



energiavirasto
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Pvm / Datum / Date: 22.03.2023

Ratkaisija / Beslutsfattare / Decision-maker

Nimi / Namn / Name: Simo Nurmi

Pvm / Datum / Date: 22.03.2023

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Fingrid Oyj
PL 530
00101 Helsinki

Päätös Fingrid Oyj:n ehdotukseen taajuuden vakautusreservien lisäominaisuuksista

Asianosainen

Fingrid Oyj

Vireilletulo

27.6.2022

Ratkaisu

Energiavirasto vahvistaa Fingrid Oyj:n noudatettavaksi päätöksen liitteenä olevat taajuuden vakautusreservien lisäominaisuudet.

Fingrid Oyj:n tulee suorittaa menetelmän uudelleenarviointi kahden vuoden sisällä menetelmässä määritellystä voimaantulopäivämäärästä.

Päätös on voimassa toistaiseksi.

Päätöstä on noudatettava muutoksenhausta huolimatta.

Selostus asiasta

Fingrid Oyj (jatkossa myös Fingrid) toimitti Energiavirastolle 27.06.2022 komission asetus (EU) 2017/1485 sähkön siirtoverkon käyttöä koskevien suuntaviivojen (jäljempänä SO suuntaviivat) mukaisen taajuuden vakautusreservien lisäominaisuuksia koskevan ehdotuksen sekä taustadokumentin, joka sisälsi 6.5.2022-6.6.2022 pidetyn julkisen kuulemisen tulokset. Ehdotus sisälsi lisäominaisuusvaatimuksia taajuusohjatun häiriöreservin ylös- ja alassäädölle, sekä staattista että dynaamista häiriöreserviä koskien.

Energiavirasto toimitti SO suuntaviivojen artiklan 7 nojalla muutospyyntön Fingridille 21.12.2022. Muutospyyntö sisälsi pyynnön kuvata yleisellä tasolla menetelmän aiheuttamia vaikutuksia reservimarkkinalle sekä reservitoimittajien ja siirtoverkonhaltijoiden taloudellisiin kannustimiin, vähintään taustadokumentissa. Tarkemmin menetelmän osalta muutospyyntö sisälsi esimerkiksi kehotuksia parantaa luettavuutta, ja siten vähentää väärinymmärrysten mahdollisuutta, artiklojen 3(4), 3(5), 4(3), 4(4), 5(3), 6(3), 6(4) ja 7(3) osalta. Muutospyyntö sisälsi myös kehotuksen sisällyttää menetelmään määritelmä taajuusohjatulle reservimarkkinalle osallistuville yksiköille tai ryhmille (jatkossa myös FCR-toimijat), joiden toiminta perustuu energiavaraston hyödyntämiseen, joka on kapasiteetiltaan rajallinen. Määräajaksi muutospyyntöön vastaamiselle oli asetettu 21.2.2023.



Fingrid toimitti Energiavirastolle 3.2.2023 täydennetyt ehdotuksen taajuuden vakautusreservien lisäominaisuuksiksi.

Energiaviraston toimivalta

Euroopan parlamentin ja neuvoston direktiivin 2009/72/EY 35 artiklan mukaan kunkin jäsenvaltion on nimettävä yksi kansallinen sääntelyviranomaisen kansallisella tasolla.

Lain Energiavirastosta (870/2013) 1 §:n 2 momentin mukaan Energiavirasto hoitaa kansalliselle sääntelyviranomaiselle kuuluvat tehtävät, joista säädetään:

3) sähkön sisämarkkinoita koskevista yhteisistä säännöistä ja direktiivin 2003/54/EY kumoamisesta annetun Euroopan parlamentin ja neuvoston direktiivin 2009/72/EY, jäljempänä sähkömarkkinadirektiivi, nojalla annetuissa, suuntaviivoja koskevissa komission asetuksissa tai päätöksissä.

Asiaan liittyvä lainsäädäntö

Komission asetukset (EU) 2017/1485 sähkön siirtoverkon käyttöä koskevista suuntaviivoista (SO suuntaviivat)

SO suuntaviivojen 4 artiklan mukaan:

” 1. Tämän asetuksen tavoitteena on

- a) määrittää yhteiset käyttövarmuutta koskevat vaatimukset ja periaatteet;
- b) määrittää yhteiset yhteenliitetyn verkon käyttötoiminnan suunnittelun periaatteet;
- c) määrittää yhteiset taajuudensäätöprosessit ja -rakenteet;
- d) varmistaa olosuhteet, joissa käyttövarmuutta voidaan ylläpitää kaikkialla unionissa;
- e) varmistaa olosuhteet, joissa kaikkien synkronialueiden taajuuden laatutasoa voidaan ylläpitää kaikkialla unionissa;
- f) edistää verkon käyttöä ja käyttötoiminnan suunnittelua koskevaa koordinaointia;
- g) varmistaa siirtoverkon toimintaa koskevien tietojen läpinäkyvyys ja luotettavuus ja parantaa sitä;
- h) edistää unionin sähkönsiirtoverkon ja sähköalan tehokasta toimintaa ja kehittämistä.

2. Jäsenvaltioiden, toimivaltaisten viranomaisten ja verkonhaltijoiden on tätä asetusta soveltaessaan

- a) sovellettava suhteellisuuden ja syrjimättömyyden periaatteita;
- b) varmistettava avoimuus;



- c) sovellettava periaatetta, jonka mukaan suurin kokonaistehokkuus ja alhaisimmat kokonaiskustannukset optimoidaan kaikkien asianomaisten osapuolten kesken;
- d) varmistettava, että siirtoverkonhaltijat hyödyntävät, niin pitkälti kuin mahdollista, markkinapohjaisia mekanismeja verkon käyttövarmuuden ja stabiilisuuden varmistamiseksi;
- e) kunnioitettava paikalliselle siirtoverkonhaltijalle annettua vastuuta varmistaa käyttövarmuus, myös kansallisessa lainsäädännössä vaaditulla tavalla;
- f) kuultava asianomaisia jakeluverkonhaltijoita ja otettava huomioon niiden järjestelmään mahdollisesti kohdistuvat vaikutukset; ja
- g) otettava huomioon sovitut eurooppalaiset standardit ja tekniset spesifikaatiot.”

SO suuntaviivojen 6 artiklan mukaan:

” 7. Jos ehtoja ja edellytyksiä tai menetelmiä koskevan ehdotuksen hyväksyminen edellyttää useamman kuin yhden sääntelyviranomaisten päätöstä, toimivaltaisten sääntelyviranomaisten on kuultava toisiaan, tehtävä tiivistä yhteistyötä ja koordinoitava toimiaan sopimukseen pääsemiseksi. Jos virasto antaa lausunnon, toimivaltaisten sääntelyviranomaisten on otettava se huomioon. Sääntelyviranomaisten on tehtävä 2 ja 3 kohdan mukaisesti ehdotettuja ehtoja ja edellytyksiä tai menetelmiä koskevat päätökset kuuden kuukauden kuluessa siitä, kun sääntelyviranomaisen tai, soveltuviissa tapauksissa, viimeinen asianosainen sääntelyviranomaisen on vastaanottanut ehdot ja edellytykset tai menetelmät.

8. Jos sääntelyviranomaiset eivät ole päässeet sopimukseen 7 kohdassa tarkoitettussa määräajassa tai niiden yhteisestä pyynnöstä virasto tekee päätöksen ehtoja ja edellytyksiä tai menetelmiä koskevista ehdotuksista kuuden kuukauden kuluessa asetuksen (EY) N:o 713/2009 8 artiklan 1 kohdan mukaisesti.

”9. Jos ehtoja ja edellytyksiä tai menetelmiä koskevan ehdotuksen hyväksyminen edellyttää yhden nimetyn elimen päätöstä 4 kohdan mukaisesti, nimetyn elimen on tehtävä päätös kuuden kuukauden kuluessa ehtojen ja edellytysten tai menetelmien vastaanottamisesta.”

SO suuntaviivojen 7 artiklan mukaan:

” 1. Jos yksi tai useampi sääntelyviranomaisen vaatii 6 artiklan 2 ja 3 kohdan mukaisesti toimitettujen ehtojen ja edellytysten tai menetelmien muuttamista ennen hyväksymistä, asianomaisten siirtoverkonhaltijoiden on esitettävä hyväksyttäväksi ehdotus muutetuista ehdoista ja edellytyksistä tai menetelmistä kahden kuukauden kuluessa sääntelyviranomaisten vaatimuksen esittämisestä. Toimivaltaisten sääntelyviranomaisten on päätettävä muutetuista ehdoista ja edellytyksistä tai menetelmistä kahden kuukauden kuluessa niiden esittämisestä.”



SO suuntaviivojen 154 artiklan 2 kohdan mukaan:

”Synkronialueen kaikilla siirtoverkonhaltijoilla on oltava oikeus määritellä synkronialueen käyttösopimuksessa taajuuden vakautusreservien yhteiset lisäominaisuudet, joita tarvitaan käyttövarmuuden takaamiseksi synkronialueella, soveltaen asetuksen (EU) 2016/631 15 artiklan 2 kohdan d alakohdassa ja asetuksen (EU) 2016/1388 27 ja 28 artiklassa määritellyjä teknisiä parametreja ja alueita. Näissä taajuuden vakautusreservien yhteisissä lisäominaisuuksissa on otettava huomioon synkronialueen asennettu teho sekä sen kulutuksen ja tuotannon rakenne ja ajoittuminen. Siirtoverkonhaltijoiden on sovellettava lisäominaisuuksien käyttöönottoon siirtymäkautta, jota määriteltäessä on kuultava asianosaisia taajuuden vakautusreservien tarjoajia.”

Perustelut

SO suuntaviivojen mukaisesti Energiavirasto on tätä päätöstä valmisteltaessa tehnyt tiivistä yhteistyötä ja koordinoinut toimiaan muiden toimivaltaisten sääntelyviranomaisten kanssa. Energiaviraston päätös noudattaa toimivaltaisten sääntelyviranomaisten yhteisesti sopimaa linjaa, joka on esitetty tämän päätöksen liitteenä dokumentissa ”Approval by All Regulatory Authorities in the Nordic synchronous area on Amended Nordic synchronous area proposal for additional properties of the FCR in accordance with Article 154(2) of the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation”.

Siirtoverkonhaltijoiden ehdotus täytti kaikki menetelmälliset vaatimukset. Ehdotuksen mukaisesti sääntelyviranomaiset näkevät, että reservimarkkinan likviditeetin ja toisaalta järjestelmän käytön turvallisuuden takaamiseksi tarkentavien lisäominaisuuksien esittely on perusteltua. Taajuusohjatun häiriöreservin jakaminen dynaamiseen ja staattiseen taajuusohjattuun häiriöreserviin huomioi molempia seikkoja. Lisäksi menetelmään on lisätty määritelmä taajuuden vakautusreservejä tarjoavalle yksikölle tai taajuuden vakautusreservejä tarjoavalle ryhmälle, jonka energiavarasto rajoittaa sen kykyä tarjota taajuuden vakautusreservejä. Edellä mainituille on menetelmässä lisäksi esitetty useita lisävaatimuksia, jotka edelleen varmistavat kyseisten yksiköiden tai ryhmien mahdollisuutta osallistua markkinalle, mutta ylläpitävät riittävää järjestelmän käytöllistä hallittavuutta.

Menetelmän potentiaaliset kehittämisen tarpeet huomioiden, siirtoverkonhaltijoilla on velvollisuus suorittaa menetelmän uudelleenarviointi kahden vuoden sisällä menetelmässä määritellystä voimaantulopäivästä. Uudelleenarvioinnin perusteella siirtoverkonhaltijoiden odotetaan ehdottavan muutoksia menetelmään, jos se on arvioinnin perusteella tarpeellista.

Sääntelyviranomaisten pyytämä täydennetty ehdotus sisälsi määritelmän taajuusohjatulle reservimarkkinalle osallistuville yksiköille tai ryhmille, joiden toiminta perustuu energiavaraston hyödyntämiseen, joka on kapasiteetiltaan rajallinen. Selittävissä dokumentissa oli kuvailtu menetelmään johtavia syitä, sen vaikutuksia reservimarkkinalle sekä toimijoiden ja siirtoverkonhaltijoiden taloudellisiin kannustimiin. Menetelmän ymmärrettävyyttä oli parannettu sääntelyviranomaisten pyynnön mukaisesti.



Energiavirasto katsoo, että Fingridin 3.2.2023 toimittama täydennetty ehdotus täyttää Energiaviraston ja muiden sääntelyviranomaisten laatiman muutospyyntöön vaatimukset. Energiavirasto katsoo, että ehdotus mahdollistaa siirtoverkon käytön suuntaviivojen vaatimusten täyttämisen, on suuntaviivojen tavoitteiden mukainen ja siten hyväksyttävissä.

Sovelletut säännökset

Komission asetus (EU) 2017/1485 4 artikla, 6 artikla, 7 artikla, 154 artikla

Laki sähkö- ja maakaasumarkkinoiden valvonnasta (590/2013) 36 §, 38 §

Muutoksenhaku

Muutoksenhakua koskeva ohjeistus liitteenä.

Liitteet "Valitusosoitus markkinaoikeuteen"

"Approval by All Regulatory Authorities in the Nordic synchronous area on Amended Nordic synchronous area proposal for additional properties of the FCR in accordance with Article 154(2) of the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation", 8 March 2023

"Amended Nordic synchronous area methodology for additional properties of FCR in accordance with Article 154(2) of the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation", 3 February 2023

Jakelu Fingrid Oyj



VALITUSOSOITUS

Valitusoikeus hallintopäätöksestä

Energiaviraston antamaan hallintopäätökseen saa hakea muutosta valittamalla siten kuin laissa oikeudenkäynnistä hallintoasioissa (808/2019) säädetään. Valituskelpoisella hallintopäätöksellä tarkoitetaan päätöstä, jolla asia on ratkaistu tai jätetty tutkimatta.

Hallintopäätökseen saa hakea muutosta valittamalla se, johon päätös on kohdistettu tai jonka oikeuteen, velvollisuuteen tai etuun päätös välittömästi vaikuttaa ja se, jonka valitusoikeudesta laissa erikseen säädetään.

Valitusviranomainen

Valitusviranomainen Energiaviraston päätökseen on markkinaoikeus.

Valituksen tekeminen ja valitusaika

Valituksen saa tehdä sillä perusteella, että päätös on lainvastainen.

Valitus on tehtävä kirjallisesti 30 päivän kuluessa päätöksen tiedoksisaannista.

Jos tiedoksianto on toimitettu tavallisena tiedoksiantona postitse kirjeellä vastaanottajalle, katsotaan hänen saaneen asiasta tiedon seitsemäntenä päivänä kirjeen lähettämisestä, jollei muuta näytetä. Mikäli päätös annetaan hakijalle tiedoksi sähköisenä viestinä, päätös katsotaan annetuksi tiedoksi kolmantena päivänä viestin lähettämisestä, jollei muuta näytetä. Jos päätös on postitettu saantitodistusta vastaan, vastaanottajan katsotaan saaneen asiasta tiedon saantitodistuksen osoittamana aikana. Valitusaikaa laskettaessa tiedoksiantopäivää ei oteta lukuun.

Milloin kysymyksessä on sijaistiedoksianto, tiedoksisaannin katsotaan tapahtuneen kolmantena päivänä sijaistiedoksiantoa koskevan tiedoksiantotodistuksen osoittamasta päivästä. Viranomaisen tietoon asian katsotaan tulleen kirjeen saapumispäivänä.

Kun valituksen tekemisen määräajan viimeinen päivä on pyhäpäivä, itsenäisyyspäivä, vapunpäivä, joului- tai juhannusaatto tai arkilauantai, saa valituksen toimittaa ensimmäisenä arkipäivänä sen jälkeen. Valitus on toimitettava valitusviranomaiselle viimeistään valitusajan viimeisenä päivänä ennen valitusviranomaisen aukioloajan päättymistä.

Valituksen tekemisestä säädetään lisäksi sähköisestä asioinnista viranomaistoiminnassa annetussa laissa (13/2003). Määräaikojen laskemisesta säädetään säädettyjen määräaikain laskemisesta annetussa laissa (150/1930).



Valituksen sisältö

Valituksessa on ilmoitettava:

- päätös, johon haetaan muutosta (*valituksen kohteena oleva päätös*);
- miltä kohdin päätökseen haetaan muutosta ja mitä muutoksia siihen vaaditaan tehtäväksi (*vaatimukset*);
- vaatimusten perustelut; sekä
- mihin valitusoikeus perustuu, jos valituksen kohteena oleva päätös ei kohdistu valittajaan.

Valituksessa on lisäksi ilmoitettava valittajan nimi ja yhteystiedot. Jos puhevaltaa käyttää valittajan laillinen edustaja tai asiamies, myös tämän yhteystiedot on ilmoitettava. Yhteystietojen muutoksesta on valituksen vireillä ollessa ilmoitettava viipymättä tuomioistuimelle.

Valituksessa on ilmoitettava myös se postiosoite ja mahdollinen muu osoite, johon oikeudenkäyntiin liittyvät asiakirjat voidaan lähettää (*prosessiosoite*). Mikäli valittaja on ilmoittanut enemmän kuin yhden prosessiosoitteen, voi tuomioistuin valita, mihin ilmoitetuista osoitteista se toimittaa oikeudenkäyntiin liittyvät asiakirjat.

Oikaisuvaatimuksen tekijä saa valittaessaan oikaisuvaatuspäätöksestä esittää vaatimuksilleen uusia perusteluja. Hän saa esittää uuden vaatimuksen vain, jos se perustuu olosuhteiden muutokseen tai oikaisuvaatimuksen tekemisen määräajan päättymisen jälkeen valittajan tietoon tulleeseen seikkaan.

Valituksen liitteet

Valitukseen on liitettävä:

- valituksen kohteena oleva päätös valitusosoituksineen;
- selvitys siitä, milloin valittaja on saanut päätöksen tiedoksi, tai muu selvitys valitusajan alkamisen ajankohdasta; sekä
- asiakirjat, joihin valittaja vetoaa vaatimuksensa tueksi, jollei niitä ole jo aikaisemmin toimitettu viranomaiselle.
- asiamiestä käytettäessä valtakirja, sen mukaan kuin oikeudenkäynnistä hallintoasioissa annetun lain 32 §:ssä säädetään.

Valituskirjelmän toimittaminen valitusviranomaiselle

Valituskirjelmä on toimitettava valitusajan kuluessa markkinaoikeuteen, jonka osoite on:

**Sörnäistenkatu 1
00580 HELSINKI**



faksi: 029 56 43314

sähköposti: markkinaoikeus@oikeus.fi

Valituskirjelmä voidaan toimittaa valitusviranomaiselle myös postitse.

Valituksen voi tehdä myös hallinto- ja erityistuomioistuinten asiointipalvelussa osoitteessa <https://asiointi2.oikeus.fi/hallintotuomioistuimet>

Kun valituskirjelmä toimitetaan hallinto- ja erityistuomioistuinten asiointipalvelun kautta, liitteet voi toimittaa skannattuna asiointipalvelussa tai kirjeitse. Kirjeitse toimitettaessa mainitse asiasta asiointipalvelun Viesti-kentässä.

Valituskirjelmän lähettäminen postitse tai sähköisesti tapahtuu lähettäjän omalla vastuulla.

Oikeudenkäyntimaksu

Valittajalta peritään markkinaoikeudessa oikeudenkäyntimaksu 2120 euroa. Tuomioistuinmaksulaissa (1455/2015) on erikseen säädetty tapauksista, joissa maksua ei peritä.

**Approval by All Regulatory Authorities in the Nordic
synchronous area**

on

**Amended Nordic synchronous area proposal for additional
properties of the FCR in accordance with Article 154(2) of
the Commission Regulation (EU) 2017/1485 of 2 August
2017 establishing a guideline on electricity transmission
system operation**

08 March 2023

I. Introduction and legal context

This document elaborates an agreement of all Regulatory Authorities in the Nordic synchronous area (hereinafter referred to as NRAs), agreed on 08 March 2023, on the Nordic TSOs (hereinafter referred to as TSOs) “Amended Nordic synchronous area methodology for additional properties of the FCR in accordance with Article 154(2) of the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation” dated 3 February 2023 (hereinafter referred to as respectively “amended additional properties of the FCR proposal” and “Regulation 2017/1485”).

This agreement of the NRAs shall provide evidence that a decision on the amended additional properties of the FCR proposal does not need to be adopted by ACER pursuant to Article 6(8) of the Regulation 2017/1485 at this stage. This document is intended to constitute the basis on which all NRAs will each subsequently make national decisions pursuant to Regulation 2017/1485 Article 6(1) to approve the amended additional properties of the FCR proposal submitted by the TSOs. The TSOs are Fingrid Oyj, Svenska kraftnät, Energinet, Kraftnät Åland AB and Statnett SF.

The legal provisions relevant to the submission and approval of the amended additional properties of the FCR proposal, and this all NRAs agreed opinion, are Articles 4(1), 5(1), 6(3)(d)(iii), 6(6), 6(7), 7(1), 11, 118(1)(b) and 154(2) of Regulation 2017/1485, listed below.

Article 4(1)

This Regulation aims at:

- a) determining common operational security requirements and principles;
- b) determining common interconnected system operational planning principles;
- c) determining common load-frequency control processes and control structures;
- d) ensuring the conditions for maintaining operational security throughout the Union;
- e) ensuring the conditions for maintaining a frequency quality level of all synchronous areas throughout the Union;
- f) promoting the coordination of system operation and operational planning;
- g) ensuring and enhancing the transparency and reliability of information on transmission system operation;
- h) contributing to the efficient operation and development of the electricity transmission system and electricity sector in the Union.

Article 5(1)

TSOs shall develop the terms and conditions or methodologies required by this Regulation and submit them for approval to the competent regulatory authorities in accordance with Article 6(2) and (3) or for approval to the entity designated by the Member State in accordance with Article 6(4) within the respective deadlines set out in this Regulation.

Article 6(3)(d)(iii)

The proposals for the following terms and conditions or methodologies shall be subject to approval by all regulatory authorities of the concerned region, on which a Member State may provide an opinion to the concerned regulatory authority:

methodologies, conditions and values included in the synchronous area operational agreements in Article 118 concerning:
the additional properties of the FCR in accordance with Article 154(2);

Article 6(6)

The proposal for terms and conditions or methodologies shall include a proposed timescale for their implementation and a description of their expected impact on the objectives of this Regulation. Proposals on terms and conditions or methodologies subject to the approval by several or all regulatory authorities shall be submitted to the Agency at the same time that they are submitted to regulatory authorities. Upon request by the competent regulatory authorities, the Agency shall issue an opinion within 3 months on the proposals for terms and conditions or methodologies.

Article 6(7)

Where the approval of the terms and conditions or methodologies requires a decision by more than one regulatory authority, the competent regulatory authorities shall consult and closely cooperate and coordinate with each other in order to reach an agreement. Where the Agency issues an opinion, the competent regulatory authorities shall take that opinion into account. Regulatory authorities shall take decisions concerning the submitted terms and conditions or methodologies in accordance with paragraphs (2) and (3), within 6 months following the receipt of the terms and conditions or methodologies by the regulatory authority or, where applicable, by the last regulatory authority concerned.

Article 7(1)

Where one or several regulatory authorities require an amendment in order to approve the terms and conditions or methodologies submitted in accordance with paragraphs 2 and 3 of Article 6, the relevant TSOs shall submit a proposal for amended terms and conditions or methodologies for approval within 2 months following the requirement from the regulatory authorities. The competent regulatory authorities shall decide on the amended terms and conditions or methodologies within 2 months following their submission.

Article 11

- 1 TSOs responsible for submitting proposals for terms and conditions or methodologies or their amendments in accordance with this Regulation shall consult stakeholders, including the relevant authorities of each Member State, on the draft proposals for terms and conditions or methodologies listed in Article 6(2) and (3). The consultation shall last for a period of not less than 1 month.
- 2 The proposals for terms and conditions or methodologies submitted by the TSOs at Union level shall be published and submitted to public consultation at Union level. Proposals submitted by the TSOs at regional level shall be submitted to public consultation at least at regional level. Parties submitting proposals at bilateral or at multilateral level shall carry out a public consultation at least in the Member States concerned.
- 3 The TSOs responsible for developing the proposal for terms and conditions or methodologies shall duly take into account the views of stakeholders resulting from the consultations prior to its submission for regulatory approval. In all cases, a sound

justification for including or not including the views resulting from the consultation shall be provided together with the submission of the proposal and published in a timely manner before, or simultaneously with the publication of the proposal for terms and conditions or methodologies.

Article 118(1)(b)

By 12 months after entry into force of this Regulation, all TSOs of each synchronous area shall jointly develop common proposals for:
additional properties of FCR in accordance with Article 154(2);

Article 154(2)

All TSOs of a synchronous area shall have the right to specify, in the synchronous area operational agreement, common additional properties of the FCR required to ensure operational security in the synchronous area, by means of a set of technical parameters and within the ranges in Article 15(2)(d) of Regulation (EU) 2016/631 and Articles 27 and 28 of Regulation (EU) 2016/1388. Those common additional properties of FCR shall take into account the installed capacity, structure and pattern of consumption and generation of the synchronous area. The TSOs shall apply a transitional period for the introduction of additional properties, defined in consultation with the affected FCR providers.

II. The amended TSO proposal

This amended additional properties of the FCR proposal constitutes an amendment of the proposal the TSOs submitted to the NRAs in July 2020. The proposal was approved by the NRAs in September 2020.

The first proposal for amended additional properties of the FCR methodology was submitted to the NRAs on 29 June 2022 together with a separate explanatory document which also included the results from the public consultation. The NRAs sent a request for amendment to the TSOs on 21 December 2022. After the request for amendment the TSOs submitted the amended additional properties of the FCR proposal to the NRAs on 3 February 2023 together with a separate explanatory document.

The amended proposal has introduced new requirements for FCR-N. The TSOs have also proposed to separate FCR-D into two new products, Dynamic FCR-D and Static FCR-D. In the proposed methodology, there are requirements to these products for both upwards and downwards regulation. Dynamic FCR-D will give a dynamic frequency control outside the standard frequency range which is important in order to operate the system in a secure manner. However, not all FCR providing units are able to meet the dynamic requirements, and that is why the TSOs have introduced Static FCR-D, where such dynamic behaviour is not required. This will ensure that more FCR-D providers are able to participate in the market while system security is maintained. The dimensioning of Static FCR-D and Dynamic FCR-D will be handled in such a way that enough dynamic capability is ensured in the Nordic synchronous area. The dimensioning is regulated in the amended Nordic synchronous area

methodology for dimensioning rules for FCR in accordance with Article 153 of Regulation 2017/1485.

Furthermore, the TSOs have proposed a definition of FCR providing units and groups with limited energy reservoirs (hereinafter LER providers). Several requirements for the LER providers to meet when delivering FCR are also proposed. For instance, the LER providers shall have a Normal state Energy Management Function (hereinafter NEM function) and an Alert state Energy Management function (hereinafter AEM function). The NEM function will limit the risk of a reservoir exhaustion for the LER providers, while the AEM function will limit the consequences in case of a reservoir exhaustion for the LER providers.

There is also proposed additional properties on minimum accuracy and resolution of measurements.

The transitional period for the implementation of additional properties of FCR shall be five years counted from the day of the approval from the NRAs. In this period the TSOs can use a maximum of one year to adapt their national processes. The TSOs shall also review the requirements within two years from the date of the approval from the NRAs. If needed based on this review, the TSOs shall suggest adjustments to the methodology.

Regulation 2017/1485 requires NRAs to consult and closely cooperate and coordinate with each other in order to reach an agreement and make decisions within six months following receipt of submissions of the last NRA concerned. According to Regulation 2017/1485 a request for amendment gives the TSOs two months to amend the proposal and the NRAs two months to reach an agreement. A decision is therefore required by each NRA by 3 April 2023.

III. NRAs' position

The NRAs are of the opinion that the amended additional properties of the FCR proposal enables the achievement of the objectives of Article 4 of Regulation 2017/1485.

The NRAs have therefore reached an agreement that the amended additional properties of the FCR proposal meet the requirements of Regulation 2017/1485.

IV. Conclusions

All NRAs have assessed, consulted and closely cooperated to reach an agreement that the amended additional properties of the FCR proposal meet the requirements of Regulation 2017/1485 and as such can be approved by all NRAs.

NRAs shall, based on this agreement, make their national decisions by 3 April 2023. The amended additional properties of the FCR proposal will be adopted upon the decision of the last NRA in the Nordic synchronous area. Following the national decisions by all NRAs, the

TSOs are required to publish the amended additional properties of the FCR proposal as approved, according to Article 8(1) of Regulation 2017/1485. All TSOs must respect the implementation deadlines provided in the amended additional properties of the FCR proposal.

**Amended Nordic synchronous area methodology for additional
properties of FCR in accordance with Article 154(2) of the
Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing
a guideline on electricity transmission system operation**

3 Feb 2023

All TSOs of the Nordic synchronous area, taking into account the following:

Whereas

- (1) This document is the common methodology developed by all Transmission System Operators within the Nordic synchronous area (hereafter referred to as “TSOs”) for additional properties of FCR in accordance with Article 154(2) of Commission Regulation (EU) 2017/1485 establishing a guideline on electricity transmission system operation (hereafter referred to as “SO Regulation”). This methodology is hereafter referred to as “Methodology”. The Methodology is an amended version of the methodology dated 18 June 2020 which was approved by the Nordic regulators in September 2020.
- (2) This Methodology is subject to approval in accordance with Article 6(3) of the SO Regulation.
- (3) The Methodology takes into account the general principles and goals set in the SO Regulation as well as Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (hereafter referred to as "Regulation (EU) No 2019/943"). The goal of the SO Regulation and Regulation (EU) No 2019/943 is the safeguarding of operational security, frequency quality and the efficient use of the interconnected system and resources. Article 118(1)(b) of the SO Regulation sets for this purpose requirements for the TSOs to “jointly develop common proposals for: [...] additional properties of FCR in accordance with Article 154(2);”
- (4) Article 154(1) of the SO Regulation refers to Annex V of the SO Regulation for the properties/minimum technical requirements for FCR that shall be ensured by each reserve connecting TSO. Annex V of the SO Regulation defines the minimum technical requirements for FCR for the Nordic synchronous area:

<i>Minimum accuracy of frequency measurement</i>	<i>10 mHz or the industrial standard if better</i>
<i>Maximum combined effect of inherent frequency response insensitivity and possible intentional frequency response dead band of the governor of the FCR providing units or FCR providing groups</i>	<i>10 mHz</i>
<i>FCR full activation time</i>	<i>30 s if system frequency is outside standard frequency range</i>
<i>FCR full activation frequency deviation</i>	<i>± 500 mHz</i>

- (5) On top of the minimum technical requirements specified in Annex V of the SO Regulation, Article 154(2) of the SO Regulation gives the TSOs “the right to specify, in the synchronous area operational agreement, common additional properties of the FCR required to ensure operational security in the synchronous area”. Article 154(2) of the SO Regulation further describes that this shall be done “by means of a set of technical parameters and within the ranges in Article 15(2)(d) of Regulation (EU) 2016/631 and Articles 27 and 28 of Regulation (EU) 2016/1388. Those common additional properties of FCR shall take into account the installed capacity, structure and pattern of consumption and generation of the synchronous area. The TSOs shall apply a transitional period for the introduction of additional properties, defined in consultation with the affected FCR providers.”.

- (6) Article 15(2)(d) of Regulation (EU) 2016/631 (“*network code on requirements for grid connection of generators*”) provides a number of requirements (ranges) that shall be met by Type C and Type D power-generating modules “*when frequency sensitive mode (‘FSM’) is operating*”. These include ranges of the “*Active power range related to maximum capacity*”, “*Frequency response insensitivity*”, “*Frequency response deadband*”, “*Droop*”, “*Active power frequency response capability*”, “*initial activation of active power frequency response*” and the requirement that “(v) *the power-generating module shall be capable of providing full active power frequency response for a period of between 15 and 30 minutes as specified by the relevant TSO.*”. Furthermore, “(vi) *within the time limits laid down in point (v) of paragraph 2(d), active power control must not have any adverse impact on the active power frequency response of power-generating modules;*”.
- (7) Articles 27 and 28 of Regulation (EU) 2016/1388 (“*network code on demand connection*”) describes requirements for demand units to provide demand response services to system operators, including “*autonomously controlled demand response system frequency control*”. More specifically, Article 28 of Regulation (EU) 2016/1388 stipulates the “*specific provisions for demand units with demand response active power control, reactive power control and transmission constraint management*”. These provisions relate to operating capability across frequency ranges and voltage ranges, requirements related to receiving and executing instructions, controlling and adjusting power consumption, and requirements for maintaining the modification to power consumption.
- (8) The Nordic Frequency Containment Process (FCP) currently applies two types of Frequency Containment Reserves (FCR). FCR for normal operation (FCR-N) is used for continuous imbalances to keep the frequency within the ± 100 mHz range. In conjunction with a rapid frequency change to 49.90/50.10 Hz, FCR-N shall today be up regulated/down regulated within 2-3 minutes. The purpose of FCR-D upwards is to mitigate the impact of incidental disturbances once the frequency is below 49.90 Hz. FCR-D upwards shall be fully activated if the frequency stabilises at 49.50 Hz. In the event of a frequency drop to 49.50 Hz caused by a momentary loss, FCR-D upwards shall be fully activated within 30 seconds. The purpose of FCR-D downwards is to mitigate the impact of incidental disturbances once the frequency is above 50.10 Hz. FCR-D downwards shall be fully activated if the frequency stabilises at 50.50 Hz. In the event of a frequency increase to 50.50 Hz caused by a momentary loss, FCR-D downwards shall be fully activated within 30 seconds. It has to be noted that the *FCR full activation frequency deviation* of ± 500 mHz and *FCR full activation time* of 30 seconds that are specified in Annex V of the SO Regulation only apply to FCR-D. Consequently, the TSOs specify the required FCR-N response as additional properties in this Methodology. The other two requirements in Annex V of the SO Regulation apply to both FCR-N and FCR-D.
- (9) In regard to regulatory approval, Article 6(3) of the SO Regulation states:
“*The proposals for the following terms and conditions or methodologies shall be subject to approval by all regulatory authorities of the concerned region, on which a Member State may provide an opinion to the concerned regulatory authority: [...]*
(d) methodologies, conditions and values included in the synchronous area operational agreements in Article 118 concerning:
(iii) additional properties of FCR in accordance with Article 154(2);
- (10) According to Article 6(6) of the SO Regulation the expected impact of the Methodology on the objectives of the SO Regulation has to be described and is presented below.

- (11) The Methodology generally contributes to and does not in any way hamper the achievement of the objectives of Article 4 of the SO Regulation. In particular, the Methodology serves the objectives to (1)(c) determining common load-frequency control processes and control structures, (1)(d) ensuring the conditions for maintaining operational security throughout the Union, (1)(e) ensuring the conditions for maintaining a frequency quality level of all synchronous areas throughout the Union and (1)(h) contributing to the efficient operation and development of the electricity transmission system and electricity sector in the Union. The Methodology contributes to these objectives by specifying the additional rules for FCR-N, FCR-D upwards and FCR-D downwards, which are key reserves that are used in the common Nordic load-frequency control processes. The additional properties are required to maintain the operational security by reducing the risk for automatic Low Frequency Demand Disconnection (LFDD) and for system blackouts due to under or over frequency. The additional properties balance the impact of both cost for FCR and outage risk and therefore ensure efficient operation of the electricity transmission system.
- (12) The TSOs together operate the Nordic synchronous system. Consequently, the TSOs and all the power consumers, generators, balance service providers and networks directly or indirectly connected to the TSOs' networks, influence the frequency quality level and experience the same frequency level. FCR-N, FCR-D upwards and FCR-D downwards will only be effective if all providers will provide the contracted amounts in accordance with their respective specifications.
- (13) In conclusion, the Methodology contributes to the general objectives of the SO Regulation to the benefit of all market participants and electricity end consumers.

SUBMIT THE FOLLOWING AMENDED METHODOLOGY TO ALL REGULATORY AUTHORITIES OF THE NORDIC SYNCHRONOUS AREA:

Article 1 - Subject matter and scope

1. The additional properties for FCR described in this Methodology are the common proposal of the TSOs in accordance with Article 154(2) of the SO Regulation. The Methodology applies solely to the Nordic synchronous area.

The Nordic synchronous area covers transmission systems of East-Denmark (DK2), Finland, Sweden and Norway.

This Methodology has been developed by Energinet, Fingrid Oyj, Kraftnät Åland AB, Svenska kraftnät and Statnett SF.

2. This Methodology covers additional properties of FCR for the Nordic synchronous area (only) and shall be applied by the Nordic TSOs (only).

Article 2 - Definitions and interpretation

1. For the purposes of the Methodology, the terms used shall have the meaning of the definitions included in Article 3 of the SO Regulation.
2. In this Methodology, unless the context requires otherwise:
 - a) the singular indicates the plural and vice versa;
 - b) the headings are inserted for convenience only and do not affect the interpretation of the Methodology; and
 - c) any reference to legislation, regulations, directives, orders, instruments, codes or any other enactment shall include any modification, extension or re-enactment of it when in force.

Article 3 – FCR-N additional properties

1. The FCR-N regulation product is activated in the interval 49.9 Hz to 50.1 Hz. FCR full activation frequency deviation for FCR-N is ± 100 mHz. The steady-state activation within the interval 49.9 to 50.1 Hz must be proportional to the frequency deviation. At a system frequency of 50.0 Hz, 0% of the FCR-N capacity shall be activated. At system frequencies equal to or below 49.9 Hz, 100% of the FCR-N capacity shall be activated in the upward direction. Respectively, at system frequencies equal to or above 50.1 Hz, 100% of the FCR-N capacity shall be activated in the downward direction.
2. The dynamic response from FCR-N shall be tuned to suppress variations in the frequency with periodicity of 10 seconds and slower, with an emphasis around period times of 70 seconds. This means that FCR-N shall activate approximately 63% of the final value in 60 seconds and approximately 95% of the final value in 3 minutes in response to a step change of ± 100 mHz from 50.0 Hz in the system frequency.
3. The deactivation behaviour of FCR-N shall fulfil the same requirements as stated for the activation behaviour in paragraph 2.

4. As the system frequency is continuously varying, FCR-N must have a dynamic response that contributes to containing the frequency within the standard frequency range. To this aim FCR-N shall be able to continuously follow all frequency variations.
5. For all frequency deviations, the FCR-N response shall have the same dynamic behaviour as for full activation and deactivation.
6. The dynamic properties of the FCR-N response shall act such that it contributes to stabilisation and damping of system frequency oscillations.
7. Prequalification requirements and tests specified and governed by the reserve connecting TSO shall confirm that the FCR-N product provided to the TSO complies with the requirements in paragraphs 1 to 6.

Article 4 – Dynamic FCR-D upwards additional properties

1. The Dynamic FCR-D upwards regulation product is activated in the interval 49.9 Hz to 49.5 Hz. The activation within the interval 49.9 to 49.5 Hz must be proportional to the frequency deviation. At a frequency of 49.9 Hz, 0% of the Dynamic FCR-D upwards capacity shall be activated, and at frequencies equal to or below 49.5 Hz, 100% of the Dynamic FCR-D upwards capacity shall be activated.
2. In conjunction with a system frequency change from 49.9 Hz to 49.0 Hz with a slope of -0.24 Hz/s, Dynamic FCR-D upwards shall be tuned and verified to regulate upwards as follows:

1. $|\Delta P_{7.5s}| \geq 0.86 \cdot |\Delta P_{ss}|$

2. $|E_{7.5s}| \geq 3.2s \cdot |\Delta P_{ss}|$

In the equations above,

$\Delta P_{7.5s}$ (MW) is the activated power 7.5 seconds after the start of a system frequency change

ΔP_{ss} (MW) is the steady state Dynamic FCR-D upwards activation at a frequency deviation of -500 mHz

$E_{7.5s}$ (MWs) is the activated net energy during the first 7.5 seconds of a system frequency change.

3. The Dynamic FCR-D upwards response shall be able to follow frequency variations below the standard frequency range by activation and deactivation. The dynamic response shall provide continuous frequency control when the frequency is below the standard frequency range.
4. For all frequency deviations below the standard frequency range, the Dynamic FCR-D upwards response shall have the same dynamic behaviour as for full activation and deactivation.
5. The dynamic properties of the Dynamic FCR-D upwards response shall act such that it contributes to stabilisation and damping of system frequency oscillations.
6. Prequalification requirements and tests specified and governed by the reserve connecting TSO shall confirm that the Dynamic FCR-D upwards product provided to the TSO complies with the requirements in paragraphs 1 to 5.

Article 5 – Static FCR-D upwards additional properties

1. The Static FCR-D upwards regulation product is activated in the interval 49.9 Hz to 49.5 Hz. The activation within the interval 49.9 to 49.5 Hz must be proportional or close to proportional to the frequency deviation. At a frequency of 49.9 Hz, 0% of the Static FCR-D upwards capacity shall be activated, and at frequencies equal to or below 49.5 Hz, 100% of the Static FCR-D upwards capacity shall be activated.
2. In conjunction with a system frequency change from 49.9 Hz to 49.0 Hz with a slope of -0.24 Hz/s, Static FCR-D upwards shall be tuned and verified to regulate upwards as follows:

1. $|\Delta P_{7.5s}| \geq 0.86 \cdot |\Delta P_{ss}|$

2. $|E_{7.5s}| \geq 3.2s \cdot |\Delta P_{ss}|$

In the equations above,

$\Delta P_{7.5s}$ (MW) is the activated power 7.5 seconds after the start of a system frequency change

ΔP_{ss} (MW) is the steady state Static FCR-D upwards activation at a frequency deviation of -500 mHz

$E_{7.5s}$ (MWs) is the activated net energy during the first 7.5 seconds of a system frequency change.

The delay before the response is initiated shall not exceed 2.5 seconds.

3. For all frequency deviations below the standard frequency range, the Static FCR-D upwards response shall have the same dynamic behaviour as for full activation and deactivation.
4. The dynamic properties of the Static FCR-D upwards response shall act such that it does not negatively affect stabilisation and damping of system frequency oscillations.
5. Prequalification requirements and tests specified and governed by the reserve connecting TSO shall confirm that the Static FCR-D upwards product provided to the TSO complies with the requirements in paragraphs 1 to 4.

Article 6 – Dynamic FCR-D downwards additional properties

1. The Dynamic FCR-D downwards regulation product is activated in the interval 50.1 Hz to 50.5 Hz. The activation within the interval 50.1 to 50.5 Hz must be proportional to the frequency deviation. At a frequency of 50.1 Hz, 0% of the Dynamic FCR-D downwards capacity shall be activated, and at frequencies equal to or above 50.5 Hz, 100% of the Dynamic FCR-D downwards capacity shall be activated.
2. In conjunction with a system frequency change from 50.1 Hz to 51.0 Hz with a slope of 0.24 Hz/s, Dynamic FCR-D downward shall be tuned and verified to regulate upwards as follows:

1. $|\Delta P_{7.5s}| \geq 0.86 \cdot |\Delta P_{ss}|$

2. $|E_{7.5s}| \geq 3.2s \cdot |\Delta P_{ss}|$

In the equations above,

$\Delta P_{7.5s}$ (MW) is the activated power 7.5 seconds after the start of a system frequency change

ΔP_{ss} (MW) is the steady state Dynamic FCR-D downwards activation at a frequency deviation of 500 mHz

$E_{7.5s}$ (MWs) is the activated net energy during the first 7.5 seconds of a system frequency change

3. The Dynamic FCR-D downwards response shall be able to follow frequency variations above the standard frequency range by activation and deactivation. The dynamic response shall provide continuous frequency control when the frequency is above the standard frequency range
4. For all frequency deviations above the standard frequency range, the Dynamic FCR-D downwards response shall have the same dynamic behaviour as for full activation and deactivation.
5. The dynamic properties of the Dynamic FCR-D response shall act such that it contributes to stabilisation and damping of system frequency oscillations.
6. Prequalification requirements and tests specified and governed by the reserve connecting TSO shall confirm that the Dynamic FCR-D downwards product provided to the TSO complies with the requirements in paragraphs 1 to 5.

Article 7 – Static FCR-D downwards additional properties

1. The Static FCR-D downwards regulation product is activated in the interval 50.1 Hz to 50.5 Hz. The activation within the interval 50.1 to 50.5 Hz must be proportional or close to proportional to the frequency deviation. At a frequency of 50.1 Hz, 0% of the Static FCR-D downwards capacity shall be activated, and at frequencies equal to or below 50.5 Hz, 100% of the Static FCR-D downwards capacity shall be activated.
2. In conjunction with a system frequency change from 50.1 Hz to 51.0 Hz with a slope of 0.24 Hz/s, Static FCR-D downwards shall be tuned and verified to regulate upwards as follows:

1. $|\Delta P_{7.5s}| \geq 0.86 \cdot |\Delta P_{ss}|$

2. $|E_{7.5s}| \geq 3.2s \cdot |\Delta P_{ss}|$

In the equations above,

$\Delta P_{7.5s}$ (MW) is the activated power 7.5 seconds after the start of a system frequency change

ΔP_{ss} (MW) is the steady state Static FCR-D downwards activation at a frequency deviation of 500 mHz

$E_{7.5s}$ (MWs) is the activated net energy during the first 7.5 seconds of a system frequency change.

The delay before the response is initiated shall not exceed 2.5 seconds.

3. For all frequency deviations above the standard frequency range, the Static FCR-D downwards response shall have the same dynamic behaviour as for full activation and deactivation.
4. The dynamic properties of the Static FCR-D downwards response shall act such that it does not negatively affect stabilisation and damping of system frequency oscillations.

5. Prequalification requirements and tests specified and governed by the reserve connecting TSO shall confirm that the Static FCR-D downwards product provided to the TSO complies with the requirements in paragraphs 1 to 4.

Article 8 – Additional properties on FCR providing units and groups with limited energy reservoirs

1. FCR providing units and groups with endurance for full activation less than two hours are defined as FCR providing units and groups with limited energy reservoirs (LER).
2. An FCR providing unit or group with an energy reservoir that limits its capability to provide FCR shall activate its FCR for as long as the frequency deviation persists, unless its energy reservoir is exhausted in either the positive or negative direction.
3. FCR-N provision from FCR providing units or groups with limited energy reservoirs (LER) shall be continuously available during the whole contractually agreed delivery period.
4. FCR-D provision from FCR providing units or groups with limited energy reservoirs (LER) shall be continuously available in normal state. As of triggering of alert state and during the alert state, FCR-D providing units or groups with limited energy reservoirs shall be able to fully activate FCR continuously for a time period in accordance with the methodology per article 156(10) of the SO regulation.
5. FCR-D providing units or groups with partially or fully depleted energy reservoirs shall restore full nominal capacity within 120 minutes of the allowed start of recovery. The recovery process shall be initiated and completed as soon as possible.
6. In case of a new disturbance during the recovery process an FCR providing unit or group shall be able to stop the recovery and start activation of the reserve with the available energy.
7. FCR providing units and groups with limited energy reservoirs (LER) must implement a Normal state Energy Management function (NEM) to limit the risk of a reservoir exhaustion, and an Alert state Energy Management scheme (AEM) to limit the consequences of a reservoir exhaustion. FCR providing entities with an energy reservoir where the endurance for full activation exceeds two hours may implement the same energy management functions, or during prequalification propose other solutions of similar effect, to be approved by the reserve connecting TSO. FCR providing entities classified as LER which have an energy reservoir that is not replenished from the power grid may also suggest an alternative energy management solution with similar effect, to be approved by the TSO.
8. The FCR providing unit or group shall activate the Normal state Energy Management function when the reservoir level has drifted from the nominal level such that an increased risk of exhaustion has occurred. The Normal state Energy Management function shall be used to restore the reservoir level to the nominal value. The NEM is allowed to change the baseline (setpoint) of the entity providing FCR-N or FCR-D to restore the reservoir. NEM function is allowed to activate when the frequency is within the standard frequency range.
9. The FCR providing unit or group shall activate the Alert state Energy Management function when the reservoir level has drifted from the nominal level such that a severe risk of exhaustion has occurred. The Alert state Energy Management function shall be used to ensure that the FCR response does not fully and suddenly cease. The AEM function changes the frequency reference for the entity providing FCR-N or FCR-D to reach a state of energy exhaustion in a controlled manner.

10. During provision from an FCR providing unit or group with a Normal state Energy Management function, active power and energy shall be reserved from the unit or group to ensure proper functioning of the Normal state Energy Management function, in addition to the active power needed to ensure full availability of FCR provision itself.
11. Use of energy management functions shall not interfere with the ability to provide FCR.
12. Prequalification requirements and tests specified and governed by the reserve connecting TSO shall confirm that the FCR product(s) provided to the TSO complies with the requirements in paragraphs 1 to 11.

Article 9 – Additional properties on minimum accuracy and resolution of measurements

1. The accuracy and the resolution of the frequency and active power measurements shall be such that the FCR providing unit or group is able to respond to small variations in the measured quantities and the FCR activation can be verified from the measurements.
2. The active power measurement shall cover all active power changes as a result of the FCR activation.
3. Prequalification requirements and tests specified and governed by the reserve connecting TSO shall confirm that the FCR product(s) that is provided to the TSO complies with the requirements in paragraphs 1 to 2.

Article 10 – Publication and implementation

1. The relevant TSOs shall publish (in accordance with Article 8 of the SO Regulation) the Methodology without undue delay after the competent NRAs have approved the Methodology or a decision has been taken by the Agency for the Cooperation of Energy Regulators in accordance with Article 6 of the SO Regulation.
2. The TSOs shall start to implement the FCR additional properties as specified in this Methodology immediately after all of the following has concluded:
 - a. the approval by all NRAs of the Synchronous Area
 - b. the TSOs have finalised the prequalification procedures
3. The transitional period for the implementation of additional properties of FCR by the existing affected FCR providers shall be five years counted from the date of approval by the NRAs of the Synchronous Area: maximum one year for the TSOs to adapt their national processes and a total maximum of five years for the FCR providers to implement the FCR additional properties. The TSOs shall review the requirements of this Methodology within two years from the date of approval by the NRAs of the Synchronous Area, and evaluate if the experience from the implementation necessitates any adjustments to the requirements within this Methodology.
4. New FCR providing units and groups shall apply the new requirements immediately after implementation in national processes. The specific date will be communicated in advance by the relevant TSO.

5. Existing FCR providing units and groups shall have transitioned within a maximum of five years counted from the date of approval by the NRAs of the Synchronous Area.
6. When the existing prequalification is re-evaluated the evaluation shall be made towards the new requirements as stated in this Methodology.
7. The reserve connecting TSO shall be allowed to extend existing prequalifications to ensure a smooth transition. The extension shall be based on successful auditing based on the pre-existing requirements. The extension shall end at the latest at the date defined in paragraph 5.

Article 11 - Language

The reference language for this Methodology shall be English. For the avoidance of doubt, where TSOs need to translate this Methodology into national language(s), in the event of inconsistencies between the English version published by TSOs in Nordic Synchronous Area in accordance with Article 8(1) of the SO Regulation and any version in another language the relevant TSOs shall, in accordance with national legislation, provide the relevant national regulatory authority with an updated translation of the Methodology.