

Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (Text with EEA relevance)

TITLE IV

COMPLIANCE

CHAPTER 6

Compliance simulations for power park modules

Article 54

Compliance simulations for type B power park modules

1 Type B power park modules are subject to the compliance simulations in paragraphs 2 to 5. Instead of all or part of those simulations, the power-generating facility owner may use equipment certificates issued by an authorised certifier, which must be provided to the relevant system operator.

2 With regard to the LFSM-O response simulation the following requirements shall apply:

- a the power park module's capability to modulate active power at high frequency in accordance with Article 13(2) shall be demonstrated;
- b the simulation shall be carried out by means of high frequency steps and ramps reaching minimum regulating level, taking into account the droop settings and the deadband;
- c the simulation shall be deemed successful in the event that:
 - (i) the simulation model of the power park module is validated against the compliance test for LFSM-O response set out in Article 47(3); and
 - (ii) compliance with the requirement laid down in Article 13(2) is demonstrated.

3 With regard to the fast fault current injection simulation the following requirements shall apply:

- a the power park module's capability to provide fast fault current injection in accordance with the conditions set out in point (b) of Article 20(2) shall be demonstrated;
- b the simulation shall be deemed successful if compliance with the requirement laid down in point (b) of Article 20(2) is demonstrated.

4 With regard to the fault-ride-through simulation capability of type B power park modules, the following requirements shall apply:

- a the power park module's capability to ride through faults in accordance with the conditions set out in point (a) of Article 14(3) shall be demonstrated by simulation;
- b the simulation shall be deemed successful if compliance with the requirement laid down in point (a) of Article 14(3) is demonstrated.

5 The following requirements with regard to the post fault active power recovery simulation shall apply:

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- a the power park module's capability to provide post fault active power recovery in accordance with the conditions set out in Article 20(3) shall be demonstrated;
- b the simulation shall be deemed successful if compliance with the requirement laid down in Article 20(3) is demonstrated.

Article 55

Compliance simulations for type C power park modules

1 In addition to the compliance simulations for type B power park modules set out in Article 54, type C power park modules are subject to the compliance simulations set out in paragraphs 2 to 7. Instead of all or part of those simulations, the power-generating facility owner may use equipment certificates issued by an authorised certifier, which must be provided to the relevant system operator.

2 With regard to the LFSM-U response simulation the following requirements shall apply:

- a the power park module's capability to modulate active power at low frequencies in accordance with point (c) of Article 15(2) shall be demonstrated;
- b the simulation shall be carried out by simulating low frequency steps and ramps reaching maximum capacity, taking into account the droop settings and the deadband;
- c the simulation shall be deemed successful in the event that:
 - (i) the simulation model of the power park module is validated against the compliance test for LFSM-U response set out in Article 48(3); and
 - (ii) compliance with the requirement laid down in point (c) of Article 15(2) is demonstrated.

3 With regard to the FSM response simulation the following requirements shall apply:

- a the power park module's capability to modulate active power over the full frequency range as referred to in point (d) of Article 15(2) shall be demonstrated;
- b the simulation shall be carried out by simulating frequency steps and ramps big enough to trigger the whole active power frequency response range, taking into account the droop settings and the deadband;
- c the simulation shall be deemed successful in the event that:
 - (i) the simulation model of the power park module is validated against the compliance test for FSM response set out in Article 48(4); and
 - (ii) compliance with the requirement laid down in point (d) of Article 15(2) is demonstrated.

4 With regard to the island operation simulation, the following requirements shall apply:

- a the power park module's performance during island operation in accordance with the conditions set out in point (b) of Article 15(5) shall be demonstrated;
- b the simulation shall be deemed successful in the event that the power park module reduces or increases the active power output from its previous operating point to any new operating point, within the P-Q-capability diagram and within the limits set out in point (b) of Article 15(5), without disconnection of the power park module from the island due to over- or underfrequency.

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5 With regard to the simulation of the capability of providing synthetic inertia, the following requirements shall apply:

- a the model of the power park module's capability of providing synthetic inertia to a low frequency event as set out in point (a) of Article 21(2) shall be demonstrated;
- b the simulation shall be deemed successful if the model demonstrates that it complies with the conditions set out in Article 21(2).

6 With regard to the reactive power capability simulation, the following requirements shall apply:

- a the power park module shall demonstrate that it can provide leading and lagging reactive power capability as set out in points (b) and (c) of Article 21(3);
- b the simulation shall be deemed successful if the following conditions are cumulatively fulfilled:
 - (i) the simulation model of the power park module is validated against the compliance tests for reactive power capability set out in paragraph 6 of Article 48; and
 - (ii) compliance with the requirements laid down in points (b) and (c) of Article 21(3) is demonstrated.

7 With regard to the power oscillations damping control simulation, the following requirements shall apply:

- a the model of the power park module shall demonstrate that it can provide active power oscillations damping capability accordance with point (f) of Article 21(3);
- b the simulation shall be deemed successful in the event that the model demonstrates compliance with the conditions described in point (f) of Article 21(3).

Article 56

Compliance simulations for type D power park modules

1 In addition to the compliance simulations for type B and C power park modules set out in Articles 54 and 55, except for the fault-ride-through capability of type B power park modules referred to in Article 54(4), type D power park modules are subject to the fault-ride-through capability of power park modules compliance simulation.

2 Instead of all or part of the simulations mentioned in paragraph 1, the power-generating facility owner may use equipment certificates issued by an authorised certifier, which must be provided to the relevant system operator.

3 The model of the power park module shall demonstrate that it is suitable for simulating the fault-ride-through capability in accordance with point (a) of Article 16(3).

4 The simulation shall be deemed successful if the model demonstrates compliance with the conditions set out in point (a) of Article 16(3).

Changes to legislation:

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Changes and effects yet to be applied to :

- Regulation revoked by [S.I. 2019/533 reg. 5\(a\)](#) (This amendment not applied to legislation.gov.uk. Reg. 5 revoked on the day before IP completion day by S.I. 2019/1104, regs. 1(2), 2)

Changes and effects yet to be applied to the whole legislation item and associated provisions

- Title 4 Ch. 8 omitted by [S.I. 2020/1006 Sch. 1 para. 28](#)
- Signature words omitted by [S.I. 2020/1006 Sch. 1 para. 41](#)
- Art. 2(1) word omitted by [S.I. 2020/1006 Sch. 1 para. 2\(3\)\(a\)\(i\)](#)
- Art. 2(1) words substituted by [S.I. 2020/1006 Sch. 1 para. 2\(3\)\(a\)\(ii\)](#)
- Art. 2(2) words omitted by [S.I. 2020/1006 Sch. 1 para. 2\(3\)\(b\)](#)
- Art. 2(46) words substituted by [S.I. 2020/1006 Sch. 1 para. 2\(3\)\(c\)](#)
- Art. 2(47) words inserted by [S.I. 2020/1006 Sch. 1 para. 2\(3\)\(d\)\(ii\)](#)
- Art. 2(47) words omitted by [S.I. 2020/1006 Sch. 1 para. 2\(3\)\(d\)\(i\)](#)
- Art. 2(66)-(69) inserted by [S.I. 2020/1006 Sch. 1 para. 2\(3\)\(e\)](#)
- Art. 3(2)(a) words substituted by [S.I. 2020/1006 Sch. 1 para. 3\(3\)](#)
- Art. 4(1)(a)(iii) word omitted by [S.I. 2020/1006 Sch. 1 para. 4\(2\)\(b\)\(i\)](#)
- Art. 4(1)(a)(iii) words omitted by [S.I. 2020/1006 Sch. 1 para. 4\(2\)\(b\)\(ii\)](#)
- Art. 4(1)(a)(ii) word omitted by [S.I. 2020/1006 Sch. 1 para. 4\(2\)\(a\)\(i\)](#)
- Art. 4(1)(a)(ii) words omitted by [S.I. 2020/1006 Sch. 1 para. 4\(2\)\(a\)\(ii\)](#)
- Art. 4(1)(b) words substituted by [S.I. 2020/1006 Sch. 1 para. 4\(2\)\(c\)](#)
- Art. 4(2)(b) words substituted by [S.I. 2020/1006 Sch. 1 para. 4\(3\)\(a\)\(i\)](#)
- Art. 4(2)(b) words substituted by [S.I. 2020/1006 Sch. 1 para. 4\(3\)\(a\)\(ii\)](#)
- Art. 4(2)(b) words substituted by [S.I. 2020/1006 Sch. 1 para. 4\(3\)\(a\)\(iii\)](#)
- Art. 4(4)(b) word omitted by [S.I. 2020/1006 Sch. 1 para. 4\(5\)\(a\)](#)
- Art. 4(4)(b) words omitted by [S.I. 2020/1006 Sch. 1 para. 4\(5\)\(b\)](#)
- Art. 5(2)(a) word substituted by [S.I. 2020/1006 Sch. 1 para. 5\(2\)\(a\)](#)
- Art. 6(4)(c) words substituted by [S.I. 2020/1006 Sch. 1 para. 6](#)
- Art. 7(3)(d) words omitted by [S.I. 2020/1006 Sch. 1 para. 7\(4\)\(b\)](#)
- Art. 7(3)(f) word substituted by [S.I. 2020/1006 Sch. 1 para. 7\(4\)\(c\)](#)
- Art. 13(2)(b) word omitted by [S.I. 2020/1006 Sch. 1 para. 13\(3\)\(a\)](#)
- Art. 13(2)(c) word substituted by [S.I. 2020/1006 Sch. 1 para. 13\(3\)\(b\)\(i\)](#)
- Art. 13(2)(c) word substituted by [S.I. 2020/1006 Sch. 1 para. 13\(3\)\(b\)\(ii\)](#)
- Art. 13(4)(b) word substituted by [S.I. 2020/1006 Sch. 1 para. 13\(4\)](#)
- Art. 15(2)(c)(i) word substituted by [S.I. 2020/1006 Sch. 1 para. 15\(2\)\(a\)\(i\)](#)
- Art. 15(2)(c)(i) word substituted by [S.I. 2020/1006 Sch. 1 para. 15\(2\)\(a\)\(ii\)](#)
- Art. 15(2)(d)(vii) word omitted by [S.I. 2020/1006 Sch. 1 para. 15\(2\)\(c\)\(i\)](#)
- Art. 15(2)(d)(vii) word omitted by [S.I. 2020/1006 Sch. 1 para. 15\(2\)\(c\)\(ii\)](#)
- Art. 15(5)(a)(i) words substituted by [S.I. 2020/1006 Sch. 1 para. 15\(3\)](#)
- Art. 15(6)(c)(i) words substituted by [S.I. 2020/1006 Sch. 1 para. 15\(4\)](#)
- Art. 16(2)(a)(v) omitted by [S.I. 2020/1006 Sch. 1 para. 16\(2\)\(b\)](#)
- Art. 16(2)(a)(iii) omitted by [S.I. 2020/1006 Sch. 1 para. 16\(2\)\(a\)](#)
- Art. 21(3)(d)(iii) word substituted by [S.I. 2020/1006 Sch. 1 para. 18\(e\)](#)
- Art. 21(3)(d)(ii) word substituted by [S.I. 2020/1006 Sch. 1 para. 18\(d\)\(aa\)](#)
- Art. 21(3)(d)(ii) word substituted by [S.I. 2020/1006 Sch. 1 para. 18\(d\)\(bb\)](#)
- Art. 21(3)(d)(ii) word substituted by [S.I. 2020/1006 Sch. 1 para. 18\(d\)\(cc\)](#)
- Art. 21(3)(d)(ii) word substituted by [S.I. 2020/1006 Sch. 1 para. 18\(d\)\(dd\)](#)
- Art. 21(3)(d)(vi) word substituted by [S.I. 2020/1006 Sch. 1 para. 18\(f\)](#)

- Art. 38(3)(b) words omitted by [S.I. 2020/1006 Sch. 1 para. 22\(2\)](#)
- Art. 39(2)(c) words substituted by [S.I. 2020/1006 Sch. 1 para. 23](#)
- Art. 43(2)(a) words substituted by [S.I. 2020/1006 Sch. 1 para. 25](#)
- Art. 48(7)(c)(ii) word substituted by [S.I. 2020/1006 Sch. 1 para. 26](#)
- Art. 53(2)(c)(ii) word substituted by [S.I. 2020/1006 Sch. 1 para. 27](#)
- Art. 66(2)(c) words substituted by [S.I. 2020/1006 Sch. 1 para. 35](#)