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Prequalification procedure

for FCR, aFRR, mFRRsa, mFRRda and ROD

CONFIDENTIALITY CLASS: C1 – Public Information

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Version Management

Version Number	Version Date	Description
V0.1	14-09-2018	Document for consultation
V1.0	13-03-2019	Document containing description of process to be applied as of 14 March 2019
V1.1	14-11-2019	Changes in entire document

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1. Foreword

In an electric energy supply system, the generated power should be permanently in balance with the power which is consumed. Unplanned changes in power consumption or power input disturb this balance and cause frequency changes in the grid, to which the installations involved in the Frequency Containment Reserve (FCR) respond. This containment process guarantees that the balance between the generated and consumed power is restored within a few seconds on the basis of proportionate control, stabilizing the frequency within the allowable limits.

The system used by TenneT to maintain the national balance is the so-called Load Frequency Control (LFC). Its most important goal is to use regulating power (automatic Frequency Restoration Reserve (aFRR)) to respond as efficiently as possible to the occurrence of significant Dutch regulating errors with respect to the synchronously linked high-voltage grid of Continental Europe. The aim is to correct significant imbalance and to correct the frequency error probably caused within 15 minutes. In addition, the LFC has to react in case of smaller imbalance situations in order to limit the so-called unplanned exchanged energy with the coupled Transmissions System Operators (TSO).

In case of a large imbalance, TenneT can also activate incident reserves for a limited period (Manual Frequency Restoration Reserve, direct activated (mFRRda)).

If the remaining available regulating power falls below a threshold value, and the expectation is that it will remain so longer than several imbalance settlement periods (ISPs), then reserve power will be activated by TenneT through a manual process (manual Frequency Restoration Reserve, schedule activated (mFRRsa)) until sufficient regulating power has again become available by the correcting actions of market parties. The price can also be a reason to use reserve power when this is cheaper than long-term activated regulating power. Reserve power bids are always activated fully and for at least a complete ISP.

TenneT can make use of Reserve Power Other Purposes (ROD, in Dutch: "Reservevermogen Overige Doeleinden") for resolving transport restrictions, providing assistance abroad and during the failure of international direct current connections.

Resulting from the System Operations Guideline (SO-GL) [1] potential providers of frequency containment reserves (FCR) [[1], Article 155] and frequency restoration reserves (FRR) [[1], Article 159] must successfully undergo a prequalification process. In this document, FRR refers to both automatically activated FRR (aFRR) and manually activated FRR (mFRRsa and mFRRda). A national grid operator is referred to in the Guideline as [1] Transmission System Operator (TSO).

With regard to the FCR the SO-GL states the following [[1], Article 155.2]:

"A potential FCR provider shall demonstrate to the reserve connecting TSO that it complies with the technical and the additional requirements set out in Article 154 by completing successfully the prequalification process of potential FCR providing units or FCR providing groups, described in paragraphs 3 to 6 of this Article."

With regard to the FRR the SO-GL states the following [[1], Article 159.2]:

"A potential FRR provider shall demonstrate to the reserve connecting TSO or the TSO designated by the reserve connecting TSO in the FRR exchange agreement that it complies with the FRR minimum technical requirements in Article 158(1), the FRR availability requirements in Article 158(2), the ramping rate requirements in Article 158(1) and the connection requirements in Article 158(3) by completing successfully the prequalification process of potential FRR providing units or FRR providing groups, described in paragraphs 3 to 6 of this Article."

Where the SO-GL refers to potential providers of FCR or FRR, the prequalification process uses the term applicant, for simplification and for the readability of this document. This does not alter the fact that, in addition to successful prequalification, an applicant must also be recognized as a BSP in order to offer balancing services to TenneT.

To be eligible to provide FCR, aFRR, mFRRsa, mFRRda or ROD, the applicant must demonstrate during prequalification that a number of minimum requirements are met. This document describes the prequalification processes for FCR, FRR and ROD. With regard to the prequalification for FRR, a distinction is made in this document between voluntary aFRR bids, contracted aFRR, non-contracted mFRRsa and contracted mFRRda.

2. Definitions and Abbreviations

Applicant	Provider or potential provider of balancing services which has applied for a prequalification process
aFRR	Automatic Frequency Restoration Reserve
BSP	Balancing Service Provider
BRP	Balance Responsible Party
DSO	Distribution System Operator
FCR	Frequency Containment Reserve
FRR	Frequency Restoration Reserve
LFC	Load Frequency Control
ISP	Imbalance Settlement Period. Explanation: In the past, ISP was also known as Programme Time Unit (PTU).
mFRRda	manual Frequency Restoration Reserve, direct activated
mFRRsa	manual Frequency Restoration Reserve, schedule activated
PAT	Production Acceptance Test
Prequalification	*"the process to verify the compliance of a reserve providing unit or a reserve providing group with the requirements set by the TSO"* [[1], Article 3.146]
Prequalification-status	Being pre-qualified/the status, earned by successfully undergoing prequalification, or the prequalification process.
PQ	See: 'Prequalification'
RPU	Reserve Providing Unit
RPG	Reserve Providing Group
ROD	Reserve Power Other Purposes (in Dutch: "Reservevermogen Overige Doeleinden")
SO-GL	COMMISSION REGULATION (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation [1]
TI	Technical Installation
TSO	Transmission System Operator
TSP	Transport Service Provider

3. Introduction to the prequalification process

Resulting from the System Operations Guideline (SO-GL) [1], BSPs of frequency containment reserves (FCR) [[1], Article 155] and frequency restoration reserves (FRR) [[1], Article 159] must successfully undergo a prequalification process.

With regard to the FCR the SO-GL states the following [[1], Article 155.2]:
"A potential FCR provider shall demonstrate to the reserve connecting TSO that it complies with the technical and the additional requirements set out in Article 154 by completing successfully the prequalification process of potential FCR providing units or FCR providing groups, described in paragraphs 3 to 6 of this Article."

With regard to the FRR the SO-GL states the following [[1], Article 159.2]:
"A potential FRR provider shall demonstrate to the reserve connecting TSO or the TSO designated by the reserve connecting TSO in the FRR exchange agreement that it complies with the FRR minimum technical requirements in Article 158(1), the FRR availability requirements in Article 158(2), the ramping rate requirements in Article 158(1) and the connection requirements in Article 158(3) by completing successfully the prequalification process of potential FRR providing units or FRR providing groups, described in paragraphs 3 to 6 of this Article."

For prequalification for providing reserve power for other purposes (ROD) there are no statutory requirements. However, because ROD has a bidding and activating process that is similar to mFRRsa, the prequalification process for ROD is also included in this document. Successfully undergoing prequalification earns recognition as Transport Service Provider (TSP).[1] The requirements for this are set out in Appendix G.

This document describes the prequalification processes for FCR, FRR and ROD. References to FRR are understood to include aFRR, mFRRsa and mFRRda.

4. Effective date

TenneT applies the prequalification process defined in this document as of 14 March 2019.

4.1 Exceptions

BSPs are not required to complete a new prequalification process (for the relevant TI(s)) when:

a. For contracted FCR, aFRR or mFRRda: they have (had) a contract with TenneT in the period from 14 March 2018 to 13 March 2019; or,
b. For voluntary aFRR or mFRRsa bids: TenneT has activated a balancing energy bid submitted by the BSP from 14 March 2018 to 13 March 2019.

[1] There are two reasons why the term BSP is not used. First, ROD is different from other products because it is not a balancing service but a transport service. Second, there are no statutory requirements laid down with regard to the content of the prequalification procedure for providing transport services. This is, however, the case for earning recognition as BSP.

A BSP retains/obtains a prequalification-status for the relevant product by confirming the occurrence of abovementioned a. or b. in writing to TenneT before 30 September 2019 by indicating this on the prequalification application form. BSPs that have not submitted a prequalification application form by 30 September 2019 are expected to undergo the entire prequalification process, including associated tests and reports as described in this document.

Prequalification processes that have already started will be continued following the entry into force of this document in accordance with the rules in force at the time the relevant prequalification process started.

5. Process description

An application for prequalification can be submitted at any time. After successfully undergoing the prequalification process, the BSP can bid for the balancing services for which it is prequalified.

The prequalification process for both FCR and FRR is shown in the chart below (Figure 1). Which party should take action in each part of the process is illustrated using colours. The different steps, indicated in Figure 1, are explained in more detail in section 5.1.

The processes that have to be undergone are comparable for FCR, aFRR, mFRRsa, mFRRda and ROD. Differences are indicated as applicable.

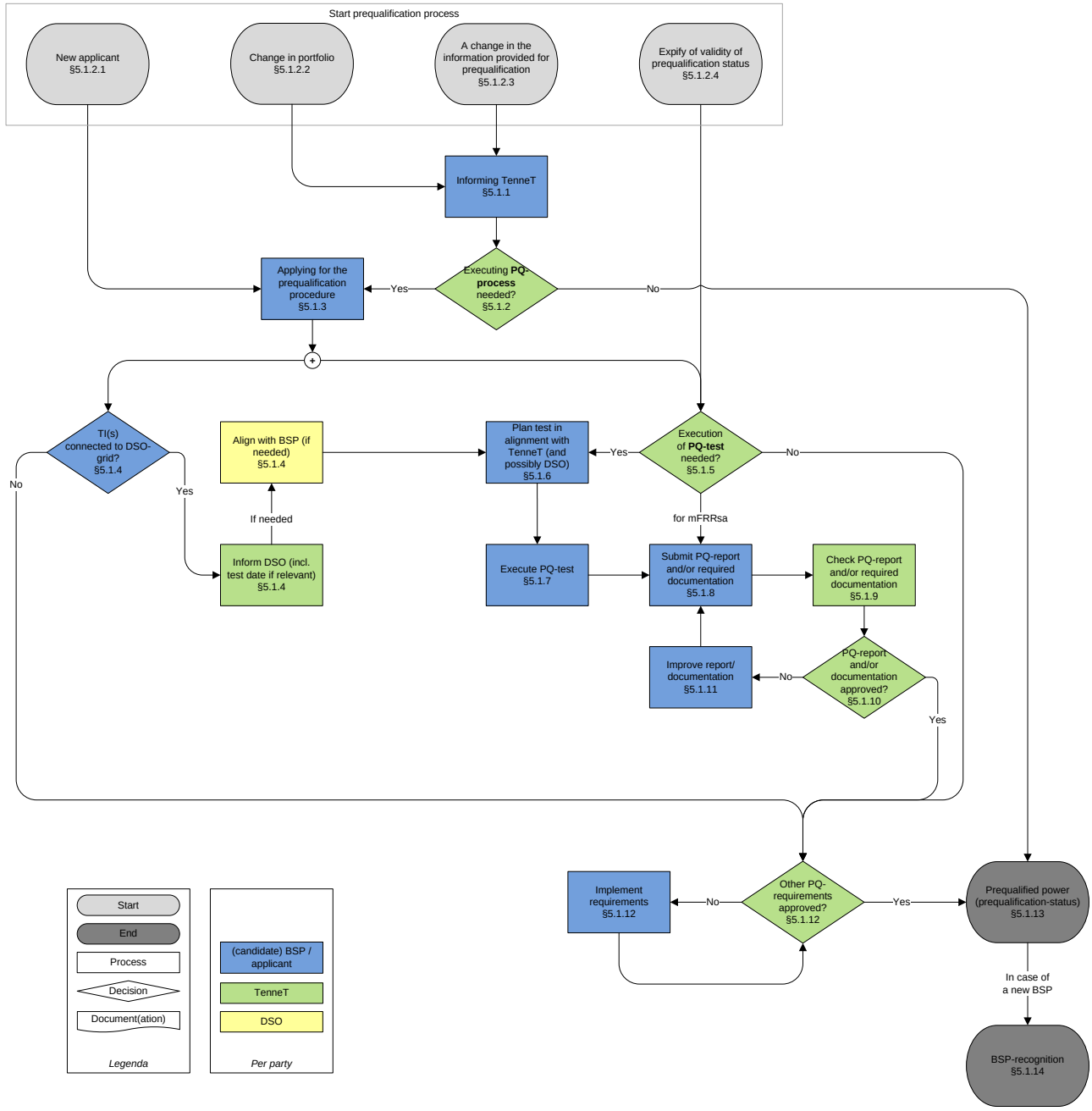

Figure 1: Prequalification process for FCR and FRR

5.1 Explanatory note to the prequalification process steps

There are different occurrences that can trigger a prequalification process:

a) a new applicant, not yet qualified for the product, applies to TenneT;
b) a change in the BSP's portfolio;
c) a change in the information provided (for (previous) prequalification);
d) the expiry of the validity of the current prequalification-status.

In the following sections the required actions are explained (in line with the different blocks in the process chart).

5.1.1 Informing TenneT

In the event of changes with regard to the current operation (in other words in the event of c[2] as set out above) the BSP should inform TenneT. This must be done as soon as possible, but in any case within two weeks of the occurrence of such a change. When doing so the following information should be provided:

- the prequalified power to which the change relates;
- a description of the change;
- the consequences of the change.

5.1.2 Does a prequalification process have to be undergone?

After the BSP has informed TenneT (as described in section 5.1.1) about (intended) changes, TenneT assesses whether it is necessary to undergo the prequalification process. If a new prequalification is required, the BSP can decide not to undergo a new prequalification. In that case, the prequalification-status expires after up to 6 months following TenneT's assessment, or sooner if the existing prequalification expires earlier due to the validity of 5 years. If TenneT assesses a prequalification as being unsatisfactory during the course of the prequalification process, the relevant prequalification-status expires immediately.

Please note: Undergoing the prequalification *process* is not the same as doing a prequalification *test*. A prequalification test can be, but does not necessarily have to be, part of the prequalification process.

5.1.2.1 New applicant

In the event of a new applicant, not yet prequalified for the product, applying to TenneT a prequalification process should always be undergone.

5.1.2.2 Change in portfolio

An existing BSP wants to change its portfolio by adding or removing Technical Installations (TIs). In the case of FCR, in addition to adding or removing TIs, the BSP can also change the composition/distribution of its reserve providing unit[3] (RPU) or reserve providing group[4] (RPG). Depending on the product, this has the following implications for whether or not it has to undergo the prequalification process:

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[2] This type of change may include, but is not limited to, changes to the regulating algorithm or change of hardware required, such as the frequency meter in the case of FCR.

[3] *'reserve providing unit' means a single or an aggregation of power generating modules and/or demand units connected to a common connection point fulfilling the requirements to provide FCR, FRR or RR;* [[1], Article 3.2.10].

[4] *'reserve providing group' means an aggregation of power generating modules, demand units and/or reserve providing units connected to more than one connection point fulfilling the requirements to provide FCR, FRR or RR;* [[1], Article 3.2.11].

Table 1: Necessity of PQ-process

Product	CHANGE		
	Add a new TI	**Remove a TI**	**Change RPU or RPG composition**
FCR	PQ process	No PQ process if TI was a separate RPU. PQ process if TI was part of RPU/RPG.	PQ process
aFRR	PQ process	No PQ process, unless remaining power in portfolio < prequalified power.	n/a
mFRRsa	PQ process	No PQ process, unless remaining power in portfolio < prequalified power.	n/a
mFRRda	PQ process	No PQ process, unless remaining power in portfolio < prequalified power.	n/a
ROD	PQ process	No PQ process	n/a

Please note: Within a prequalified portfolio, the BSP is free to select RPUs/RPGs to provide or not to provide balancing services.

If the prequalification concerns type approval[5], the BSP must make the required information available to TenneT.

5.1.2.3 A change in the information provided for prequalification

Depending on the change made, and in particular the (expected) consequence(s), TenneT assesses on a case-by-case basis whether it is necessary to undergo the prequalification process (with or without a test).

5.1.2.4 Expiry of validity of prequalification-status

The prequalification-status is reassessed by TenneT:

a) at least every five years [1]. The five-year term starts when TenneT approves the prequalification in the prequalification process.
When the validity period of five years has expired, the prequalification process must be undergone.

[5] Type approval currently only applies for FCR. See section 5.3.1 FCR Manual for BSPs [2].

In the case of re-qualification, the BSP is given the opportunity, 6 months before the prequalification-status expires, to start the prequalification process whereby the current expiration date is extended by 5 years in the event of early successful completion The BSP is responsible for keeping track of the validity period and must start a new prequalification process on its own initiative.

b) when technical or availability requirements have changed [1].
Changes to technical or availability requirements are considered by TenneT, depending thereon TenneT assesses whether a new prequalification process is required. After the notification from TenneT, the BSP has a maximum of 6 months (or shorter if point a also applies) to successfully undergo the new prequalification.

5.1.2.5 Exception for RPU/RPG transfers

FCR

If an entire RPU/RPG that is already prequalified for FCR changes from BSP and the new BSP already has a valid prequalification-status for FCR prior to the transfer, no new prequalification test needs to be performed for the RPU/RPG in question. An Application Form should, however be submitted. In this situation, the expiry date of the prequalification of the RPU/RPG remains unchanged from that which applied for the first BSP. In this situation both BSPs should inform TenneT.

aFRR/mFRRsa/mFRRda

A prequalification does not relate to the RPU/RPG but to a BSPs portfolio. Therefore, a TI can be transferred from one BSP to another BSP provided that the new BSP, prior to the transfer, already has a valid prequalification-status for the relevant service. The expiry date of the prequalification-status of the receiving BSP remains unchanged. The portfolio power of the transferring BSP must be greater than or equal to the prequalified power in order to keep the existing prequalification-status. In this situation both BSPs should inform TenneT.

5.1.3 Applying for the prequalification process

The prequalification process starts with the submission of an Application Form by a (potential) BSP, the ‘applicant’. The ‘Application Form’ is available on TenneT’s website. An explanatory note to the Application Form for the prequalification process is attached as Appendix A to this document.

5.1.3.1 Privacy

In the case of household customer connections that are going to supply as part of an RPU/RPG FCR, aFRR, mFRRsa, mFRRda or ROD, the applicant must inform TenneT about the fact that household customer connections are involved so that the necessary agreements[6] within the framework of privacy legislation can be started. For example, the applicant has an information obligation towards household customer

[6] Both between TenneT and BSP and between BSP and the household customer connections.

connections, in which it indicates that personal data is received and exchanged with the TSO.

An agreement between the applicant and TSO with regard to privacy and data handling must be established before applying for the prequalification process. In the agreement, the applicant states, for example but also at least, that the TSO will then share this data (in whole or in part) with DSO(s). TenneT has a model agreement for this, which can be requested from BSP@tennet.eu.

The submission of the prequalification Application Form and associated attachments may not take place by email when household customer connections are involved due to the personal nature of the data. A secured environment of TenneT should be used for exchanging information with TenneT (for instance: TransiT).

5.1.3.2 FCR

The SO-GL [[1], Article 155.3] states the following with regard to an application for prequalification to supply FCR:

"potential FCR provider shall submit a formal application to the reserve connecting TSO together with the required information of potential FCR providing units or FCR providing groups. Within 8 weeks from receipt of the application, the reserve connecting TSO shall confirm whether the application is complete. Where the reserve connecting TSO considers that the application is incomplete, the potential FCR provider shall submit the additional required information within 4 weeks from receipt of the request for additional information. Where the potential FCR provider does not supply the requested information within that deadline, the application shall be deemed withdrawn."

5.1.3.3 aFRR, mFRRsa and mFRRda

The SO-GL [[1], Article 159.3] states the following with regard to an application for prequalification to supply FRR:

"A potential FRR provider shall submit a formal application to the relevant reserve connecting TSO or the designated TSO together with the required information of potential FRR providing units or FRR providing groups. Within 8 weeks from receipt of the application, the reserve connecting TSO or the designated TSO shall confirm whether the application is complete. Where the reserve connecting TSO or the designated TSO considers that the application is incomplete they shall request additional information and the potential FRR provider shall submit the additional required information within 4 weeks from the receipt of the request. Where the potential FRR provider does not supply the requested information within that deadline, the application shall be deemed to be withdrawn."

5.1.4 Are Technical Installations connected to the DSO grid?

When TenneT has received the Application Form from the applicant, two actions will be undertaken. The first action consists of checking whether reserve providing units or groups of the applicant are connected to the network of the regional grid operator (DSO). If this is the case the following applies:

"During the prequalification of a reserve providing unit or group connected to its distribution system, each reserve connecting DSO and each intermediate DSO, in cooperation with the TSO, shall have the right to set limits to or exclude the delivery of active power reserves located in its distribution system, based on technical

reasons such as the geographical location of the reserve providing units and reserve providing groups." [[1], Article 182.4][7].

TenneT will inform the DSO about the prequalification application, due to the potential influence of the prequalification on (the voltage in) the grid. In addition, there may be planned work at the relevant location of a TI. These matters might form grounds for the DSO to object. The DSO's criteria can be made clear in advance, and the BSP is informed about the substance of possible objections.

With regard to reserve providing groups or units connected to the DSO grid, TenneT will therefore inform the relevant DSO(s) about the prequalification test up to 1 week before the prequalification test. There is information that is relevant for the DSO in the Application Form, for instance:

- BSP contact person
- Prequalification test time-window
- EAN code connection
- Rated power
- Product control range
- Total control range
- Type of Technical Installation

An explanatory note to this requested information is provided in Appendix A to this document.

TenneT will forward (part of) the Application Form to the relevant DSO. The DSO will give feedback to the BSP (with copy to the TSO) without delay if a prequalification test cannot take place due to a malfunction or scheduled maintenance at the proposed time.

If the prequalification test cannot take place at the proposed time (for the relevant connection/connections), an alternative time must be determined in consultation between DSO and BSP. When the DSO does not send a response within the term set to do so, this is taken to mean there is no objection.

Please note: In the case of a type approval or a portfolio change of FRR, no prequalification test is required. In that case the DSO will be informed of the change in the way described above.

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[7] Although outside the scope of this document because it concerns the activation of reserves and not the prequalification, the following also applies:
"Each reserve connecting DSO and each intermediate DSO shall have the right, in cooperation with the TSO, to set, before the activation of reserves, temporary limits to the delivery of active power reserves located in its distribution system. The respective TSOs shall agree with their reserve connecting DSOs and intermediate DSOs on the applicable procedures." [[1], Article 182.5]

5.1.5 Is a prequalification test needed?

In addition to checking for the applicant's connections in the DSO grid, TenneT will determine whether the applicant is required to perform a prequalification test.

Whether or not a prequalification test has to be done depends on the following factors:

Table 2: Necessity PQ-test

Product	CHANGE				Reprequalification (after 5 years)
	New portfolio	Add a new TI	Remove a TI	Change RPU or RPG composition	Current portfolio
FCR	PQ test	PQ test	No PQ test if TI was a separate RPU. PQ test if TI was part of RPU/RPG.	PQ test	PQ test
aFRR	PQ test	No PQ test	No PQ test[8]	n/a	PQ test unless delivery took place demonstrably in accordance with specifications last year
mFRRsa	No PQ test	No PQ test	No PQ test	n/a	PQ test unless delivery took place demonstrably in accordance with specifications last year
mFRRda	PQ test	No PQ test	No PQ test[8]	n/a	PQ test unless delivery took place demonstrably in accordance with specifications last year
ROD	No PQ test	No PQ test	No PQ test	n/a	No PQ test

[8] The prequalification-status expires if the remaining capacity in the portfolio falls below the minimum volume (bid aFFR 1MW and contract value mFFRda 20MW)

If a prequalification test has to be performed, the content and weight of the test will differ per product. The prequalification test requirements for each product are set out in the following appendices and some information is described starting from§5.1.7:

- FCR Appendix B;
- aFRR voluntary bids Appendix C;
- aFRR contracted Appendix D;
- mFRRsa Appendix E;
- mFRRda Appendix F.

5.1.6 Test scheduled in agreement with TenneT

If the applicant has to perform a prequalification test as part of the prequalification process, the applicant must align the scheduling with TenneT via the Application Form.

If TenneT so wishes, TenneT, or an independent third party designated by TenneT, must be admitted to the actual performance of the prequalification test. If TenneT chooses to be present, the applicant informs the TenneT parties about the relevant safety requirements, access requirements and other relevant matters. If it is desirable but not possible for TenneT to be present, this is a reason to regard the planning via the Application Form as not aligned.

Please note: As described in Appendix E and G, the prequalification test for the mFRRsa and ROD products does not entail a real 'test', but the applicant declares through documentation that the RPU/RPG is satisfactory.

5.1.7 Performing the prequalification test

At the time agreed with TenneT the applicant performs the prequalification test.

5.1.7.1 FCR

In order to pre-qualify a Technical Installation or group of TIs as a RPU or RPG for the supply of FCR, the RPU/RPG must be tested with regard to technical requirements. The prequalification test comprises a series of tests that should be performed. The requirements with regard to the prequalification test to supply FCR are set out in Appendix B to this document.

5.1.7.2 aFRR

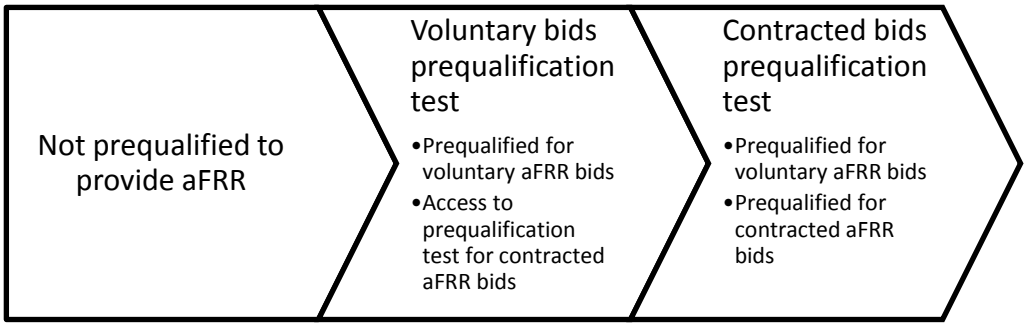
For a portfolio to pre-qualify to supply aFRR, the portfolio must be tested with regard to technical requirements as described below. It is important here to distinguish between the prequalification for voluntary aFRR bids and for contracted aFRR bids.

Voluntary aFRR bids

The requirements with regard to voluntary aFRR bids are set out in Appendix C to this document.

Contracted aFRR bids

In order to be able to prequalify with regard to contracted aFRR bids, a BSP must first pass the tests for voluntary aFRR bids and then an availability test specifically for contracted aFRR. Thus the following process arises:



The requirements with regard to the prequalification test for contracted aFRR bids are set out in Appendix D to this document.

5.1.7.3 mFRRsa

No prequalification test is needed for the prequalification to supply mFRRsa. The applicant is nonetheless asked to clarify several points. This is explained in Appendix E.

5.1.7.4 mFRRda

The requirements with regard to the prequalification test for mFRRda are set out in Appendix F to this document.

5.1.7.5 Reserve Power Other Purposes

No prequalification test is needed for the prequalification for supplying ROD. The applicant is, however, asked to clarify several points. This is described in Appendix G.

5.1.8 Providing prequalification report and/or required documentation

The applicant provides TenneT with:

- if a prequalification test has been performed: a report containing the results of the prequalification test and the original measuring data (as specified) used for the report;
- if no prequalification test has been performed: the required documentation as described for each service in the appendices B through G to this document.

Please note: For some products there is an example report which needs to be used for informing TenneT about the results. EAN codes (and any other personal data) of household customer connections may not be mentioned in the prequalification reports/documentation. If needed these can be referred to in a separate appendix. A secured environment for exchanging information with TenneT should be used for sending this (for instance: TransiT).

5.1.9 Evaluating the prequalification report and/or documentation

The report and/or the data of the prequalification test are checked by TenneT, or by an independent third party appointed by TenneT.

With regard to a prequalification test, the starting point for this assessment is that the report and/or data fully and unambiguously shows that the minimum requirements are met.

5.1.10 Prequalification report and/or documentation approved?

Only when the report/documentation provided is complete and unambiguous it can be determined whether or not the prequalification is approved. TenneT informs the applicant as to whether or not the report/documentation is complete. When the report/documentation is not complete and unambiguous TenneT informs the applicant of this and the applicant can improve the report/documentation and resubmit this.

At the time the assessment is carried out the prequalification test must not have taken place more than three months before the assessment.

5.1.11 Improving the prequalification report and/or documentation

When the report/documentation is not complete or is not unambiguous, the applicant must improve the report/documentation and resubmit this to TenneT.

Where applicable parts of the test that failed (instead of repetition of the complete prequalification test) could be repeated after TenneT's approval has been obtained.

5.1.12 Other PQ requirements approved?

Other prequalification requirements are assessed when:

- a prequalification test is not necessary; or
- the prequalification report and/or required documents have been approved.

These are the following:

Table 3: Other PQ-requirements

Product	Other prequalification requirements
FCR	▪ In order to be pre-qualified (for the first time), the applicant must be able to submit allocation messages in the way described in the 'FCR Manual for BSPs' [2]; ▪ The applicant must be able to submit measurement data in the way described in the 'FCR Manual for BSPs' [2] to TenneT; Please note: If it is an applicant's first FCR prequalification, the applicant is granted access to the platform at the end www.regelleistung.net.
Voluntary aFRR bids	▪ Able to make a successful bid through TenneT's automated systems (see [3]), to be demonstrated through the process qualification for aFRR bids;

	▪ Data connection with TenneT for the purpose of control and verification. This includes specifying the expected limits of signals to be exchanged.
aFRR contracted	▪ See voluntary aFRR bids; ▪ During an applicant's first contracted aFRR-prequalification, the applicant is granted access to the TenneT platform at the end.
mFRRsa	▪ Able to make a successful bid through TenneT's automated systems (see [3]), to be demonstrated through the process qualification for mFRRsa bids;
mFRRda	▪ During an applicant's first contracted mFRRda prequalification, the applicant is granted access to the TenneT platform; ▪ Successful end-to-end test (electronic message traffic; also known as Production Acceptance Test (PAT)).
ROD	▪ Able to make a successful bid through TenneT's automated systems, to be demonstrated through the process qualification for ROD bids;

Please note: The applicant is free to start/implement these other prequalification requirements simultaneously with the prequalification application.

5.1.13 Prequalified power

When the prequalification process has been successfully undergone, the RPU/RPG is pre-qualified to supply the relevant power (prequalification-status). The period of validity (five years) starts when TenneT approves a prequalification.

The applicant fills in the 'Overview_BSP_ENG' sheet in the Application Form and sends the form to TenneT in accordance with the set procedure. When the file contains information from household customer connections, email may not be used, but a secure environment for information exchange with TenneT should be used (for example: TransiT). This is explained in more detail in the Application Form.

If TIs of the RPU/RPG are connected to the DSO network, TenneT will inform the relevant DSO(s) per connection about the prequalification-status. TenneT also reports a de-registration or adjustment of a prequalification-status to the DSO(s) concerned. Synchronization between TSO and DSOs takes place at least once a year.

After the prequalification of the RPU/RPG has been approved, TenneT will inform the relevant applicant about this.

5.1.14 Qualification in case of new BSP

When an applicant is prequalified for FCR, aFRR, mFRRsa, or mFRRda for the first time, qualification as a BSP follows once a framework agreement for the service in question has been signed by both parties.

The BSP is included in the list of qualified BSPs on the TenneT website.

5.1.15 End

The prequalification process is terminated when the prequalification request has been rejected, or the prequalification process has not been successfully undergone. In which case no (additional) power is pre-qualified.

The prequalification process is also terminated if an applicant decides not to prequalify again. In this case, the prequalification-status of the relevant RPU/RPG for the relevant product expires (if applicable: from the time the change takes effect). When an RPU/RPG connected to the DSO grid is no longer prequalified, TenneT will inform the DSO(s) concerned about this.

An applicant has the option to abort the prequalification process at any time during the prequalification process. This consequently results in a rejection of the prequalification.

5.2 Terminating/withdrawing the prequalification-status of an RPU/RPG

TenneT is entitled to terminate/withdraw a prequalification-status at any time if:

- in providing TenneT with information during the process for prequalification, the pre-qualified BSP is found to be guilty of making false statements and/or submitting incorrect information;
- the above (i.e. meeting the minimum requirements) can no longer be verified;
- if in practice it appears, that the BSP does not meet, or no longer meets, the requirements of the current product specifications;
- the results of an audit that has been conducted and the outcome indicates shortcomings.

When the prequalified BSP no longer meets the minimum requirements after prior notice of default, TenneT will immediately suspend the prequalification-status. If the BSP still fails to meet the minimum requirements after being given a reasonable time to solve the issue, TenneT will inform the BSP in question of its intention to terminate/withdraw the prequalification-status and of the reason for this, in writing and no later than fifteen (15) days before the date on which the prequalification-status will be terminated.

If the BSP wishes to de-register a prequalification-status, the BSP fills in the ‘Withdrawal_PQ_Status_ENG’ and 'Overview_BSP_ENG' sheets in the Application Form and sends the forms to TenneT in accordance with the set procedure. When the file contains information from household customer connections, email may not be used, but a secure environment for information exchange with TenneT should be used (for example: TransiT). This is explained in more detail in the Application Form.

5.3 Time-line of the prequalification process

The time-line of the prequalification process is indicated in [[1] Article 155(3, 4); Article 159 (3, 4)]. The details of this are set out below.

a) An application for prequalification can be submitted at any time by sending the Application Form. Within eight weeks of receiving the formal application for prequalification, TenneT confirms whether the application is complete. If TenneT believes that the application is incomplete, TenneT will request the applicant to provide additional information. The applicant should provide the additional

required information within four weeks of receiving the request for additional information. If the applicant does not provide the requested information within this period, the application is deemed to have been withdrawn. Submitting the fully completed Application Form defines the start of the prequalification process.

b) In the case of a prequalification test, the BSP informs TenneT at least **10** working days prior to the start of the prequalification test about the starting time of the prequalification test.
c) In the case of a prequalification test at a TI in the DSO grid, TenneT informs the relevant DSOs at least 1 week prior to the start of the prequalification test about the prequalification test.
d) From the time of TenneT's confirmation of the submission of the fully completed Application Form, the BSP has 6 weeks to submit all other required documentation /reports/test reports.
e) Within 6 weeks of submitting the documentation/reports/test reports, TenneT assesses the information provided and decides whether the criteria for prequalification have been met. TenneT informs the applicant about its decision. If not all required reports and/or data and/or documentation are made available, the application is deemed to have been withdrawn.
f) The time at which TenneT approves a prequalification-status defines the start of the maximum validity period of 5 years for the relevant prequalification-status.

The points a, d and e mentioned above regard maximum lead times. The sum of these gives a maximum lead time of 5 months. See Figure 2.

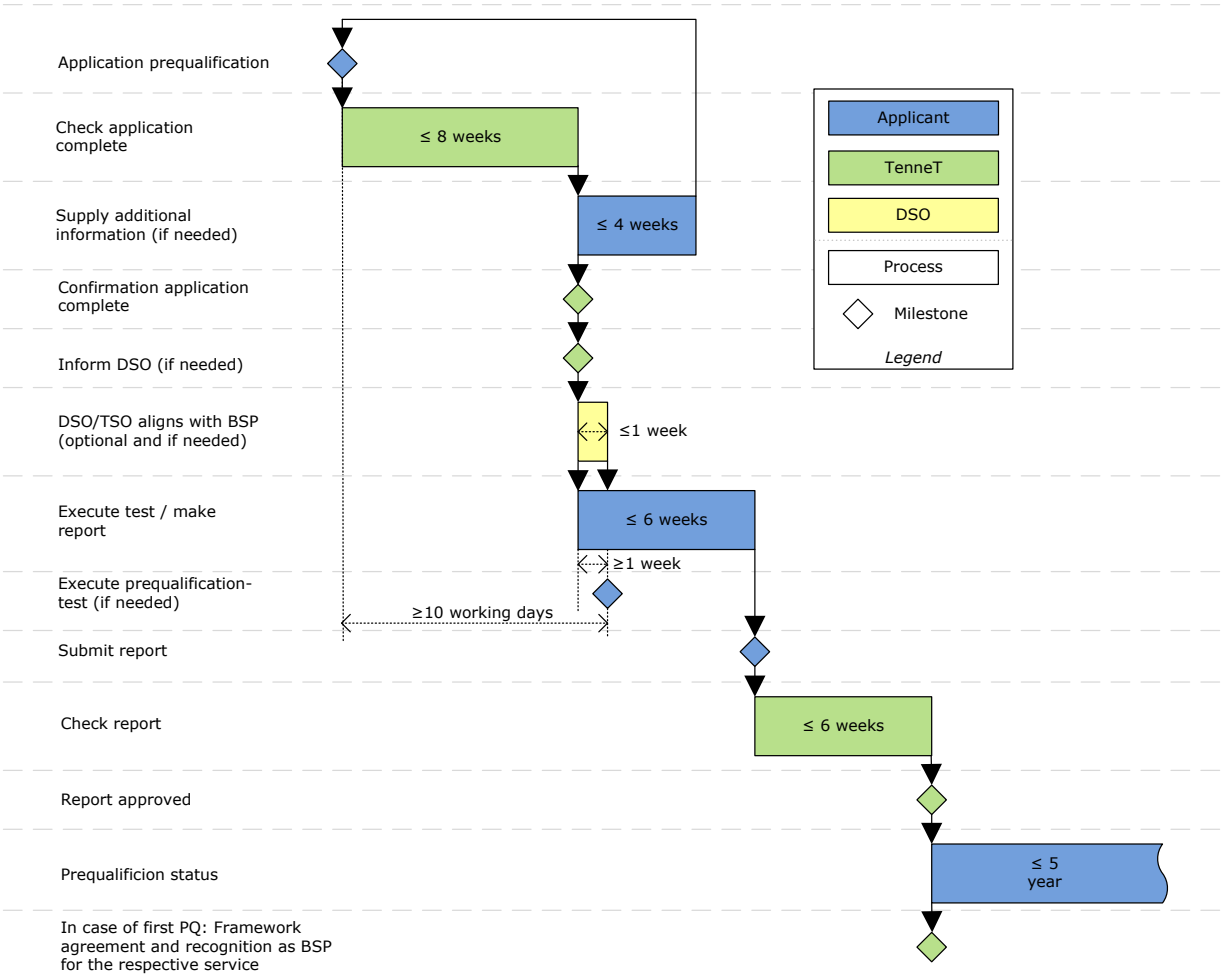


Figure 2: Lead times in prequalification process (assuming prequalification is successful) for FCR and FRR.

6. General rules and regulations

6.1 General rules

The general rules below apply to the process for (application for) prequalification:

- No costs of any kind whatsoever incurred by the applicant in connection with the prequalification process, the application for prequalification and/or for subsequent tenders will be reimbursed by TenneT.
- TenneT reserves the right to check the total process of a BSP for supplying FCR and/or FRR for correctness by means of an audit at its expense, carried out by an independent party.
- A prequalification test entails an imbalance risk. The risk of any imbalance costs arising from the prequalification test lies with the BRP(s) of the TI(s) that the applicant wishes to prequalify. It is the responsibility of the connection and/or applicant to inform the relevant BRP(s) and/or supplier(s) about the prequalification test. However, standard procedures are followed for the prequalification to supply contracted aFRR (because in this case the prequalification for voluntary aFRR bids has already been successfully completed).
- A prequalification test could lead to an increase of grid connection costs to be paid by the one who is connected to the grid.

6.2 General regulations

6.2.1 Burden of proof

The BSP is obliged on request of TenneT, to prove that FCR and/or FRR is supplied in accordance with the requirements.

TenneT also checks on the basis of its own (online) information whether FCR and/or FRR is supplied in accordance with the requirements.

6.2.2 Adjusting the minimum requirements

TenneT is entitled, taking into consideration the technical developments and experience with the applicable regulations, to change the requirements which are applicable to the BSP and to require corresponding documentary evidence, or, if necessary to perform a new prequalification.

6.2.3 Language

The process is performed in the Dutch or English language.

7. Additional questions

Questions relating to the prequalification process can be directed to TenneT at:

- BSP@tennet.eu

8. Bibliography

[1] European Commission, REGULATIONS COMMISSION REGULATION (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation, Brussels, 2017.

[2] TenneT TSO B.V., “Handboek FCR voor BSP's,” 21 August 2019 (or newer). [Online]. Available: https://www.tennet.eu/nl/elektriciteitsmarkt/ondersteunende-diensten/documenten-fcr/. [Accessed 2 October 2019].

[3] TenneT TSO B.V., “Handleiding bieden,” 21 January 2019 (or newer). [Online]. Available: https://www.tennet.eu/nl/elektriciteitsmarkt/ondersteunende-diensten/documenten-afrr/. [Accessed 3 July 2019].

[4] TenneT TSO B.V., “Productinformatie automatic Frequency Restoration Reserve,” 18 December 2018 (or newer). [Online]. Available: https://www.tennet.eu/nl/elektriciteitsmarkt/ondersteunende-diensten/documenten-afrr/. [Accessed 22 February 2019].

[5] TenneT TSO B.V., “Uitvoeringsregels met betrekking tot Net- en Systeemcode,” January 2018 (or newer). [Online]. Available: https://www.tennet.eu/nl/elektriciteitsmarkt/ondersteunende-diensten/documenten-algemeen/. [Accessed 22 February 2019].

[6] TenneT TSO B.V., “Productinformatie mFRRda (Incident Reserve / Noodvermogen),” 13 November 2018 (or newer). [Online]. Available: https://www.tennet.eu/nl/elektriciteitsmarkt/ondersteunende-diensten/documenten-mfrrda/. [Accessed 22 February 2019].

[7] TenneT TSO B.V., “Productspecificaties reservevermogen overige doeleinden,” 11 April 2019 (or newer). [Online]. Available: https://www.tennet.eu/nl/elektriciteitsmarkt/ondersteunende-diensten/documenten-reservevermogen-overige-doeleinden/. [Accessed 3 July 2019].

Appendix A. Explanatory note to the Application Form prequalification

The 'Application Form' is available as a separate file on TenneT's website. A separate form should be submitted for each RPU or RPG.

Please note: An agreement between the applicant and TSO with regard to privacy and data handling must be established before applying for the prequalification when household customer connections are involved.

The submission of the prequalification Application Form and associated attachments may not take place by email when household customer connections are involved due to the personal nature of the data! A secured environment should be used for exchanging information with TenneT (for instance: TransiT).

Explanatory note to the different sheets of the Application Form

The Application Form contains the following sheets which are used in for different cases.

- Instruction_ENG
  Gives general information about the sheets and sending the file(s) to TenneT.

- PQ_application_ENG
  Used for (first) application of a prequalification process.

- Overview_BSP_ENG
  Used when there is an update of an existing prequalification-status.

- Withdrawal_PQ-status_ENG
  Used to withdraw the PQ-status of a RPU/RPG.

Explanatory note to the terms used in the Application Form

The Application Form contains the following entry fields. Definition: positive/upward (+) is defined as input to the system, negative/downward (-) is defined as withdrawal from the system.

- Name applicant
  Name of the party applying for the prequalification process. This information is required for registering the final prequalification-status.

- EIC-code applicant (only needed for FCR)
  EIC code of the party applying for the prequalification process. This information is required for registering the final prequalification-status.

- EAN-code applicant
  EAN code of the party applying for the prequalification process. This information is required for registering the final prequalification-status.

- RPU/RPG name
  Applicant specifies a name for the RPU/RPG to be prequalified. This information is used for registering the final prequalification-status.

- RPU/RPG code (if applicable) (optional)
  The applicant can specify a code (short name) for the RPU/RPG to be pre-qualified. This information, if specified, is used for registering the final prequalification-status.

- Prequalification application for balancing service/transport service
  Balancing service with regard to which the applicant is seeking prequalification. This information is required for registering the final prequalification-status.

- Volume to be prequalified for balancing/transport service (positive; MW)
  The positive volume which the applicant is seeking to prequalify for the stated service and the stated RPU/RPG. This information is required for assessing the reports and for registering the final prequalification-status.

- Volume to be prequalified for balancing/transport service (negative; MW)
  The negative volume which the applicant is seeking to prequalify for the stated service and the stated RPU/RPG. This information is required for assessing the reports and for registering the final prequalification-status.

- Test date/day section
  If applicable, date/dates on which the prequalification test will be performed. This information is required for aligning the test (with the DSO/TSO) and to allow TenneT to attend if they choose to.

- Contactpersons prequalification process
  Name of the applicant's contact(s) with regard to the prequalification process. This information is required for communications between the applicant and TenneT (and DSOs, if needed) during the prequalification process.

- Tel. number
  The telephone number of the applicant's contact with regard to the prequalification process. This information is required for communications between the applicant and TenneT (and DSOs, if needed) during the prequalification process.

- Email address
  The email address of the applicant's contact with regard to the prequalification process. This information is required for communications between the applicant and TenneT (and DSOs, if needed) during the prequalification process.

- Tel. number emergency service
  The telephone number of the applicant's breakdown service with regard to the prequalification process. This telephone number must be reachable 24 hours a day, 7 days a week. This information is required for communications between the applicant and TenneT (and DSOs, if needed) during the prequalification process.

Per TI (if part of RPU/RPG)

- TI name
  Name of the TI. This information is used for communication about the TI.

- EAN-code of the connection
  EAN code of the TI (if a part) of the RPU/RPG to be pre-qualified. This information is required for aligning with the DSO (if needed).

- Household customer [Yes/No]

In the case of household customer connections that are going to supply as part of an RPU/RPG FCR, aFRR, mFRRsa, mFRRda or ROD, the applicant must inform TenneT about the fact that household customer connections are involved so that the necessary agreements[9] within the framework of privacy legislation can be started. This information is required for communications between the applicant and TenneT (and DSOs, if needed) during the prequalification process.

- Pnom [MW]
  Rated power of the Technical Installation. The value should be defined as a positive numerical value as 'the maximum of absolute demand and absolute production. Or as an equation:
  $$P_{nom} = \max(|P_{load}|, |P_{generation}|)$$
  This information is required for the prequalification process.

- Control range balancing service/transport service (positive; MW)
  The applicant applies for a prequalification process for a specific service and for a specific RPU/RPG. This value describes the maximum amount that the relevant TI contributes to the positive power to be prequalified. The value should be defined as a positive numerical value. This information is required for aligning with DSOs (if needed) and for assessing the reports.

- Control range balancing service/transport service (negative, MW)
  The applicant applies for a prequalification process for a specific service and for a specific RPU/RPG. This value describes the maximum amount that the relevant TI contributes to the negative power to be prequalified. The value should be defined as a negative numerical value. This information is required for aligning with DSOs (if needed) and for assessing the reports.

- Total control range (positive, MW)
  In addition to the positive contribution to the volume to be pre-qualified in this prequalification process, a TI might also (already) contribute to other balancing services. The value to be entered here is the sum of **all** pre-qualified volumes (for balancing services) and the volume to be prequalified for this particular TI in this application. If there are other applications for this TI or prequalification processs already in progress, the volumes thereof must also be included. The value should be defined as a positive numerical value. The minimum permitted value is equal to 'Control range of the balancing service/transport service (positive; MW)'. This information is required for aligning with DSOs (if needed).

- Total control range (negative, MW)
  In addition to the negative contribution to the volume to be pre-qualified in this prequalification process, a TI might also (already) contribute to other balancing services. The value to be entered here is the sum of **all** pre-qualified volumes (for balancing services) and the volume to be prequalified for this particular TI in this application. If there are other applications for this TI or prequalification processs already in progress, the volumes thereof must also be included. The value should be defined as a negative numerical value. The maximum permitted value is equal to 'Control range of the balancing service/transport service (negative, MW)'. This information is required for aligning with DSOs (if needed).

- DSO/TSO (if applicable)
  If the TI is a connection to the DSO grid, the name of the DSO must be specified. This information is required for aligning with DSOs (if needed).

- Type asset (e.g.; production/consumption/storage)

[9] Both between TenneT and BSP and between BSP and the household customer connections.

Optional field: Here the applicant can specify what type of TI is involved for the purpose of aligning with the DSO. This information is required for aligning with DSOs (if needed).

- Maximum ramp rate (MW/s)
  Optional field: here the applicant can specify the maximum ramp rate of the TI for the purpose of aligning with the DSO. The value must be specified as a positive number and refers to the maximum of the absolute values of downward or upward adjustment speed as indicated in the following equation.

$$Ramprate_{max} = \max(|Ramprate_{max,+}|, |Ramprate_{max,-}|)$$

  This information is required for aligning with DSOs (if needed). If no value is specified, the DSO will use an assumption.

- Type approval application? If yes, please fill out corresponding EAN.
  If the applicant wishes to make use of type approval (only applicable for FCR), the EAN of the reference TI must be entered in this field. The reference TI forms part of an RPG that has already been pre-qualified by this applicant. The TI and the reference TI should:
  - be of the same type (defined more specifically than, for instance in the field 'Type of Technical Installation (production/customer/storage));
  - have a rated power < 1.5 MW;
  - demonstrably have the same control behaviour.

  This information is required for assessing whether a type approval might apply.

- Remarks (enter here if, in the case of type approval, it concerns a TI behind a connection)
  If the reference TI (see also the field: 'Type approval application? If yes, fill in the EAN agreement') is not the only TI behind a connection, the applicant should add an explanatory note. This information is required for assessing whether a type approval might apply.

Appendix B. FCR Prequalification test

The test protocol, the requirements and reporting obligations for the FCR Prequalification test are located in [2].

Appendix C. Voluntary aFRR bids prequalification test

To be eligible for voluntary aFRR bids, the applicant must, at its own discretion and in alignment with TenneT, perform a number of tests to demonstrate that it meets the requirements for the supply of voluntary aFRR bids.

The tests should at least demonstrate that:

- aFRR bids with an regulating speed of at least the percentage specified in [4], can be regulated upwards or downwards;
- a power change is visible within 30 seconds after a set point change.

The applicant submits a report based on the tests to TenneT in which the tests and the results are described. This report has a structure agreed with TenneT and describes at least the following:

- date and time of the test;
- time synchronous values of the sent set point, the measured power (per RPU and RPG) and the reference signal as data and in graph form;
- analyses in which, based on the data, it is illustrated that:
  - the power change is visible within 30 seconds after a set point change;
  - the power change is in line with the power agreed in advance with TenneT;
  - the power agreed with TenneT can be activated within the automatic FRR activation time;
- explanatory note to the structure/method of the reference signal.

The applicant must store the original measurement data (including underlying data per TI) of the test with a resolution of at least once every 4 seconds and keep it for 5 years, or until a repeat of the prequalification. TenneT can request these data for control purposes.

Appendix D. aFRR contracted bids prequalification test

The test described here supplements the test for voluntary aFRR bids.

The prequalification tests should be done with regular operational settings. When a BSP is only prequalifying for either upward or downward regulating it only needs to perform the parts in the direction being offered.

To show that the BSP is in a position to make bids and subsequently to deliver in conformity with specifications, the following applies:

a) the BSP is expected for at least one consecutive week to make bids for each ISP for upward and/or downward regulating, with a volume to be agreed with TenneT for each of the categories in which it intends to make a bid (upward or downward adjustment or both);
b) during this consecutive period the BSP is actually called at least 10 times; the activations in this period should furthermore at the very least meet the following requirements:
    a. at least two activations for downward regulating (not applicable when there is only upward regulating power);
    b. at least two activations for upward regulating (not applicable when there is only downward adjustment power);
    c. at least two activations between 8 am and 8 pm;
    d. at least two activations between 8 pm and 8 am;

It is up to the BSP to make bids such that sufficient activations occur to be able to meet the prequalification requirements.

In the event of an inadequate response[10] in the consecutive one-week period, the prequalification test will be rejected unless TenneT decides on the basis of additional information provided by the BSP that an inadequate response does not have to be taken into account because, for example, the cause is unlikely to reoccur.

The BSP submits a report based on the tests to TenneT in which the tests and the results are described. This report has a structure agreed with TenneT upfront and describes at least the following:

- date and time of the test;
- time synchronous values of the sent set point, the measured power (per RPU and RPG) and the reference signal as data and in graph form;
- an analysis in which, based on the data, it is illustrated that:
    - the power change can be observed within 30 seconds after a set point change;
    - the power change is in line with the activated power;
    - the power agreed with TenneT can be activated within the automatic FRR activation time;

[10] Inadequate response by a BSP means that a BSP upon activation by TenneT does not act in accordance with the relevant regulating instruction or does not meet the specifications (Response time, regulating speed) as described in the product specification.

- explanatory note to the structure/method of the reference signal.

The BSP must store the original measurement data (including underlying TI) of the test with a resolution of at least once every 4 seconds and keep it for 5 years, or until a repeat re-qualification. TenneT can request these data for control purposes.

Appendix E. mFRRsa prequalification test

The applicant demonstrates by means of a valid signed declaration that it meets the requirements set in [3] and [5].

The declaration includes at the very least:

- a list of the installations with which mFRRsa is going to be supplied, including:
  - EAN code of the connection;
  - power;
  - preparation period;
  - supply period;

Appendix F. mFRRda prequalification test

For prequalification to supply mFRRda, the applicant must, at its own discretion and in alignment with TenneT, do an activation test. The activation is performed by the applicant itself. During this, an amount of power, to be agreed with TenneT, which meets the requirements set by TenneT in the document 'Product Information mFRRda (Incident Reserve / Noodvermogen)' [6], must be created. The following applies:

- The applicant fills out the application form with all Technical Installations (TIs) (one row per EAN) which he wants to prequalify.
- TenneT makes a selection of TIs that will be tested synchronously (i.e. all simultaneously) based on power and type. TenneT selects at least 5 TIs which together have a summed mFRRda power of at least 5MW.
    - If the applicant specifies 5 TIs or less, all TIs will be selected and need to be tested synchronously.
    - If the applicant has already tested one or multiple TIs himself, the applicant may mention this on the application form. TenneT can consider this information and exclude these TIs from the selection (other TIs will then be selected instead). This however is optional and never guaranteed.
- The selected TIs must synchronously (i.e. all simultaneously) be tested. The mFRRda power must be delivered during the test for at least 60 minutes.
- The mFRRda power which actually must be activated during the prequalification test with the selected TIs is at least 5MW and must correspond to the setpoint sent by the applicant. This means that partial activation of the selected TIs is allowed during the mFRRda prequalification test.
- The activated power during the mFRRda prequalification test must be divided over the selected TIs with a distribution which is agreed upon with TenneT beforehand.

The test activation shows at the very least that the requirements described in [6] are met. In case the applicant wishes to prequalify for both up- and downward mFRRda, the test must be executed for both directions.

The applicant must specify the technical and functional specifications of each operating resource that is used by the applicant for the purpose of supplying mFRRda.

The applicant should submit a report to TenneT in which the tests and the results thereof are described. This report has a structure as prescribed by TenneT and describes at least the following:

- date and time of the test;
- time synchronous values of the sent set point, the measured power (per RPU and RPG) and the reference alert as data and in graph form;
- an analysis in which, based on the data, it is illustrated that the power to be pre-qualified can be activated within the activation time set in [6].

The format to be used can be found on the TenneT website.

The applicant must store the original measurement data (including underlying TI data) of the test with a resolution of at least once every 5 minutes and keep it for 5 years, or until a repeat re-qualification. TenneT can request these data for control purposes.

Appendix G. Reserve Power Other Purposes (ROD)

To obtain a prequalification-status for ROD and recognition as a TSP, no form needs to be submitted if TenneT has received a bid submitted by the TSP between 14 March 2018 and 13 March 2019 inclusive. In all other cases, however, an application is required. The prequalification to supply ROD is comparable to that for mFRRsa. The applicant demonstrates by means of a valid signed declaration that it meets the requirements set in [3] [5] [7].

The declaration includes at the very least:

- a list of the installations with which ROD is going to be supplied, including:
  - EAN codes of the connections and where applicable the same EAN codes as those used for submitting T prognoses;
  - power per connection;

While prequalification for the provision of balancing services leads to recognition as a BSP, a prequalification for ROD leads to recognition as a TSP. The general regulations and rules in Chapter 6 also apply for the prequalification to supply ROD.

Additional questions relating to the prequalification process to supply ROD can be directed to TenneT at: ProcesspecialistenTRS@tennet.eu.