



Work process proposal adaptation FTR

UG Belgian Grid 09/09/2013 – Elia

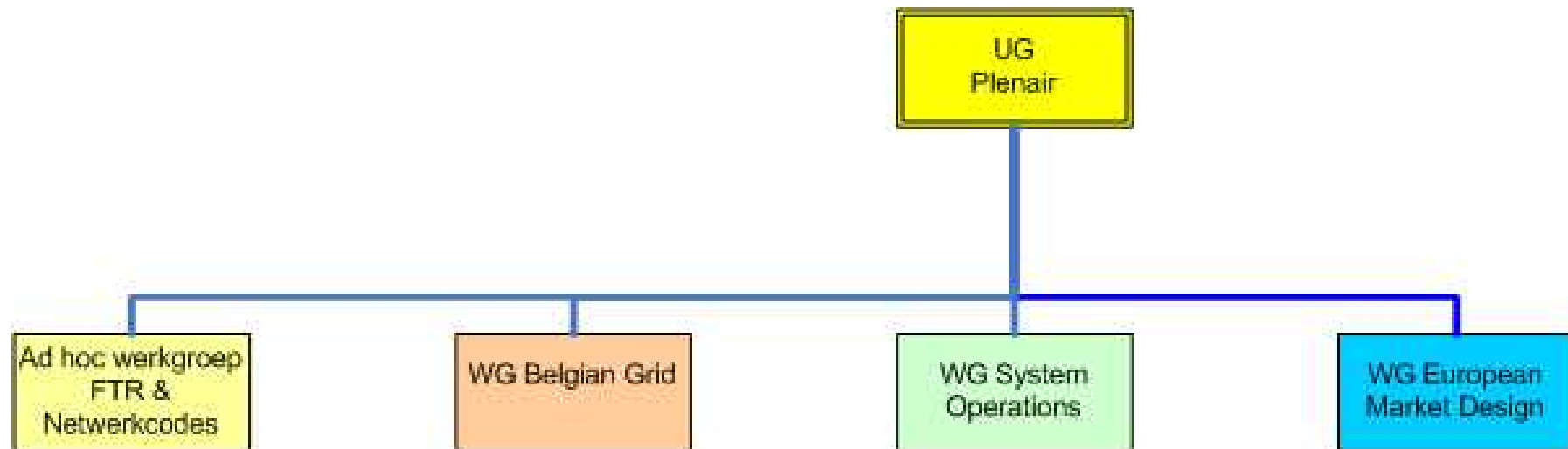


Doelstelling

- Actualiseren van het Federaal Technisch Reglement
- Integratie (daar waar nodig) van de ENTSO-E codes in het Federaal Technisch Reglement en, voor zover van toepassing, in de Gewestelijke Technische Reglementen
- Betrekken van netgebruikers van Elia

Hoe realiseren

- Creatie specifieke ad hoc werkgroep
 - rapporteert rechtstreeks aan de Users' Group Plenair
 - behandelt enkel de codes waarvan het "Comitology process" is opgestart
- Oprichten subgroepen binnen de ad hoc werkgroep
 - Bespreken / uitwerken specifieke codes/artikels



UG Belgrid: te behandelen codes RfG & DCC

Topic for NC on RfG	Deadline ENSTO-e	Comment
Comitology - 1 st vote in Electricity Cross-Border Committee	Oct 2013	Probably after 15/10 depending of outcome of 16/09 Meeting
National specification on non-exhaustive requirements	Mid-2015	
NC RfG becomes applicable	Mid-2017	
DCC: same timing as for the NC RfG		EC has not yet started !

Vertrekbasis:

- ENTSO-e codes: wettelijke documenten die niet gewijzigd kunnen worden

Latitude of the Network Codes



Prescriptive requirements

- The Network Code lays down requirements and specific parameters
- ***E.g. frequency disconnection***

Framework requirements

- The Network Code gives a coherent approach to formulate requirements
- Avoids divergence of requirements throughout Europe
- Specific setting of parameters based on a given legal framework, e.g. NRA approval, consultation, in mutual agreement, other Network Codes, ...
- ***E.g. reactive power provision***

Principle requirements

- High level requirement on functionality
- Specific implementation prescribed by other agreements, national legislation, Network Codes, ...
- ***E.g. information exchange***

Deviations from existing requirements

The European Network Code will evidently show deviations from existing grid codes

Deviation	Impact for most countries	Impact for Belgium
Number of requirements	Modest for most countries	Additional items
Strictness and range of requirements	Modest for most countries	Ranges to be defined
Units affected by the requirements	Harmonization of requirements to smaller units (also distribution level)	Large impact for DSOs! Impact netusers
Compliance procedures and tests	Intensity increases	New

Translation of the Framework Guidelines



in the Network Codes: « cross-border » network issues

- EC Regulation 714/2009 Article 8 (7) defines that “the network codes shall be developed for cross-border network issues and market integration issues and shall be without prejudice to the Member States’ right to establish national network codes which do not affect cross-border trade”
- The term “cross-border network issue” itself is not defined by this EC Regulation.

ENTSO-e position in Network Codes

- *All requirements that contribute to maintaining, preserving and restoring system security in order to facilitate proper functioning of the internal electricity market shall be regarded as “cross-border network issues”*

Translation of the Framework Guidelines in the Network Codes: « cross-border » network issues - example



Why are even small domestic units considered?

- One 5kW PV panel has negligible impact on a synchronous area level.
- What if all units respond similarly to a given stimulus? E.g. disconnection on a sunny day of 200.000 units of 5kW at a frequency rise of 50.2Hz results in a sudden production loss of 1000MW

How can a voltage problem be a cross-border issue?

- A frequency deviation is measured system wide.
- A voltage dip/rise could be a local issue, which can be locally resolved.
- A voltage dip/rise could occur system wide, resulting in a voltage collapse if no coherent action is taken.

Extract from the NC:

“The Relevant Network Operator shall have the right to define while respecting the provisions of Article “ ... 4(3) for RfG and ...9(3) for DCC

- Where reference is made to this paragraph (4(3) or 9(3)), the determination of the terms and conditions for connection and access to networks or the methodologies to establish them shall be set **in accordance with the rules of national law** and with the principles of transparency, proportionality and non-discrimination

Eerste analyse RfG Code

- FTR
 - Art 61 – 78: grote impact vanwege RfG code
 - Vermoedelijk herschrijven
- Opdeling volgens RfG code
 - General requirements
 - Synchronous requirements
 - Onshore requirements
 - Offshore requirements

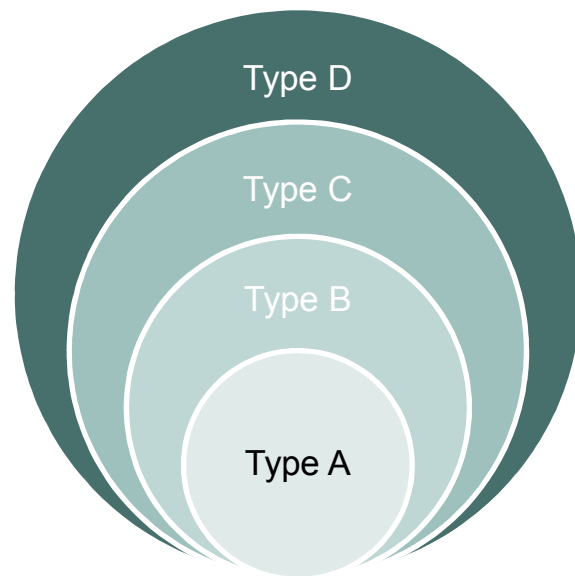
- **Per artikel is nagaan**

- Is de waarde opgelegd of kan TSO deze vastleggen
- Is het artikel verplicht van toepassing of wordt dit bepaald door TSO
- Op welke type is het van toepassing (A, B, C, D)

Article	Paragraph	Subparagraph	Title	Requirement type	Type A	Type B	Type C	Type D	Mandatory/Non Mandatory
8	1	a	FREQUENCY RANGES	Frequency stability	X	X	X	X	Non-Mandatory values
8	1	c	LIMITED FREQUENCY SENSITIVE MODE (OVERFREQUENCY)	Frequency stability	X	X	X	X	Non-Mandatory values
8	1	b	RATE OF CHANGE OF FREQUENCY WITH TANGENT CAPABILITY	Frequency stability	X	X	X	X	Non-Mandatory values
8	1	f	REMOTE SWITCH ON/OFF	Frequency stability	X	X	/	/	Mandatory values with Non - Mandatory implementation
8	1	g	CAPABILITY OF RECONNECTION AFTER AN INCIDENTAL DISCONNECTION DUE TO A NETWORK DISTURBANCE	System restoration	X	X	X	/	Non-Mandatory values
9	5	a	CONTROL SCHEMES AND SETTINGS	General system management	/	X	X	X	Mandatory
9	5	d	INFORMATION EXCHANGE	General system management	/	X	X	X	Mandatory values with Non - Mandatory implementation

Types in RfG

- Generator capabilities are formulated from a system performance perspective, independent from technology
- Need to be able to cope with evolutions in generation mix
- Significance is regarded per requirement



Draft application in Belgium



Types	ENTSO-e latitude	Existing Synergrid Threshold	Existing RTF/TFR	Draft proposal
Type A	PoC < 110 kV & Maximum Capacity ≥ 800 W	5kVA, 10kVA, 400kVA (Scc, $\cos(\phi) > 0.95$)	/	$800W \leq P_{nom} < 1MW$
Type B	PoC < 110 kV & Maximum Capacity ≥ 1 MW	1MVA (Scc, Q)	Can be TSO connected from 15MVA and must be from 25MW	$1MW \leq P_{nom} < 25MW$
Type C	PoC < 110 kV & Maximum Capacity ≥ 50 MW	/	25MW Voltage control	$25MW \leq P_{nom} < 75MW$
Type D	PoC ≥ 110 kV OR Maximum Capacity ≥ 75 MW	/	/	$P_{nom} \geq 75MW$ and remove PoC > 110kV (derogation)

(FTR Art. 62) Frequency range: “Ability to stay connected”



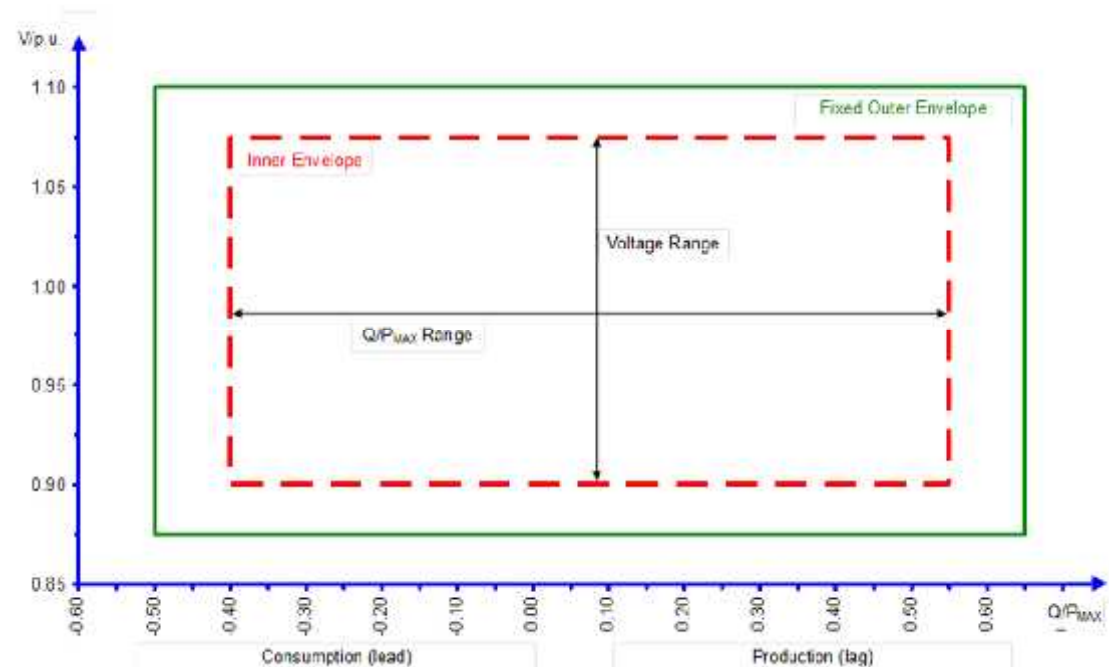
Frequency Range	Time period for operation
47.5 Hz – 48.5 Hz	To be decided by each TSO, but not less than 30 minutes
48.5 Hz – 49.0 Hz	To be decided by each TSO, but not less than the period for 47.5 Hz – 48.5 Hz
49.0 Hz – 51.0 Hz	Unlimited
51.0 Hz – 51.5 Hz	30 minutes

(FTR art. 68-74) Reactive power capability

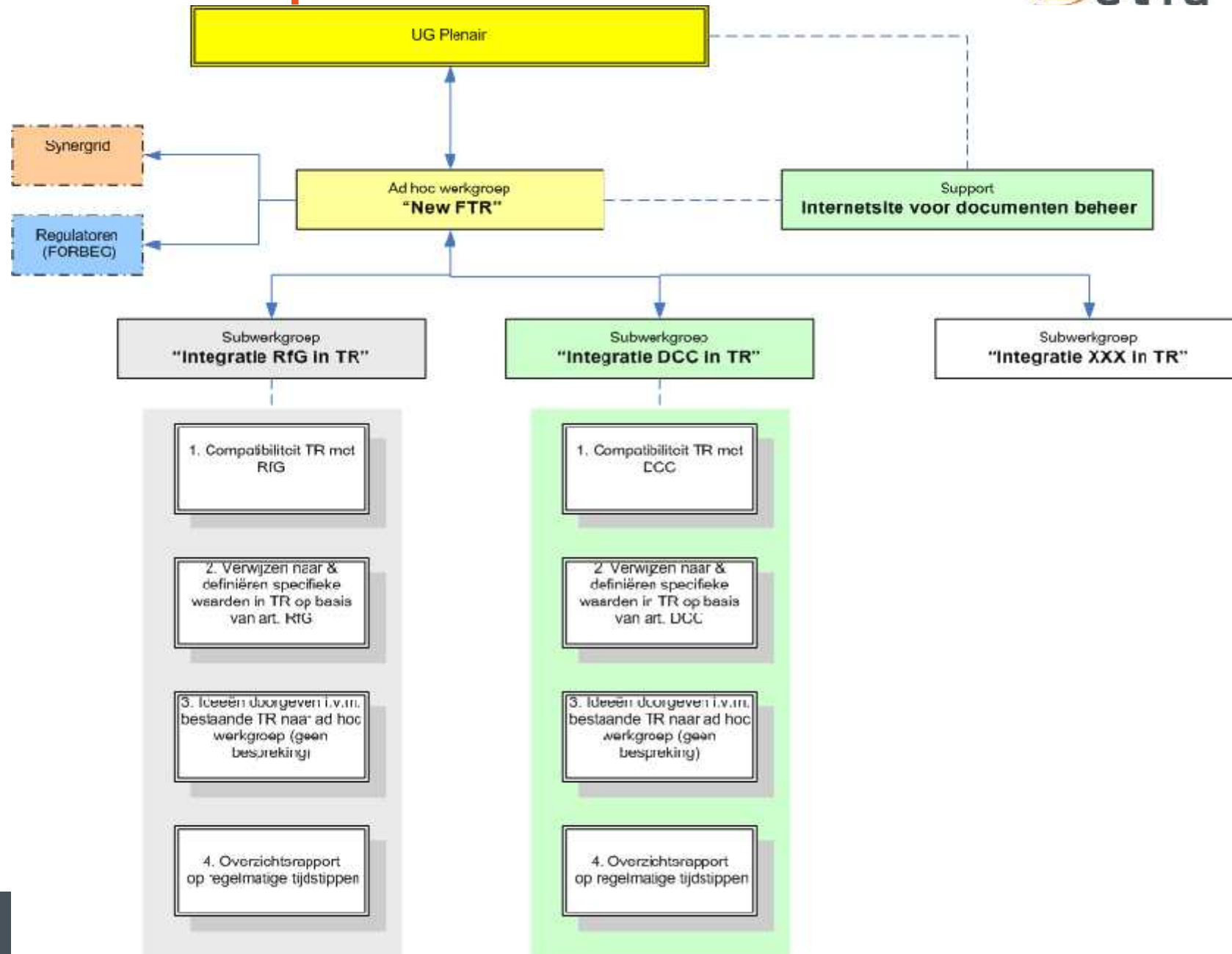
For Type C units (> 50 MW)

At Max Power:

- Network Operator defines U-Q/Pmax shape within **red envelope**
- **Red envelope** can be moved within boundaries
- **Green outer boundary** is based on all relevant grid codes in Europe.



Concrete aanpak



Planning



- RfG
 - Start: november 2013? begin 2014?
 - Einde: september 2014

- Stakeholders
 - Elia
 - DNBs
 - Netgebruikers
 - FOD economie+ Regulators, Synergrid, cabinet

- DCC
 - Afhankelijk comitology proces