont Hotel, Brussels
 - Deadline for registration: 9th November 2016
 - If you wish to attend but have not received ENTSOG's invitation, please contact philip.hobbins@nationalgrid.com

Future Topics

Future Topics

Topic Area	Provisional Date
Tariffs Code	Monthly updates whilst progressing through comitology
CAM Amendment	Monthly updates whilst progressing through comitology
EU Gas Quality	Monthly updates

AOB



Ofgem's review of Xoserve's Funding, Governance and Ownership (FGO)

Highlights

- Challenge to overall apportionment of voting rights on new Change and Contract committees:
 - How Transporters' votes are to be shared across GTs and iGTs
 - How Shipper members votes will be reapportioned due to non-attendance of individual member(s)
- Legal and contract text run-throughs carried out
- Modification Proposals to be submitted to Panel on November 4th

Gas Future Operability Planning 2016



The role of the GFOP



Scenarios

We use our Future Energy Scenarios as the starting point for all our future network planning

Assumptions

We need to make assumptions about the more uncertain elements of the future and which areas to focus on first e.g. areas of greatest uncertainty or impact on the future of gas, our network and customers

The GFOP will allow you to:

- tell us what you think might happen
- tell us how your use of the NTS might change
- challenge our assumptions
- provide evidence for other areas we should look at
- explore options / opportunities for collaborative working

Analysis

We then complete our network analysis based on the scenarios and assumptions we have made

The GFOP will then help us to:

- understand the impact
- identify and quantify operability risk
- quantify capability requirements
- discuss potential options (rules, tools and assets)
- provide a starting point for innovation and collaboration with you

Network Impact

We then assess the impact and document what this could mean for our network and our customers. What problems we may encounter and what possible solutions there may be. Anything we decide to take further action on will be detailed in the GTYS

The GFOP will allow us to more clearly articulate:

- what operability issues we have identified
- their extent – localised or national
- when they are likely to occur
- what capability is required
- what potential options we are aware of
- What the consequences could be on our service

Actions

Our Gas Ten Year Statement will outline what actions we need to take now in our investments or processes etc.

In GTYS we will:

- outline how we are responding to these impacts
- what options we are taking forward
- what changes we are making to our decision making processes
- what changes we are making to our operational processes

GFOP 2016 Key Messages



Changing energy landscape

- Our direct connect customers (power generators, interconnectors, storage sites) want to be able to take gas more quickly at shorter notice to respond to changes in the electricity market. This requires more operational flexibility as we need to be able to respond to shorter notice changes in customer demand more rapidly.
- Our Distribution Network customers want additional flexibility in how and when they take gas in order to meet their own customer's requirements. As above, this also requires more network flexibility as we need to be able to move gas around the network effectively and efficiently to ensure we can meet the varying gas demands of our customers throughout the gas day.
- There is a notable trend towards later reconciliations of daily balancing by our more commercially responsive customers which depletes gas system stocks. We have included the 5th September 2016 as an example day in the GFOP which highlights the challenges later daily balancing can have on our system operability.
- Longer term capacity auctions no longer indicate a shipper's intention to flow. These auctions used to give us clear signals from the market that changes were required. We now have less certainty on the need to invest or take actions in advance to balance the network.
- The predictability of supply (location and volume) and demand across the NTS is reducing. This means we have to react to more rapid rates of change in our customer requirements of the NTS which requires greater operational flexibility to manage.

GFOP 2016 Key Messages



Gas and electricity interactions – future energy generation

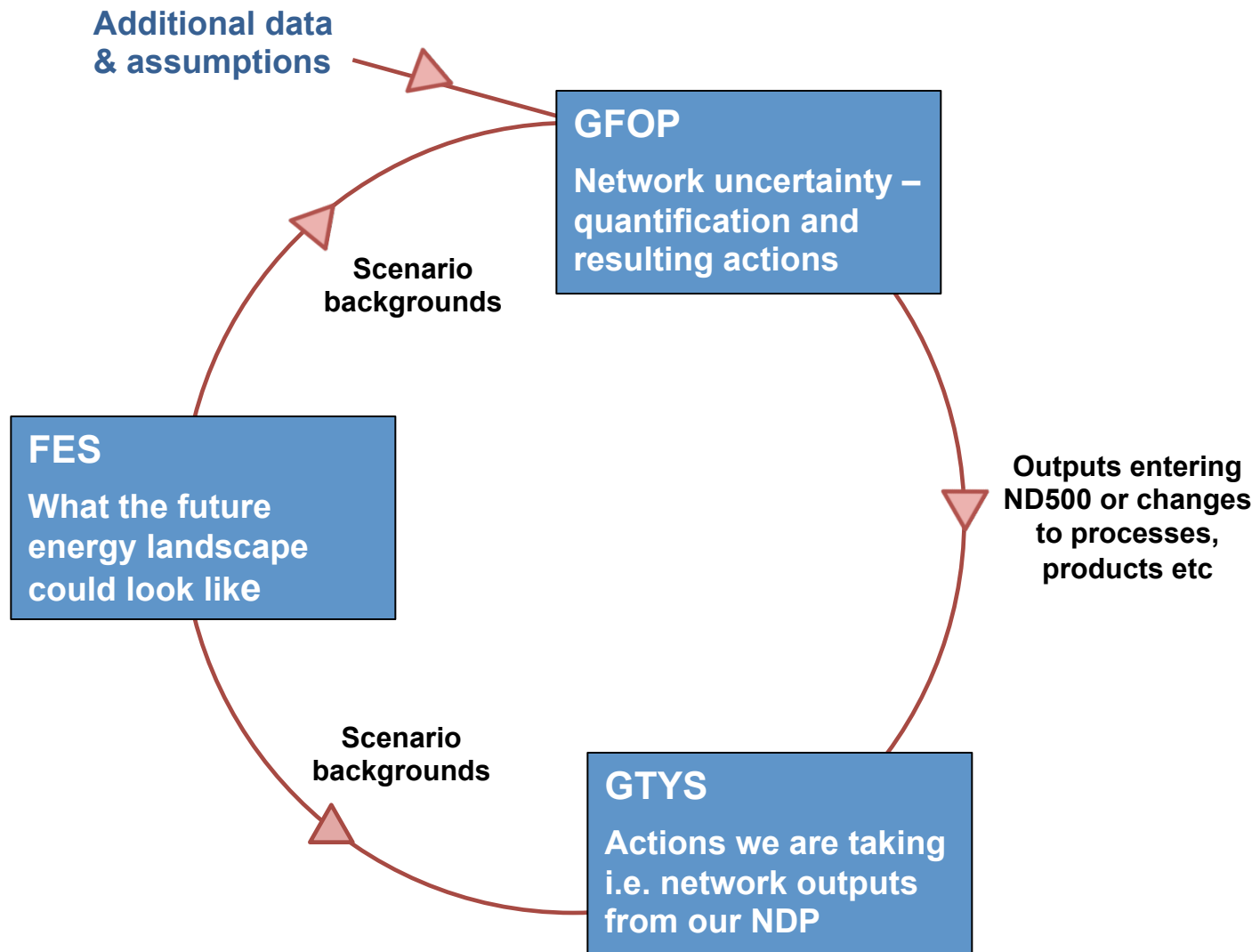
- Between 15GW and 38GW of new combined cycle gas turbine (CCGT) capacity is expected to connect to the NTS by 2040 (currently 28GW).
- Our initial analysis for the GFOP has focused on understanding the potential impact of increasing volumes and volatility of Combined Cycle Gas Turbine (CCGT) generation on the NTS, under a range of futures as described by our Future Energy Scenarios.
- The behaviour of Combined Cycle Gas Turbine (CCGT) generators is expected to become more unpredictable as their requirement to generate will be more closely linked with renewable generation output and their interaction with other electricity network balancing tools (interconnection, storage, other generation and demand-side response).
- CCGTs are already a significant contributor to gas system stock swing on the NTS as CCGT demand profiles tend to coincide with the daily demand from Distribution Networks. Our analysis shows this has the potential to increase further if fluctuations in renewable generation continue to increase and coincide with the start or end of the daily gas system stock swing.
- In order to model the impact we have had to make assumptions about the power market, demand and supply within-day profiling.
- We have looked at CCGT within-day demand in isolation and in combination with supply profiling to assess the impact on NTS operability and capability.
- Our initial analysis indicates no significant constraints as a result of CCGT within-day demand and flat supply. However when moderate or high levels of supply profiling are applied constraints are encountered, affecting our ability to meet entry and exit pressure obligations.
- Further work is required to look at more within-day variables in combination.

Next steps



Any Questions/ Feedback

How does it fit in with our other SO publications?



2016 Future Energy Scenarios

Prosperity

+

-

Consumer Power

is a market-driven world, with limited government intervention. High levels of prosperity allow for high investment and innovation. New technologies are prevalent and focus on the desires of consumers over and above reducing greenhouse gas emissions.

Gone Green

is a world where policy interventions and innovation are both ambitious and effective in reducing greenhouse gas emissions. The focus on long-term environmental goals, high levels of prosperity and advanced European harmonisation ensure that the 2050 carbon reduction target is achieved.

No Progression

is a world where business as usual activities prevail. Society is focused on the short term, concentrating on affordability above green ambition. Traditional sources of gas and electricity continue to dominate, with little innovation altering how energy is used.

Slow Progression

a world where economic conditions limit society's ability to transition as quickly as desired to a renewable, low carbon world. Choices for residential consumers and businesses are restricted, yet a range of new technologies and policies develop. This results in some progress towards decarbonisation but at a slower pace than society would like.

Green ambition

-

+

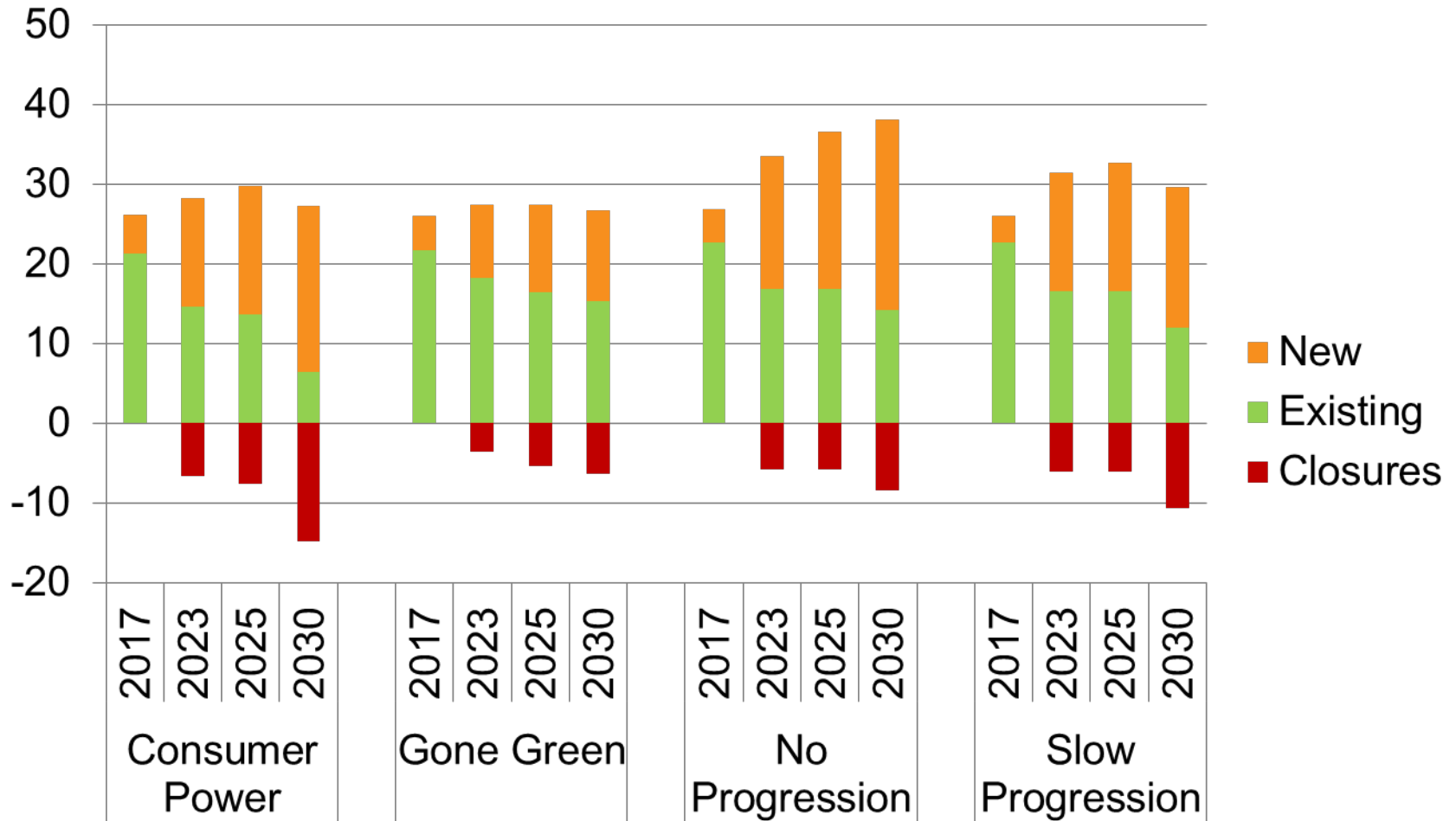
2016 Future Energy Scenarios: 2030 statistics

Prosperity

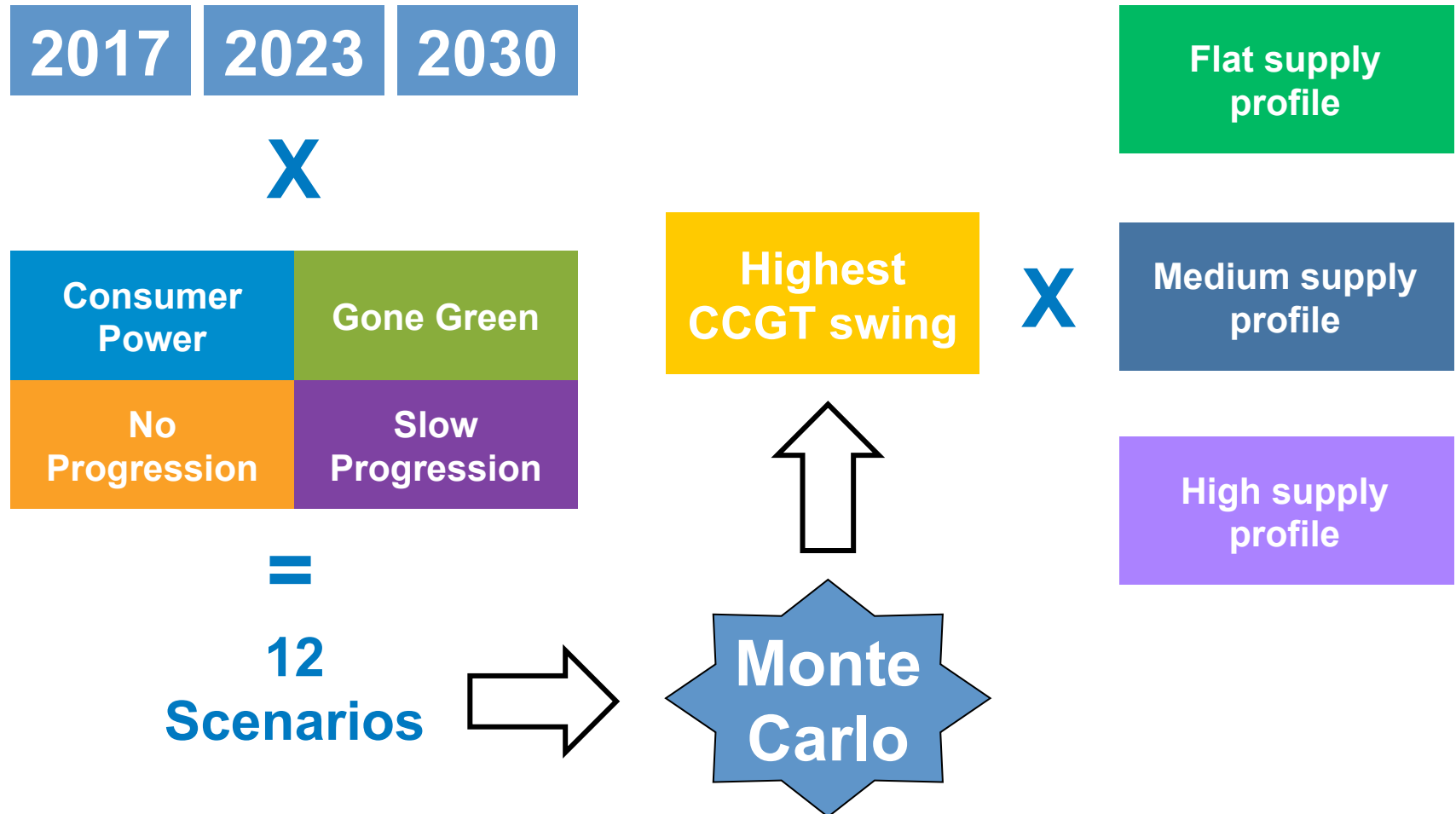
+	Consumer Power Gas demand 746 Electricity demand 331 Generation installed 157 - Of which gas 23% - Of which renewable 50%	Gone Green Gas demand 603 Electricity demand 346 Generation installed 164 - Of which gas 18% - Of which renewable 55%
-	No Progression Gas demand 808 Electricity demand 322 Generation installed 113 - Of which gas 40% - Of which renewable 45%	Slow Progression Gas demand 633 Electricity demand 318 Generation installed 131 - Of which gas 26% - Of which renewable 55%

- **Green ambition** +

CCGT assumptions



Methodology



2016 GFOP flexibility analysis

Modelling	Demand	Supply	Asset
<p>Aims of the analysis were to understand the impact increasing volumes and volatility of CCGT generation has on linepack changes and our obligation to meet assured pressures. Demonstrate the direction of our thinking and analysis and create a platform (the Gas Future Operability Planning document) in order to discuss this with you.</p>			
<ul style="list-style-type: none"> • 365 days • 2017, 2023, 2030 • All four FES (GG, SP, NP, CP) • Wind year 2007 • Cold weather variable • Flag – single highest CCGT swing day 	<ul style="list-style-type: none"> • Constant DN profile (level varies with FES scenario) • New power station locations based on TEC register (where possible) or based on sites of former coal-fired power stations near to the NTS. • Winters day chosen to simulate short period for solar generation. • Wind profile chosen to simulate windy day. • Merit order applied with CCGTs set as the flexibility generator of choice. • Nuclear, biomass, other renewables and coal are constant throughout the day. 	<p>All supplies based on FES:</p> <ul style="list-style-type: none"> • Flat supply • Start of day shortfall 22 mcm/d, supplies profiled to address shortfall by end of day • Start of day shortfall 44 mcm/d, supplies profiled to address shortfall by end of day 	<ul style="list-style-type: none"> • Full and intact network • Network as-is today plus known planned changes

Results Summary – ‘CCGT’ constraints only

Consumer Power

2017	2023	2030
Flat profile	Flat profile	Flat profile
Med profile	Med profile	Med profile
High profile	High profile	High profile

Gone Green

2017	2023	2030
Flat profile	Flat profile	Flat profile
Med profile	Med profile	Med profile
High profile	High profile	High profile

No Progression

2017	2023	2030
Flat profile	Flat profile	Flat profile
Med profile	Med profile	Med profile
High profile	High profile	High profile

Slow Progression

2017	2023	2030
Flat profile	Flat profile	Flat profile
Med profile	Med profile	Med profile
High profile	High profile	High profile

NIFR



Potential Options

- Potential options discussed on 5th September 2016:
 1. Do nothing
 2. Remove the NIFR rule
 3. Remove the NIFR rule on a trial basis
 4. Remove the NIFR rule and introduce additional incentives / penalties to encourage timely and accurate re-nominations
 5. Always apply the NIFR rule
 6. Relax the NIFR rule so that we accept faxes up to a particular point in the gas day (e.g. half way through)
 7. Keep the NIFR rule and change Gemini to allow GNCC “super user” access (i.e. revert to pre 1st October 2015 arrangements)
 8. Sub daily balancing

Option 7

- GNCC have the ability to change Gemini when a re-nomination fax which breaches the NIFR rule at an IP is received
- Have been investigating this option further with Xoserve
 - System changes
 - Costs
 - Timescales

NIFR Rule – Impact on Interconnectors

- The nominations matching rules at the interconnectors differ;
 - IUK and BBL the matching rules are such that the adjacent TSO nomination quantities prevail. Therefore, if the NIFR rule was removed IUK / BBL quantities would become the confirmed quantity.
 - At Moffat the matching rule is that the lesser nomination quantity prevails. Therefore, if the rule was removed on our side then due to the matching rule the confirmed quantity would be the lesser of the respective prevailing quantities
- Appreciate that GNI want to keep the NIFR rule and the solution we decide from GB needs to be mindful that NIFR is still required to be applied downstream of the Moffat interconnector
- Teleconference with the Irish to discuss this further

Mod 0600S: Amend obligation for the acceptance of EPDQD revisions made after D+5

Angharad Williams, National Grid NTS

3rd November 2016

Context

- UNC states no revisions to the EPDQD will be made after D+5
- National Grid NTS accepting late revisions to ensure accurate shipper allocations
- If late revisions no longer accepted, will have adverse impact on shipper allocations
- Therefore UNC needs to be aligned to reflect current practices
- Propose revised obligation, so EPDQD amendments can be accepted after D+5, but inclusion of new reporting obligation for late amendments

Solution

- **UNC Change:**
 - Amend E 1.4.2 of UNC, so EPDQD amendments submitted between D +5 & 10:00 on M+15 can continue to be accepted
 - But any post-D+5 amendment will be reported on the National Grid website
 - Report will contain following details: site name, relevant gas day, reason for late amendment
- **Non-UNC Change:**
 - Update generic NEA template
 - When existing contracts opened for amendments include EPDQD revisions
 - Write to all system entry points to inform them of change to code, and requirements upon them which will ensure acceptance of their late revisions

Issues Raised at Transmission Workgroup

- **Understanding the scale of the problem**
 - Data shows from 1st Jan 2016 **74** late revisions have been made
 - **42** were made by the same site
 - Average number of revisions per month is **8.2**
 - Higher due to one site making numerous late revisions – would otherwise average at **3.6**
 - Illustrates how reporting should be an effective incentive

Issues Raised at Transmission Workgroup

- **Bringing forward the final deadline for late revisions to 10:00 on M+15**
 - Should prevent unnecessary reworking for the Entry Allocation Statement submitted by the CVA
 - Aligns with National Grid Gemini processes
 - Therefore, we have modified the legal text to reflect this change

Issues Raised at Transmission Workgroup

- **Soften information provision requirement on sub-terminals to ensure late revisions are not rejected**
 - Reduces the incentive on system entry points to submit data by D+5
 - Additional requirement and responsibility upon National Grid
 - If late revision rejected, site will still have opportunity to resubmit up to 10:00 on M+15
 - Therefore, we have not included this suggested change