

TC8X WG03

Current state of work on the Standards

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PRESENTED TO 34TH GRID CONNECTION EUROPEAN STAKEHOLDER
COMMITTEE MEETING

AGENDA

- 50549 Family Standard current status
- New Project: EN 50549-10 ED2
- New Project CLC/prTS 50744-1 (former prTS 50549-20)
- New Projects

Current status of EN 50549-1 Family Standard

| | | |
|-------------------------|--|-------------------------|
| EN 50549-10:2022 | Requirements for generating plants to be connected in parallel with distribution networks - Part 10: Tests for conformity assessment of generating units | Published 2022-10-28 |
| EN 50549-1:2019/A1:2023 | Requirements for generating plants to be connected in parallel with distribution networks - Part 1: Connection to a LV distribution network - Generating plants up to and including Type B | Published 2023-10-27 |
| EN 50549-2:2019/A1:2023 | Requirements for generating plants to be connected in parallel with distribution networks - Part 2: Connection to a MV distribution network - Generating plants up to and including Type B | Published 2023-10-27 |

New Project prEN 50549-10 ED2

Requirements for generating plants to be connected in parallel with distribution networks - Part 10: Tests for conformity assessment of generating units

- Published in October 2022.
- Large number of comments received on the public enquiry were not integrated in the available publication
- Development of ED2 to include these comments has been decided by TC8X on Nov 24th.
 - The technical discussion is already very far. First draft for internal commenting completed, more than 170 pages

New Project prEN 50549-10 ED2

| Phase | Realized/Expected |
|--|--|
| Proposal of WI for approval | 2023-10-12 |
| Decision on WI Proposal | 2023-12-06 |
| End of drafting & circulation of 1st working doc | 2024-04-17 expected 2024-05-23 start. End of internal commenting August 20°. More than 170 pages |
| Acceptance of ENQ draft | 2024-12-30 |
| Submission to Enquiry | 2025-03-30 |
| Closure of Enquiry | 2025-05-30 |
| Finalization and acceptance of draft for FV | 2025-10-30 |
| Submission to Formal Vote | 2026-01-15 |
| Closure of Formal Vote | 2026-02-15 |
| Finalization-Definitive text available | 2026-04-30 |
| Publication | 2026-08-30 |

New timeline to be discussed by TC8X at the next plenary meeting !

New Project CLC/prTS 50744-1 (former prTS 50549-20)

NWIP on the TS agreed by CENELEC Technical Board (BT)

New official denomination of the project:

CLC/prTS 50744-1 Electrical characteristics of grid-forming generating and storage units to be connected in parallel with electrical networks - definitions and tests

The original title of the 50549 series is “Requirements for generating plants to be connected in parallel with distribution networks”

The original title of the 50549-20 was “Requirements for generating plants to be connected in parallel with electrical networks”

Therefore two mistakes were present as:

- the numbering as 50549-20 was not correct as it was not belonging to the same series;
- the scope of the original work was already not limited to distribution grids.

New Project CLC/prTS 50744-1 (former prTS 50549-20)

WG03 agreed to keep the scope and just change the numbering of the TS and additionally to modify the title to make the difference to 50549-series clearer.

The project is aimed to:

- define parameters that are representing the electrical characteristics of grid-forming
- set suitable compliance assessment procedure to determine these electrical characteristics

New Project CLC/prTS 50744-1 (former prTS 50549-20)

- The project covers the behavior of GFCs in normal operational range including:
 - voltage source behavior
 - provision of inertial response
 - power quality
 - controller stability/controller interactions

- It covers also the behavior of GFCs during:
 - grid-faults and other events resulting in reaching limitations of the converter (overload situations/limitations)

New Project CLC/prTS 50744-1 (former prTS 50549-20)

- The TS is aligned with 50549 family Standard, despite the different numbering
- This TS does not provide:
 - specific requirements on parameter values such as:
 - inertia,
 - impedance
 - etc,

these will be defined according to TG GFC outputs.

To assure the coordination between the prTS 50744-1 and the outcomes of ENTSo-E TG-GFC, WG03 experts will participate to TG-GFC activity.

New Project CLC/prTS 50744-1 (former prTS 50549-20)

TF organization and activity:

- Regular online meeting ones a month for the whole TF (**12 Meetings**)
- Work split in more topics dealt independently from dedicated subgroups:
 - Voltage Source behaviour (**6 Meetings**)
 - Support of Power Quality (**6 Meetings**)
 - Inertial response (**24 Meetings**)
 - Fault operation(**19 Meetings**)
 - Controller interaction (**11 Meetings**)
 - General (**3 Meetings**)

Total: 81 web meetings at 2024-06-12 !

Recruitment of further experts still on course. At present presence of:

- Manufacturers (7, Wind, PV, Storage, HVDC, CHP),
- Research/Test Labs (6),
- Association (1),
- DSO (2) and TSO (2)

from 5 Countries: **Germany, Spain, Italy, Denmark, Finland**

CLC/prTS 50744-1 (former prTS 50549-20)

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|--|---|
| Proposal of WI for approval | 2023-10-12 |
| Decision on WI Proposal | 2023-12-06 |
| End of drafting & circulation of 1st working doc | 2024-04-18 expected 2024-11-30 new schedule Internal commenting on 1st draft already started, end by June 25th |
| Acceptance of ENQ draft | 2024-10-18 expected 2025-05-30 new schedule |
| Submission to Enquiry | 2025-02-03 expected 2025-09-30 new schedule |
| Closure of Enquiry | 2025-04-28 expected 2025-11-30 new schedule |
| Publication | 2025-10-28 expected 2026-05-30 new schedule |

New timeline to be discussed by TC8X at the next plenary meeting !

New Projects on dispatchable loads

- WG 03 new title (April 2023): Requirements for connection of generators and dispatchable loads to distribution networks
- NWIP on a TS on Self-Regulation of Dispatchable Loads
 - Introduced in view of DCC 2.0 which foresees stabilising requirements for specific loads
 - Will be based on an existing IEC TS 62898-3-3 (Self-regulation of dispatchable loads) document focused on microGrids, but modified according to the needs of the European framework (revision of the scope, alignment to the EN 50549 family standards, enhancement of the testing chapter according to EN 50549-10, etc)
 - Aimed to define behaviors of dispatchable loads to stabilize AC electricity networks frequency and voltage (by autonomous reaction on variations of frequency and voltage with a change in active power consumption).

New Projects on dispatchable loads

- Voluntary quality standard recommended for noncritical loads (not significantly affected by power modulation), without precise definition of which loads shall participate in this approach
- A new work item will be officially started by TC8X after and the call for experts (withing June 2024 - 1/2 half July 2024). Activities will start once the project team will be defined

New Projects on conformity assessment of larger generating units (Type C and D)

- NWIP on Tests for conformity assessment of larger generating units (Type C and D) including grid support functions of RfG to be presented ASAP for voting
- Currently -10 only covers grid support functions as required for Type A and B generating units
 - Functions required from Type C and D units need further test definition
 - Relationship to existing 61400 Series for wind turbines must be handled
 - NWIP is prepared by a TC8X member and will be discussed then.

Conclusion

Thank you for your attention.