TC8X WG03

Requirements for Distributed Generators - System aspects

ENTSO-E user group meeting on NC RfG

22 november 2012

Wouter Vancoetsem, Gunnar Kaestle

- Designated as a European Standards Organization by the European Commission (just like CEN and ETSI)
- CENELEC is the European Committee for Electrotechnical Standardization and is responsible for standardization in the **electrotechnical engineering** field. CENELEC prepares voluntary standards, which help facilitate trade between countries, create new markets, cut compliance costs and support the development of a Single European Market.
- Elaborates normative documents: European Standards (ENs), Technical Specifications, etc.
- process is a transparent, consensus-based
- full commitment of CENELEC members to implement ENs nationally

http://www.cenelec.eu

LABORELEC ©

WG03 Key Points

- **Documents**

prEN 50438 (LV microgenerators <16A)

- Scope overlaps with Type A
- Standard since 2007 - Maintenance cycle running
- Actually a Committee Draft (CD) is circulating
  Deadline for comments from NCs : 11 Jan 2013
- WG Meeting to deal with comments 21-22 Feb 2013

prTS 50549-1 (non-micro in LV) and -2 (MV)

- Scope overlaps with Type A, Type B (and Type C)
- Ed1
- Committee Draft (CD) ready by end of 2012

Frequency related

Voltage related

Protection system

PQ

Information exchange

Single fault safety

Priority ranking

LABORELEC ©

Considering ENTSO-E NC RfG

NC RfG Para.	Gen Scale	Gen Type	UNIT	Topic	Description	EN 50438	TS 50549-1	TS 50549-2
Art 03 6)	typeA typeB	All	PGM			LV <16A	LV connected (could also for small MV connected (e.g. upto 100kVA)	MV (<36kV) connected (small ones can be -1)
Art 03 6)h)	typeA typeB	ALL CHP	PGM					
Art 08 1)a)	typeA typeB	All	PGM	Frequency stability	Frequency ranges		X	X
Art 08 1)a)3)	typeA typeB	ALL		Frequency stability	Protection - f	X	X	X
Art 08 1)b)	typeA typeB	All	PGM	Frequency stability	ROCOF		X	X
Art 08 1)c)	typeA typeB	All	PGM	Frequency stability	Active Power-Frequency responce	X	X	X
Art 08 1)d)-e)	typeA typeB	All	PGM	Frequency stability	Power-frequency capability (max power reduction)		X	X
Art 08 1)f)	typeA typeB	ALL		Frequency stability	Remote power management		X	X
Art 08 1)g)	typeA typeB	All	PGM	Frequency stability	Automatic Reconnection	X	X	X
Art 09 2)a)	typeB	ALL	PGM	Frequency stability	Remote power managment		X	X
Art 09 3)a)1)-2)	typeB	All	PGM	Robustness	Fault ride through		X	X
Art 09 3)a)3)	typeB	All	PGM	Robustness	Fault ride through			
Art 09 3)a)4)	typeB	ALL	PGM	Robustness	Fault ride through			
Art 09 3)a)5)	typeB	ALL	PGM	Robustness	Fault ride through			
Art 09 3)a)6)	typeB	All	PGM	Robustness	Undervoltage protection		X	X
Art 09 3)a)7)	typeB	All	PGM	Robustness	Fault ride through			
Art 09 4)	typeB	All	PGM	System restoration	capability of reconnection	X	X	X
Art 09 5)a)	typeB	All	PGM	System management	Control scheme		X	X
Art 09 5)b)	typeB	ALL	PGM	System management	Protection scheme		X	X
Art 09 5)c)	typeB	ALL	PGM	System management	Protection and control		X	X
Art 09 5)d)	typeB	All	PGF	Information exchange	Information exchange		X	X

LABORELEC ©

Considering ENTSO-E NC RfG

NC RfG Para.	Gen Scale	Gen Type	UNIT	Topic	Description		EN 50438	TS 50549-1	TS 50549-2
Art 12 3)a)	typeB	Synchr	PGM	Robustness	Active Power recovery				
Art 12 2)a)	typeB	Synchr	PGM	Voltage stability	Reactive power		X	X	X
Art 12 2)b)	typeB	Synchr	PGM	Voltage stability	voltage control system				
Art 15 3)a)	typeB	PPM (not synchr)	PPM	Robustness	Active Power recovery			X	X
Art15 2)a)	typeB	PPM (not synchr)	PPM	Voltage stability	Reactive power		X	X	X
Art15 2)b)	typeB	PPM (not synchr)	PPM or GU	Voltage stability	Fast Reactive Current injection (dynamic voltage support)			X	X
Art15 2)c)	typeB	PPM (not synchr)	PPM or GU	Voltage stability	Fast Reactive Current injection (dynamic voltage support)				
Not ENTSO-E				Frequency stability	Active Power-Frequency response with underfrequency				X
Not ENTSO-E				Voltage stability	High voltage ride through			X	X
Not ENTSO-E				Voltage stability	Reactive power			X	X
Not ENTSO-E				Voltage stability	Short circuit currents			X	X
Not ENTSO-E				Voltage stability	Voltage ranges			X	X
Not ENTSO-E				Voltage stability	Voltage support by Active energy			X	X
Not ENTSO-E				Robustness	automatic reconnection			X	X
Not ENTSO-E				Robustness	Fast reclosures			X	X
Not ENTSO-E				System management	island detection			X	X
Not ENTSO-E				System management	Other protections		X	X	X
Not ENTSO-E				System management	protection relay		X	X	X
Not ENTSO-E				Compatibility	EMC and PQ		X	X	X

LABORELEC ©

Decisions to be taken by TC8X

- Review work program WG03
- How to deal with conformity testing

LABORELEC ©

You are welcome to join the group, especially TSOs and experts on rotating MV machinery.

CENELEC representatives in ENTSO-E User Group on RfG

Wouter.Vancoetsem@laborelec.com
Kaestle@IEE.TU-Clausthal.de

LABORELEC ©