European Network of
Transmission System Operators
for Electricity

ENTSO-E
OUTAGE TRANSPARENCY PROCESS
IMPLEMENTATION GUIDE

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1

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NOTE CONCERNING WORDING USED IN THIS DOCUMENT

The force of the following words is modified by the requirement level of the document in which they are used.

- SHALL: This word, or the terms “REQUIRED” or “MUST”, means that the definition is an absolute requirement of the specification.
- SHALL NOT: This phrase, or the phrase “MUST NOT”, means that the definition is an absolute prohibition of the specification.
- SHOULD: This word, or the adjective “RECOMMENDED”, means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
- SHOULD NOT: This phrase, or the phrase “NOT RECOMMENDED”, means that there may exist valid reasons in particular circumstances when the particular behaviour is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behaviour described with this label.
- MAY: This word, or the adjective “OPTIONAL”, means that an item is truly optional.

33

Revision History

Version	Release	Date	Comments
1	0	2013-06-24	First version
2	0	2013-09-12	Version taking into account the comments issued during the Public Consultation.
3	0	2014-01-24	Version taking into account comments in addition to correcting some typing errors. Alignment of the models and attribute names with the CIM model following integrity check. Align Dependency table Approved by Market Committee on 2014-02-04.
4	0	2015-01-08	This version takes into account the EMFIP corrigendum version 5. The following changes have been made: • Cardinality of association between Asset_RegisteredResource and Asset_MktPSRType has its multiplicity changed from “1..1” to “0..1 Outage document: provide clarifications in section 4.9 about the use of reason codes.
4	1	2015-10-29	Update of the dependency table in chapter 4.3.4 of the columns for Art. 10(a) and 10(b) for impact of outage on cross border allocation when flow based is used (not used).
4	2	2016-04-28	Maintenance request EMFIP30: The attributes based on ESMP_ActivePower has the following constraints: *The maximum length of this information is 17 numeric characters.* *The number of decimal places identifying the fractional part of the quantity is limited to one (1) only.* Change has been made in §**Error! Reference source not found.**.
5	0	2016-06-17	Maintenance request EMFIP31: For consumption unit outages, i.e. articles 7.1.a&b, Transparency Platform publishes aggregated values only. Reason can not be aggregated. Hence the attribute is relevant in an upload scenario only. In the contextual model in chapter 4.1 and in the class assembly model in chapter 4.2, change cardinality of Reason from 1..* to 0..* in the association to Unavailability_MarketDocument. In the dependency table in chapter 4.3.4, column for Art. 7(a) and 7(b), row Reason, change to “Used only for upload transmissions”.
5	1	2019-02-12	Added chapter 4.5.1 to advice users about the correct use of the Timeseries. **Approved by MC.**
5	2	2022-05-10	Maintenance request EMFIP79, introducing submission of other transparency market information document (OTMI): Figure 1 updated with OTMI submission use case. Figure 2 updated with OTMI flows Chapter 4.2 - dependency table for OTMI added Removed chapter 6.1 Unavailability market class specification. All attributes now reflected in Outage dependency table.

			Editorial corrections. **Approved by MC.**

CONTENTS

List of figures

List of tables

1. Introduction

This implementation guide is one of the implementation guides drafted by ENTSO-E to enable the establishment of a common level of fundamental data transparency as per the Regulation on transparency and provision of information in European electricity markets and REMIT.

This implementation guide focuses on defining the information to be exchanged for the publication of the unavailability data and other transparency market information (OTMI) as defined in the transparency regulation, REMIT, the transparency platform detailed description and the transparency platform Business Requirements Specification.

Its purpose is to facilitate the provision of unavailability and other transparency market information to a central information platform. This platform should enable the establishment of a coherent and consistent view of the European wholesale electricity market by all the market participants as well as to interested European consumers.

The implementation guide is one of the building blocks for using UML (Unified Modelling Language) based techniques in defining processes and documents for interchange between actors in the electrical industry in Europe.

This guide provides a standard for enabling a uniform layout for the transmission of unavailability data between the European electricity market participants and the Transparency platform via the Data Provider (who may be the Transmission System Operator). The information model within the guide shall ensure that a common interface can be provided between different software solutions.

2. References

1. Commission Regulation No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council. (note: all articles mentioned in the current document come from this regulation).
2. Central Information Transparency Platform Business Requirements Specification.
3. The ENTSO-E Harmonised Role Model.
4. A Common Identification System for the Energy Industry, The Energy Identification Coding Scheme – EIC.
5. The ENTSO-E Code List.
6. IEC 62325-301, Framework for energy market communications Common information model (CIM) Extensions for markets.
7. IEC 62325-351, Framework for energy market communications CIM European market model exchange profile
8. IEC 62325-450, Profile and context modelling rules.
9. IEC 62325-451-1, Framework for energy market communications The acknowledgement document.
10. IEC 62361 part 100, Naming and design rules for CIM profiles to XML schema mapping.
11. The introduction of different time series possibilities (CurveType) within ENTSO-E electronic documents.
12. Unavailability document UML model and schema
13. Other Transparency Market Information document UML model and schema
14. Annex 7 of REMIT Manual of Procedures on transaction data, fundamental data and inside information reporting, Version 7

3. The unavailability process overview

3.1. Breakdown of the unavailability process

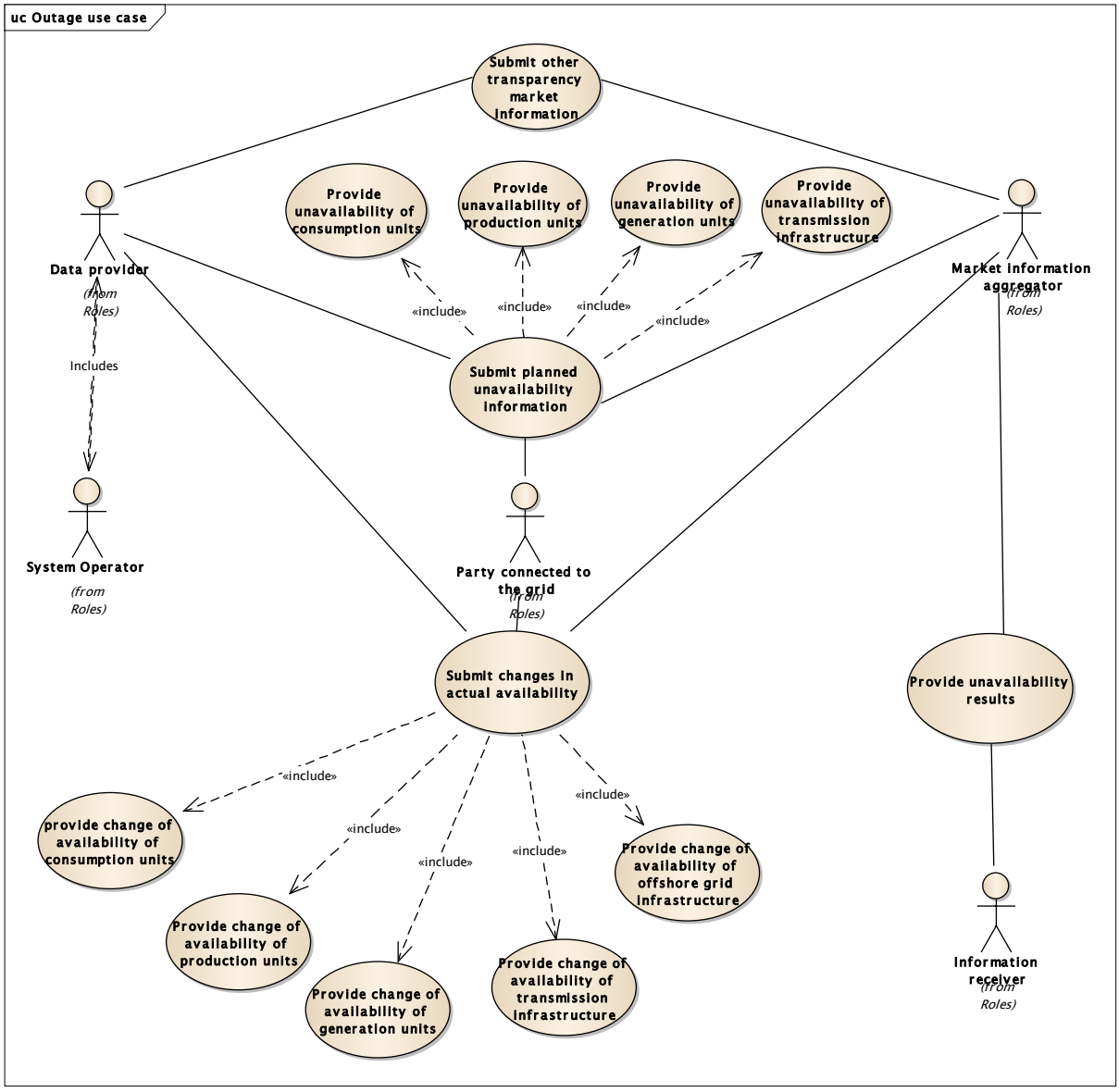

Figure 1: Information exchange for the provision of unavailability information and OTMI

The provision of unavailability and OTMI is relatively straightforward and is basically broken down into three use cases: the provision of planned unavailability information, provision of changes in actual availability and submission of OTMI. The platform makes the information provided in the three initial use cases available to the public as soon as any information is received.

The provision of unavailability information can be broken down into three categories:

1. The provision of planned or changes in actual consumption unavailability that mainly concern the unavailability of large consumption units.

2. The provision of planned or changes in actual transmission unavailability that mainly concern the unavailability of parts of the transmission infrastructure.

136 The provision of planned or changes in actual generation unavailability that mainly concern the
137 unavailability of generation and production units.

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139 **3.2 Applicable EDI documents**

140 This implementation guide assumes the use of the following EDI documents and contextual and
141 assembly models (also referred to as XSD or schema versions):

142 **Table 1 – Applicable EDI documents**

EDI document	version
Unavailability market document	urn:iec62325.351:tc57wg16:451-6:outagedocument:4:0
Other transparency market information document	urn:iec62325.351:tc57wg16:451-n:otmidocument:1:0

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4. The unavailability & OTMI processing sequence

4.1. Generic processing sequence

The unavailability process basically follows two different periodicities; a regular periodicity for the provision of the planned unavailability and an event-based periodicity for the provision of changes in actual availability. The OTMI follows an event-based periodicity.

The periodicities basically follow the same information sequence.

Following the reception of an unavailability market document or OTMI document, the acknowledgement business process as per IEC 62325-451-1 shall be applied. In particular, the Data provider shall receive an acknowledgement stating whether the document has been accepted or rejected and the reasons for the rejection.

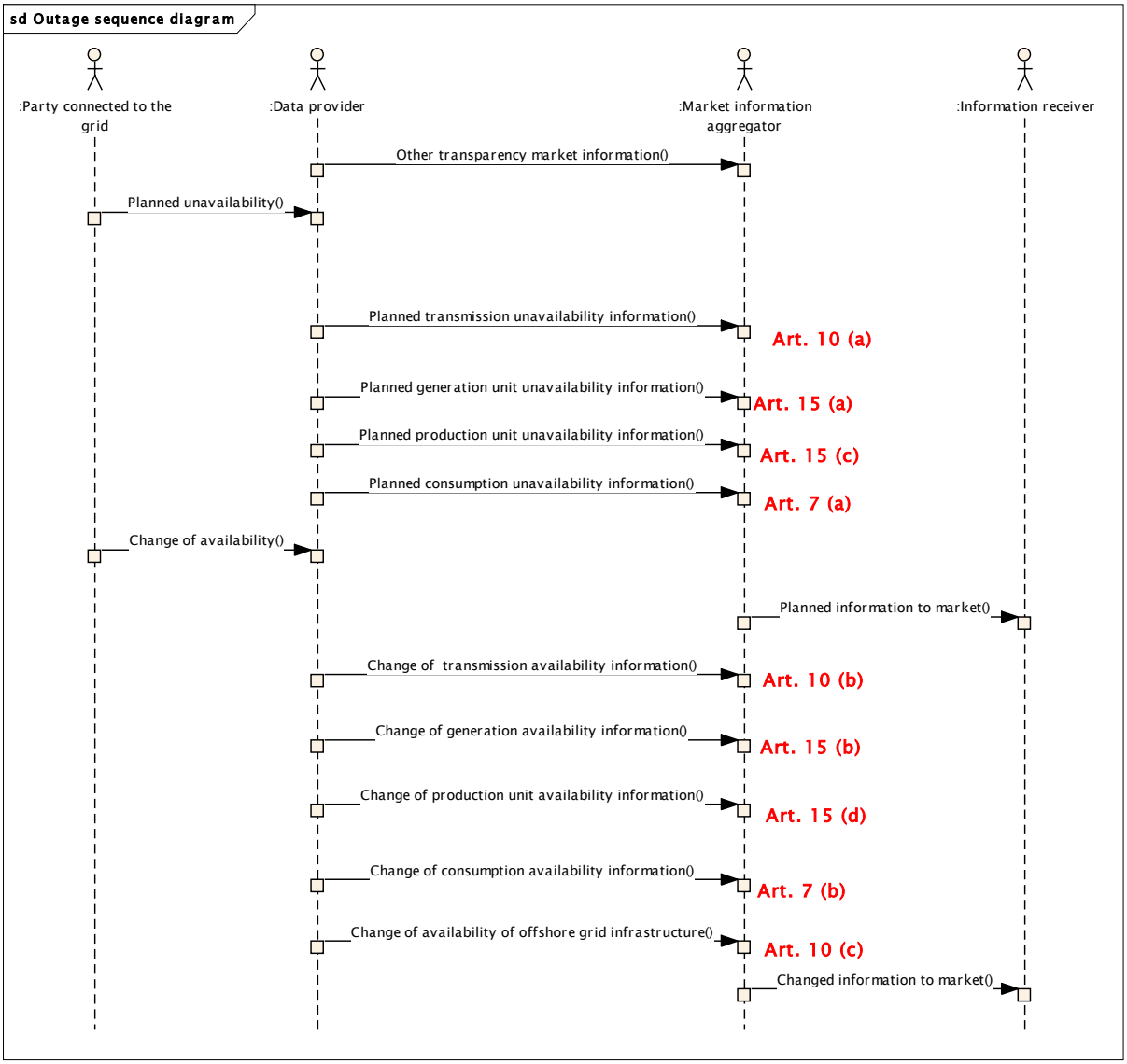

Figure 2: Generic unavailability process sequence

Note on Figure 2: The unavailability market document is used for all exchanges describing outages. The OTMI document is used for exchange of other transparency market information, describing events that are likely to significantly affect wholesale energy prices but are less structured (corporate or market developments, for example). The OTMI document may also be used to describe events that do not have a well-defined end date and time, such as mothballing and commissioning of new grid infrastructure.

4.2. Rules governing the OtherTransparency Market Information Document

4.2.1. The transmission of other transparency market information (OTMI)

Each OTMI should be transmitted in a single document with the identification of the document being used as the identification of the OTMI in question.
An OTMI document may be revised using the revision number. The latest revision of the document provides the current state of the information provided

4.2.2. Status information

An OTMI document when transmitted may have three states, it is by default always active or it has the status of cancelled or withdrawn.

A cancellation is foreseen where the information is no longer relevant.

A withdrawal is foreseen where there has been an error in the transmission of the information.

4.2.3. Document instance implementation

The XML document described in this implementation guide shall be used for the upload of information to the transparency platform; they shall also be used for the download of information to market participants in order to enable automatic processing of the information within their systems.

Table 2 - OTMI dependency table

Class	Attribute	Use of attribute
OtherTransparencyMarketInformation_MarketDocument	mRID: ID	Used
	revisionNumber	Used
	type	B47
	sender_MarketParticipant.mRID	EIC of the data provider
	sender_MarketParticipant.marketRole.type	A04 = System Operator
	receiver_MarketParticipant.mRID	10X1001A1001A450 = EIC of the ENTSO-E transparency platform
	receiver_MarketParticipant.marketRole.type	A32 = Market information aggregator
	createdDateTime	Used
	docStatus	A05 - Active (default) A09 - Cancelled A13 - Withdrawn
	publication_DataAndOrTime.dateTime	Used
	start_DateAndOrTime.	Used
	end_DateAndOrTime.	May be used
	reason.code	A95 - Complimentary information
	reason.text	Used

4.3. Rules governing the Unavailability Market Document

4.3.1. The transmission of unavailability information

Each unavailability (planned maintenance or forced unavailability) should be transmitted in a single document with the identification of the document being used as the identification of the unavailability in question.
An Unavailability Market Document may be revised using the revision number. The latest revision of the document provides the current state of the unavailability.

4.3.2. Coding scheme

A01 = EIC coding scheme is the single supported coding scheme.

4.3.3. Status information

An unavailability document when transmitted may have two status, it is by default always active or it has the status of cancelled or withdrawn.
A cancellation is foreseen when a planned unavailability is no longer expected to occur.
A withdrawal is foreseen where there has been an error in the transmission of the information.
Note that an unavailability is deemed terminated when its end date is past. If the end date approaches and the unavailability is always in vigor the data provider must provide an update to the unavailability with a new end date.

4.3.4. Document instance implementation

The XML documents described in this implementation guide are to be used for the upload of information to the central transparency platform; they may also be used for the download of information to market participants in order to enable automatic processing of the information within their systems.
Consequently attributes that describe basic configuration information (such as name, voltage level, etc.) have been included in the XML documents as optional attributes that may be used only in the case where information is downloaded from the platform. This information shall not be used in the case where information is uploaded to the platform.

4.3.5. Rules governing the timeseries class

A time series shall exist to describe a specific piece of an unavailability situation. It conveys the data related to the unavailability. For consumption or generation unit unavailability it identifies the available capacity during the event. For transmission asset unavailability it identifies the impact on cross zonal capacity per direction.
In order to send or receive more efficiently Outage XML files from Data Providers, you have to follow some best practices: All ESMP documents can have zero/one or more Periods per Timeseries. The number of periods within a Timeseries as characterized by the resolution must completely cover the time interval described by the start and end dates and times declared within the time series.
For that reason, if you are going to send some periods for the same Timeseries object, there's no need to repeat the same Timeseries. Rather, you should define once the Timeseries and introduce on it the different periods you want to send. Within this context, it should also be noted that the transparency platform treats each time series as an individual outage.

4.3.6. Rules governing all names attributes

The maximum length of the name is 35 alphanumeric characters. This is due to Transparency Platform limitations and not the schema. This applies to the following attributes:

- Production_registeredResource.name
- Production_registeredResource.psrtype.powersystemresources.name
- Asset_registeredResource.name
- Asset_registeredResource.location.name

4.3.7. Rules governing the nominal power

The maximum length of this information is 17 numeric characters (decimal mark included). This is due to Transparency Platform limitations and not the schema. The number of decimal places identifying the fractional part of the quantity is limited to one (1) only.

4.3.8. Rules governing the Series_Period class

The identification of the period of time corresponding to a given time interval and resolution. The series period class provides the market time unit information for:

- Available capacity in the Available_Period class, the available consumption capacity, generation capacity or production unit capacity, or the impact on cross border capacity

OR

- wind power feeding capacity in the WindPowerFeeding_Period class, the offshore wind power feed in capacity to the transmission infrastructure

for a given unavailability.

There may be several series period classes for a time series per object type (installed, unavailable or wind power feed-in). The time interval covered by the period shall fall within the the start and end dates and times declared within the time series.

4.3.9. Rules governing the quantity

All quantities are non-signed values.

The maximum length is 17 alphanumeric characters (decimal mark included). This is due to Transparency Platform limitations and not the schema.

The number of decimal places identifying the fractional part of the quantity depends on local market rules.

4.3.10. Rules governing the Reason class

The Reason Class provides the reason for the unavailability being described. Exactly one instance must be used at the header level. Additionally and entirely optionally, exactly one instance may also be provided per time series.

4.3.11. Document attribute dependencies

Table 3 - Outage Document Dependency Table

Article involved Attribute		Art. 7(a) and 7(b) Unavailability of consumption units	Art. 15(a) and 15(b) Unavailability of generation units	Art. 15(c) and 15(d) Unavailability of production units
	type	A76: load unavailability	A80: generation unavailability	A77: production unavailability
	process.processType	A26 = Unavailability information		
	sender_MarketParticipant.marketRole.type	A20 = Party Connected to the Grid A39 = Data Provider A04 = System Operator or TSO A32 = Market Information Aggregator		
	receiver_MarketParticipant.marketRole.type	A32 = Market Information Aggregator A04 = System Operator or TSO A39 = Data Provider A33 = Information receiver		
	docStatus	A05 = Active (default) A09 = Cancelled A13 = Withdrawn Note: A09 not permitted when business type = A54		
TimeSer	businessType	A53: planned maintenance A54: forced unavailability		
	biddingZone_Domain.mRID	Used		

Article involved Attribute		Art. 7(a) and 7(b) Unavailability of consumption units	Art. 15(a) and 15(b) Unavailability of generation units	Art. 15(c) and 15(d) Unavailability of production units
	in_Domain.mRID	Not used		
	out_Domain.mRID	Not used		
	quantity_Measure_Unit.name	MAW		
	curveType	A01 = Sequential fixed size block A02 = Point A03 = Variable sized blocks		
	production_RegisteredResource.mRID	Not used	Used	Used
	production_RegisteredResource.name	Not used	Used only for download transmissions Not used for upload transmission	Used only for download transmissions Not used for upload transmission
	production_RegisteredResource.location.name	Not used	Used only for download transmissions. Not used for upload transmissions	Used only for download transmissions. Not used for upload transmissions
	production_RegisteredResource.psrType.psrType	Not used	Used only for download transmissions. Not used for upload transmissions	Used only for download transmissions. Not used for upload transmissions
	production_RegisteredResource.psrType.powerSystemResources.mRID	Not used	Used	Not used
	production_RegisteredResource.psrType.powerSystemResources.name	Not used	Used only for download transmissions. Not used for upload transmissions	Not used
	production_RegisteredResource.psrType.powerSystemResources.nominalP	Not used	Used only for download transmissions. Not used for upload transmissions	Used only for download transmissions. Not used for upload transmissions
Asset_RegisteredResour	mRID	Used only for upload transmissions	Not used	Not used
	name	Not used		
	asset_PSRType.psrType	Not used		
	location.name	Not used		
Series_Period	Available_Period	Used		
	WindPowerFeedin_Period	Not used		
	resolution	PT60M PT30M PT15M PT1M		
Reason	code	Used only for upload transmissions	Used	Used
		B18 (Failure) B19 (Foreseen Maintenance) B20 (Shutdown) A95 (Complementary Information) B18 permitted only when business type = A54 B19 shall be used in case of upgrading. B18 or B20 shall be used in case of incident or forced outage. A95 shall be used in case of external factors and in all other scenarios.		
	text	Shall be populated when code A95 has been used. May be populated for all other codes. In case of upgrades: “Upgrading”		

Article involved Attribute		Art. 10(a) and 10(b) Unavailability of transmission infrastructure	Art. 10(c) Unavailability of offshore grid infrastructure
	type	A78: transmission unavailability	A79: offshore grid infrastructure unavailability
	process.processType	A26 = Unavailability information	
	sender_MarketParticipant.marketRole.type	A20 = Party Connected to the Grid A39 = Data Provider A04 = System Operator or TSO A32 = Market Information Aggregator	
	receiver_MarketParticipant.marketRole.type	A32 = Market Information Aggregator A04 = System Operator or TSO A39 = Data Provider A33 = Information receiver	
	docStatus	A05 = Active (default) A09 = Cancelled A13 = Withdrawn Note: A09 not permitted when business type = A54	
TimeSeries	businessType	A53: planned maintenance A54: forced unavailability	A54: forced unavailability
	biddingZone_Domain.mRID	Not used	Used
	in_Domain.mRID	Used	Not used
	out_Domain.mRID	Used	Not used
	quantity_Measure_Unit.name	MAW	
	curveType	A01 = Sequential fixed size block A02 = Point A03 = Variable sized blocks	
	production_RegisteredResource.mRID	Not used	
	production_RegisteredResource.name	Not used	
	production_RegisteredResource.location.name	Not used	
	production_RegisteredResource.psrType.psrType	Not used	
	production_RegisteredResource.psrType.powerSystemResources.mRID	Not used	
	production_RegisteredResource.psrType.powerSystemResources.name	Not used	
	production_RegisteredResource.psrType.powerSystemResources.nominalP	Not used	Used
Asset_RegisteredResource	mRID	Used if no security restrictions	Used
	name	Used only for download transmissions if no security restrictions. Not used for upload transmissions	Used only for download transmissions. Not used for upload transmissions
	asset_PSRType.psrType	Used only for download transmissions. Not used for upload transmissions	
	location.name	Used only for download transmissions. Not used for upload transmissions	

Article involved Attribute		Art. 10(a) and 10(b) Unavailability of transmission infrastructure	Art. 10(c) Unavailability of offshore grid infrastructure
Series_Period	Available_Period	Used in regions with ATC-based allocations. Not used in regions with flow-based allocations	Not used
	WindPowerFeedin_Period	Not used	Used
	resolution	PT60M PT30M PT15M PT1M	
Reason	code	Used	
		B18 (Failure) B19 (Foreseen Maintenance) A95 (Complementary Information) B18 permitted only when business type = A54 B19 shall be used in case of upgrading. B18 shall be used in case of incident or forced outage. A95 shall be used in case of external factors and in all other scenarios.	
	text	Shall be populated when code A95 has been used. May be populated for all other codes. In case of upgrades: “Upgrading”	

273