

Infeed publication

Publication on the elia.be website

Energy management

Summary	This document describes the data and hypotheses on which the online infeed publication is based. The added values for market players and for Elia as well as the more specific features of the infeed publication are described here.
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Contents

1 Introduction	3
2 Relevance to market players	3
3 Sourced data for publication	4
3.1. Which infeed?	4
3.2. Exceptions – direct clients	4
3.3. Exceptions - Zoning	5
3.4. What metering values are used?.....	5
4 Features of the infeed publication	7
4.1. Export of historical data	8
4.2. B2B XML service	8
5 Contact information.....	8
6 Glossary	9
7 Annexes	10
7.1. Infeed injection stations	10
7.2. Infeed zonings	18

1 Introduction

BRPs are responsible for the balance of their energy injection and offtake portfolio on the Elia electrical grid. One of the sources for imbalance originates from the load and more specifically from the DSO load (increase in DER).

Currently, information at DSO level is only available on an ex-post basis (the earliest on M+2, for validated and allocated data). This is considered too late by ARPs wishing to adapt their imbalance position in real time.

This is the reason why participants in the balancing mechanism have asked Elia to help them by publishing real-time information on the injection of electricity from Elia's grid to DSO grids: this is called infeed.

Consequently, the purpose of *Infeed publication* is to supply the ARPs with sufficient information in near real time with the injection at each substation connected to the distribution grid.

In this way, the ARPs can use infeed data to detect deviations in consumption or production on the distribution grids and to better balance their portfolios on very short notice.

This publication can be consulted at www.elia.be under the section "Grid data".

2 Relevance to market players

In an ongoing effort to ensure **transparency** and provide information to the market, Elia publishes on its website a whole series of data directly associated with the balancing mechanism. This is of use to all market players, especially ARPs. The information of the infeed publication mainly covers:

- Information from the Elia substations feeding the distribution grid. This information includes location, region, EAN code, voltage level and the DSOs active on the substation.
- Near real-time information on the power injected from Elia to the distribution grid. The publication of these values is updated every 2 minute.

The data published by Elia is of great interest to many market players for a number of reasons:

- The data provided means that those users who have some type of flexibility, have information at their disposal enabling them to position themselves in relation to their competitors.
- ARPs can use the information to estimate their imbalance bill in near real time before it is issued by Elia.
- ARPs can use the data to manage their imbalance in real time.
- ARPs can use the information provided to quantify the impact of DER on their portfolios and to recalibrate their forecasting models accordingly.

3 Sourced data for publication

3.1. Which infeed?

The data used for publication is sourced directly from Elia's SCADA system. The SCADA system gathers together all metering pulses which are relevant to grid operation. Various telemeasurements are available for each injection. For publication purposes, the telemeasurement values are summed up per substation and, for some exceptions, corrections must be implemented (e.g. corrections for direct clients and infeed zoning). The published values are refreshed every two minute.

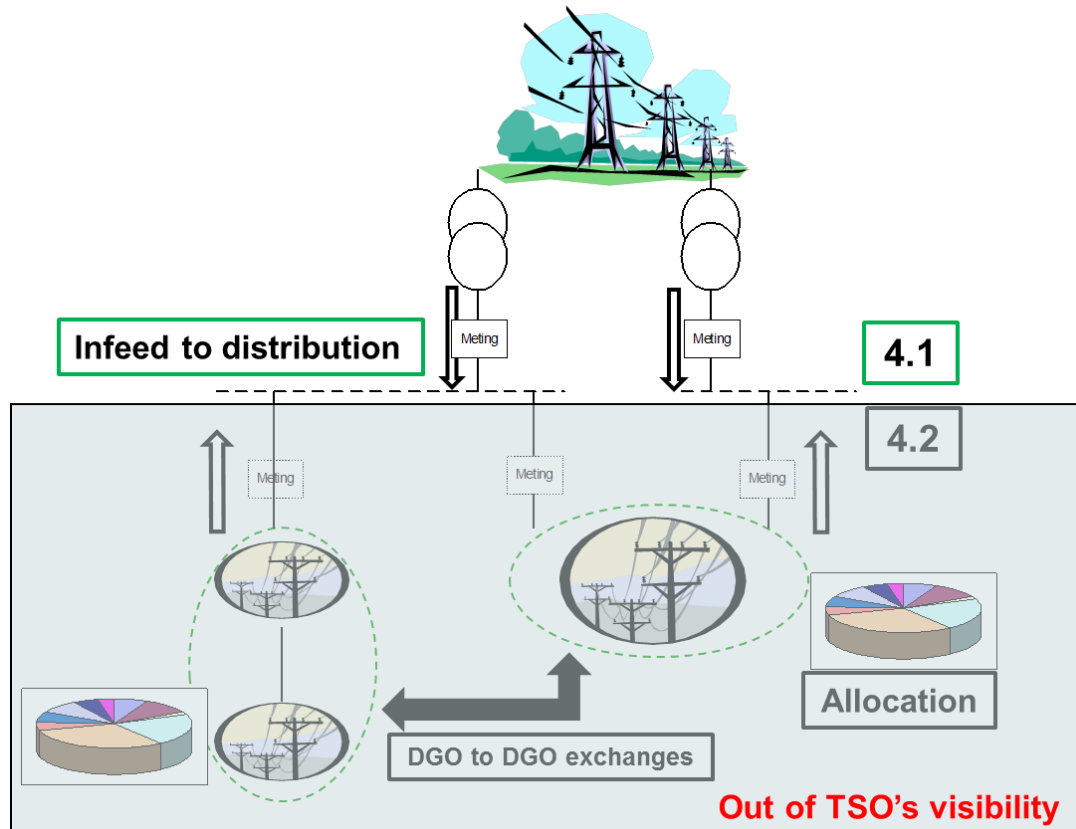


Figure 1: Published infeed data from the TSO side

Elia will only publish data of which it has direct visibility in real time. This means that the data provided will only originate from the transmissions side of the grid (Figure 1, section 4.1). Information and data from the distribution side of the grid, such as the infeed per DGO or DGO-to-DGO exchanges (Figure 1, section 4.2), are out of the TSOs visibility and will not be included into the infeed publication.

3.2. Exceptions – direct clients

In some injection stations, some of the feeders are strictly used by direct clients. For these substations Elia corrects the telemeasured values by eliminating the injection to the direct client as this is not considered an injection to the distribution grid. Elia has real-time measurement of energy off-take (or injection), albeit for all direct clients. For these cases, the substation and the maximum error one can expect on the published values is listed in the annexes of this document.

3.3. Exceptions - Zoning

Description of the situation

For certain injections to distribution grids, real-time grid operation is handled by other players. The best known example is INFRAX a company which handles operations for PBE, IVEG, INTER-ENERGA and INFRAX-WEST. Elia directly injects energy into the INFRAX grid which INFRAX then distributes to the different underlying distribution grid operators.

For these network situations, real-time telemeasurements of the infeed into the distribution grid are not available at a low voltage level (e.g. 11/15kV).

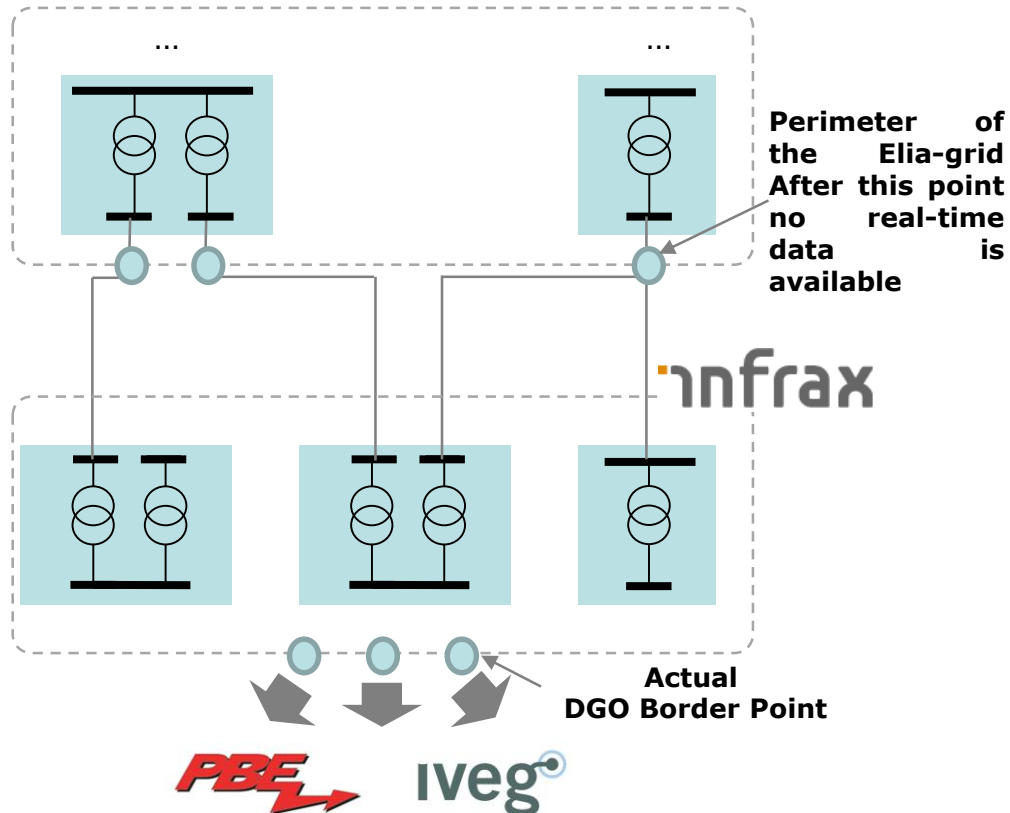


Figure 2: Illustration of the zoning design for INFRAX

Method for calculating zoning infeed

As indicated in Figure 2, it is proposed to only publish the data to which Elia has access. The infeed to the Infrac zone will be determined by summing all the available telemeasures situated at the border between the Elia grid and the Infrac grid. The sum of all these telemeasures will be called a zoning in the publication.

In the annexes each substation included in the zoning (meaning substations which are part of the Infrac or Tecteo zone) is listed.

3.4. What metering values are used?

The values used in the publication are near real-time telemeasurements directly sourced from Elia's SCADA-system.

Elia draws a distinction between two types of metering: quarter-hourly (validated) metering (or regulated meters), which Elia uses for invoicing to the various market players (ARPs, suppliers, etc.); and near real-time telemeasurements which Elia uses for its system operations and to which grid users can subscribe in order to consult their raw consumption and generation data.

The differences between quarter-hourly (validated) metering values and real-time measurements are described below:

- Telemeasurement only gives an **instantaneous value** at a predefined time interval (MW every x minutes) while the quarter-hourly metering values are energy values (MWh), a **meter counts continuously** the current and thus takes into account the full course of the quarter-hour. Based on the snapshot values it is possible to estimate the energy, but if the measurements often fluctuate, a lot of information will not be recorded and the energy estimate will be wrong. Also, small fluctuations will not get registered by the SCADA system due to filters within the system.
- Telemeasurements use a transducer to transform the measured pulses into kW of MW. The transducer is not a very precise device whereas a meter does not use a transducer which makes it more precise. **The error percentage for near-real-time measurements is within a band of 2% while the error percentage for metering is about 0.2%.**
- **Meters** have an internal clock which is **constantly synchronised** and the meters are **regularly calibrated**, while **near-real-time measurements have no synchronisation**.
- The very short period of time within which the **telemeasured values** are made available to Elia customers means that these values are **not validated**. If, due to a technical problem, it proves impossible to carry out the near-real-time measurement, these data will be lost for good. All the **meters** installed by Elia have a **no-break system**, alarm relays and a system for (locally) memorising and transmitting data.

4 Features of the infeed publication

General presentation of the publication

The publication consists of one large data table. The structure of the "infeed publication" table is described below. At the top of the table the timestamp for the published values is displayed. The rows show the measured substation which is connected to the distribution grid its characteristics and the last column shows measured value of the infeed delivered through the substation in question.

INFEED

Explanation of the published values: The list presents the last measures received by Elia for injection station from infeed from Elia to Belgian Distribution System Operators (DSO). This list can be filtered on DSO field.

All values are in MW and voltage stations level are in KV.

Last values displayed: 08/10/2013 10:35

EAN code	Injection station	Location	Voltage Level	DSO	Region	Value
541453161252993345	AALNO 15	AALST	15	INTERGEM	Flanders	-31.008
541453198270815618	AALST 15	AALST	15	INTERGEM	Flanders	-20.882
541453118726748222	AALTE 12	AALTER	12	IMEWO	Flanders	-18.112
541453153283327817	AARSC 10	AARSCHOT	10	IVERLEK/PBE	Flanders	-19.569
541453100400942569	AARTS 15	AARTSELAAR	15	IVEKA	Flanders	-6.240
541453190902346378	ADEGE 12	MALDEGEM	12	IMEWO	Flanders	-6.361
541453172167605162	AMEL 15	AMEL/AMBLÈVE	15	INTEREST	Wallonia	-0.390
000000000000000076	AMERI000	BRUSSEL (ELSENE)	11	SIBELGA	Brussels	-29.843
541453194170778985	AMPSI 15	AMPSIN	15	TECTEO	Wallonia	-3.168
541453115502566094	ANGLE 15	ANTHISNES	15	TECTEO	Wallonia	-27.126

Additional details about the information published in the different columns are given below:

EAN code	string of 18 digits representing the injection station's EAN code Remark: The zonings do not follow the EAN code: These start with 0000000
Injection station	name of the injection station
Location	the name of the city where the injection station is located
Voltage level	the voltage level of the injection station
DSO	the DSOs associated with this injection station
Region	region associated with the injection station
Value	information about the last measured value at the injection station

The data table can be filtered by DSO, when clicking on the top row of the DSO column the browser presents the list of those DSOs having at least one injection station at the time of the publication. The list is sorted alphabetically and the user can select one DSO from the list.

Voltage Level	DSO	Region
15	DSO	INTERGEM
15	AIEG	INTERGEM
12	AIESH	IMEWO
10	GASELWEST	IVERLEK/PBE
	IDEG	IVEKA
	IEH	INTEREST

Remark: Multiple DSOs can be associated with the same injection line. But each DSO can be chosen from the list.

The measured values can have different signs. Below you can see the sign convention used for the infeed publication.

sign	explanation
-	The value represents injected energy going from the TSO to the distribution grid.
+	The value represents energy offtake going from the distribution grid to the TSO.
0	No energy injection/offtake.
	Measure is not valid, indicates a technical defect with the measurements.

4.1. Export of historical data

Reports can be downloaded from the infeed page containing historical data of the published data (.CSV file). The reports can be retrieved by selecting the desired month from the dropdown list.

Historical data

Please click on the following link to view historical data on last data (one month):

Current selection ▼

[Click here to access the B2B XML-services](#)

4.2. B2B XML service

In order to improve the usability of the published data Elia has set up a web service to regularly send the published information in the form of a XML message.

For more information about the B2B XML service [click here](#).

5 Contact information

Should you require assistance or more information, support is available via email at balancing.publications@elia.be.

Disclaimer:

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6 Glossary

<i>Term</i>	Description
<i>ARP</i>	Access Responsible Party
<i>BRP</i>	Balance Responsible Party. Equivalent of "ARP" at Elia.
<i>MW</i>	Megawatt
<i>DGO</i>	Distribution Grid Operator (equivalent of DSO)
<i>DSO</i>	Distribution System Operator
<i>Infeed</i>	The energy that is transferred from the TSO (Elia) grid to the Distributor (DSOs) grid via the Injection stations
<i>DGO Border Point</i>	Equivalent of Injection station. "Injection station" is used in Infeed while "DGO Border Point " is used in CC.
<i>Injection station</i>	The station where the infeed from Elia to the DSO Grid is performed.
<i>Historical monthly files</i>	The .CSV file containing one month of values for all injection stations valid at the start of said month
<i>SCADA</i>	Supervisory Control And Data Acquisition system

7 Annexes

7.1. Infeed injection stations

Hereunder a table listing which substations, DSO's and their corresponding EAN code are included in the publication.

EAN code	Display name	Location	DSO
541453161252993345	AALNO 15	AALST	INTERGEM
541453198270815618	AALST 15	AALST	INTERGEM
541453118726748222	AALTE 12	AALTER	IMEWO
541453153283327817	AARSC 10	AARSCHOT	IVERLEK/PBE
541453100400942569	AARTS 15	AARTSELAAR	IVEKA
541453190902346378	ADEGE 12	MALDEGEM	IMEWO
541453142791384450	ALKEN 10	ALKEN	INTERENERGA
541453172167605162	AMEL 15	AMEL/AMBLÈVE	INTEREST
000000000000000007	AMERI000	BRUSSEL (ELSENE)	SIBELGA
541453194170778985	AMPSI 15	AMPSIN	TECTEO
541453115502566094	ANGLE 15	ANTHISNES	TECTEO
541453151601809267	ANTOI 15	ANTOING	IEH
541453147829836604	ARLON 15	ARLON	INTERLUX
541453114541262387	ATHUS 6	ATHUS	INTERLUX
541453187722414738	AUBAN 15	AUBANGE	INTERLUX
541453191883486503	AUVEL 11	AUVELAIS	IDEG
541453182743471869	BAASR 15	BUGGENHOUT	INTERGEM/IVERLEK
541453143064081663	BALEN 15	BALEN	IVEKA
541453164223879570	BASCO 10	MORLANWELZ-MARIEMONT	IEH
541453148899477728	BASSW 11	WAVRE	SEDILEC/WAVRE
541453151296633482	BATTI 15	BATTICE	INTERMOSANE
541453103219240901	BAULE 15	NIVELLES	SEDILEC
541453151089113955	BAVEG 12	SINT-LIEVENS-HOUTEM	IMEWO
541453168552798038	BCOMT 15	BRAINE-LE-COMTE	SEDILEC
541453163189333676	BEAGA 11	LIER	IVERLEK/SIBELGA
541453190656679869	BEERN 12	BEERNEM	IMEWO
541453117608278987	BEERS 15	BEERSE	IVEG/IVEKA/WVEM
541453184237307319	BELLI 6	ANTWERPEN	IMEA
541453196105593441	BERIN 10	BERINGEN	INTERENERGA
541453158706301450	BERST 11	BEERST	WVEM
541453127587527037	BEVER 15	BEVERCÉ	INTEREST
541453105808657404	BIERG 11	BIERGES	SEDILEC/WAVRE
541453184676760430	BINCH 10	BINCHE	IEH
541453185834902525	BLAAR 12	GENT	IMEWO
541453118609255557	BLANK 11	BLANKENBERGE	GASELWEST/IMEWO
541453181128436325	BLEEK 12	ZOMERGEM	IMEWO
541453144025820499	BOISD 11	BOIS-DE-VILLERS	IDEG
541453192995852231	BOMAL 15	BOMAL-SUR-OURTHE	INTERLUX/INTERMOSANE
541453178933352230	BONNE 15	BONNERT	INTERLUX
541453162389773138	BORGL 10	BORGLOON	INTERENERGA
541453186278933281	BORNM 15	BORNEM	IVERLEK
541453183416384455	BOTAN 11	BRUSSEL (SINT-JOOST-TEN-NODE)	SIBELGA

541453160535830254	BOTTE 12	MERELBEKE (SINT-PIETERS-WOLUWE)	IMEWO
541453151537722340	BOVEN 11	BRUSSEL	SIBELGA
541453166213625662	BRAIN 15	BRAINE-L'ALLEUD	SEDILEC
541453111919802428	BRESS 6	LIÈGE	INTERMOSANE/TECTEO
541453118890017278	BRUGG 11	SINT-ANDRIES	IMEWO
541453122698611026	BRUNO 11	BRUGGE	IMEWO
541453106180971867	BRUNY 11	ASSEBROEK	IMEWO
541453156480044129	BRUST 10	BRUSTEM	INTERENERGA
541453129967898133	BRUZU 11	SINT-ANDRIES	IMEWO
541453113720339537	BUDA 11	BRUSSEL	SIBELGA/SIBELGAS
541453153228396175	BUIZI 15	BUIZINGEN	IVERLEK
541453164052981130	BURCH 15	BURCHT	IMEA/INTERGEM
541453155389040706	BUTGE 15	BÜTGENBACH/BUTGENBACH	INTEREST
541453145586794618	BVREN 15	ROESELARE	GASELWEST/WVEM
541453181670778980	BWTON 15	BAS-WARNETON/NEERWAASTEN	GASELWEST
541453108288210633	CENTE 11	BRUSSEL (LAKEN)	SIBELGA/SIBELGAS
541453133613222838	CHAMP 11	CHAMPION	IDEG
541453195010012382	CHARL 10	CHARLEROI	IEH
541453166822451355	CHASS 11	MARBAIX (HT.)	IDEG/IEH/PBE
541453128722780942	CHERA 15	LIÈGE	TECTEO
541453158694094419	CHINY 15	CHINY	INTERLUX
541453147301882501	CHOME 11	BRUSSEL (ANDERLECHT)	SIBELGA
541453155099123713	CIERR 15	BOVIGNY	INTERLUX/INTERMOSANE
541453196088808778	CINEY 11	CINEY	IDEG
541453170095461607	CIPLY 10	CIPLY	IEH
541453196523249142	COURT 11	COURT-SAINT-ETIENNE	SEDILEC
541453179072207214	COUVI 11	COUVIN	AIEG/IDEG
541453184264773132	CQUIN 11	BRUSSEL	SIBELGA
541453179467409841	DAMPL 15	ANTWERPEN	IMEA
541453190124148132	DECUY 11	BRUSSEL (ANDERLECHT)	SIBELGA
541453189403933286	DEGRE 11	BRUSSEL (GANSHOREN)	SIBELGA
541453115172976254	DEHAA 11	DE HAAN	GASELWEST/IMEWO
541453138500612976	DEINZ 10	DEINZE	GASELWEST
541453119988650087	DEMOS 11	BRUSSEL (ANDERLECHT)	SIBELGA
541453189818972344	DESGM 10	DESSELGEM	GASELWEST
541453153936403981	DESTE 12	DESTELDONK	IMEWO
541453185488528010	DEUXA 15	DEUX-ACREN	IEH/INTERGEM
541453140362185239	DHANI 11	BRUSSEL (ETTERBEEK)	SIBELGA
541453128222292662	DIEST 10	DIEST	IVERLEK/PBE
541453197340029474	DORIN 11	DORINNE	IDEG
541453126113528012	DOTTI 10	DOTTIGNIES/DOTTENIJS	SIMOGEL
541453101403445002	DROGE 11	DROGENBOS	IVERLEK/SIBELGA
541453131425112484	DRONG 12	DRONGEN	IMEWO
541453184794253111	DTBER 12	DESTELBERGEN	IMEWO
541453115902346371	DUFFE 15	DUFFEL	IMEA/IVEKA
541453171317690614	DUINB 11	HEIST-AAN-ZEE	IMEWO
541453196264284846	DUNAN 11	LIER	IVERLEK/SIBELGA

541453101098269228	EEKLY 12	EEKLO	IMEWO
541453198675173528	EEKLZ 12	EEKLO	IMEWO
541453120946902032	EHEIN 15	ENGIS	TECTEO
541453133520144223	EIZER 11	LENNIK	IVERLEK
541453106954592465	EKERE 15	EKEREN	IMEA/IVEG/IVEKA
541453167229861020	ELAN 11	BRUSSEL (WATERMAAL-BOSVOORDE)	SIBELGA
541453114168947933	ELOUG 10	ELOUGES	IEH
541453137475222340	ERTVE 12	ERTVELDE	IMEWO
541453184118288751	ESPIN 11	SINT-GENESIOUS-RODE/RHODE-SAINT-GENÈSE	IVERLEK/SIBELGA
541453175298708672	ESSEG 11	BRUSSEL (JETTE)	SIBELGA
541453155711001153	ESSNE 15	ESSENE	INTERGEM/IVERLEK
541453156151980169	EUPEN 15	EUPEN	INTEREST/INTERMOSANE/TECTEO
541453197231692077	FARCI 10	FARCIENNES	IEH
541453122634524106	FAYSV 15	FAYS-LES-VENEURS	INTERLUX
541453107564944026	FELUY 15	FELUY	IEH
541453121731203792	FLEUR 11	FLEURUS	IEH
541453155476015808	FLORE 11	FLORÉE	AIEG/IDEG
541453144820803406	FONTA 10	FONTAINE-L'EVÊQUE	IEH
541453113726443054	FORES 11	BRUSSEL (VORST)	SIBELGA
541453180288332706	FOSSE 11	FOSSES-LA-VILLE	IDEG
541453177087038755	GASTH 10	LEUVEN	IVERLEK
541453181750124690	GAVER 10	GAVERE	GASELWEST
541453103861635926	GEEL 15	OEVEL	IVEKA
541453152059572932	GEMBL 11	GEMBLOUX	IDEG/PBE
541453115018862482	GERDB 15	GERAARDSBERGEN	INTERGEM
541453191500490906	GERPI 11	GERPINNES	IDEG
541453173556154964	GILLY 10	GILLY	IEH
541453160705202812	GLAIN 6	GLAIN	TECTEO
541453151685732604	GODSH 70	GODSHEIDE	INTERENERGA
541453166897219416	GOUY 10	GOUY-LEZ-PIÉTON	IEH
541453150533694026	GRIMB 11	GRIMBERGEN	SIBELGAS
541453119427126647	GRIVE 15	GRIVEGNÉE	TECTEO
541453115867251154	HALEN 10	HALEN	INTERENERGA/PBE
541453134759157893	HAM 12	GENT	IMEWO
541453193148440121	HAMME 10	HAMME (O.-VL.)	INTERGEM
541453120473879579	HANZI 11	HANZINELLE	IDEG
541453168655031919	HARMI 10	HARMIGNIES	IEH
541453157474917177	HAREL 10	HARELBEKE	WVEM
541453169384402032	HARYD 11	BRUSSEL (HAREN)	IVERLEK/SIBELGA/SIBELGAS
541453151260012381	HASTI 15	HASTIÈRE-LAVALUX	IDEG
541453187301272155	HAVE7 15	ANTWERPEN	IMEA/IVEG
541453197312563654	HCHAP 15	HENRI-CHAPELLE	INTEREST
541453192721194024	HEIMO 10	NIEUWKERKEN-WAAS	INTERGEM
541453199975222343	HEIST 10	HEIST-OP-DEN-BERG	IVERLEK
541453160105532403	HEOUT 15	HERENTHOUT	IVEKA
541453164712160820	HERBA 15	SAINTE-ODE	INTERLUX

541453170190066097	HERDE 10	RIEMST	INTERENERGA
541453126469057792	HEREN 15	HERENTALS	IVEKA
541453106773012878	HERFE 10	HERFELINGEN	PBE
541453126403445005	HERMA 15	HERMALLE-SOUS-HUY	TECTEO
541453166137331724	HERST 15	HERSTAL	TECTEO
541453133947390319	HEULE 10	KORTRIJK	GASELWEST
541453138457888363	HEVRL 10	HAASRODE	IVERLEK/PBE
541453108280581236	HEZE 15	GEEL	IVEKA
541453126394289732	HOBOK 15	HOBOKEN	IMEA/INTERGEM/IVEG
541453192943972349	HOEIL 11	HOEILAART	IVERLEK
541453119491213564	HOUFF 15	HOUFFALIZE	INTERLUX
541453156768435236	HOUTH 10	HOUTHALEN	INTERENERGA
541453143499392273	HOUTW 11	BRUSSEL (HAREN)	SIBELGA
541453129110354189	HOVEN 6	ANTWERPEN	IMEA
541453107082766292	HOVES 15	HOVES (HT.)	IEH
541453115856570006	HSART 15	MARCHIN	TECTEO
541453155474489922	HULDN 11	HAASRODE	IVERLEK
541453198846071950	IEPER 15	VLAMERTINGE	GASELWEST
541453176263064144	IEPNO 15	IEPER	GASELWEST
541453151116579778	IVOZ 15	IVOZ-RAMET	TECTEO
541453135253542666	IZGEM 10	IZEGEM	GASELWEST/WVEM
541453115365236998	JEMAP 10	JEMAPPES	IEH
541453128655642270	JODOI 10	WILSELE	IVERLEK/PBE/SEDILEC
541453188451784840	JOSAP 6	BRUSSEL (SCHAARBEEK)	SIBELGA
541453150863283877	JUMET 10	JUMET	IEH
541453137711733579	KALMT 15	KALMTHOUT	IVEG/IVEKA
541453107116335630	KATTE 12	GENT	IMEWO
541453191379946474	KERSB 10	KERSBEEK-MISKOM	PBE
541453184606570009	KESLO 10	KESSEL-LO	IVERLEK/PBE
541453102500551931	KETEN 15	KALLO (KIELDRECHT)	INTERGEM
541453192174929389	KNESS 12	KNESSELARE	IMEWO
541453191216677424	KNOKK 11	KNOKKE-HEIST	IMEWO
541453123675173520	KOBBE 15	ASSE	IVERLEK
541453131097048524	KOKSI 11	OOSTDUINKERKE	GASELWEST
541453148897951848	KONTI 15	KONTICH	IMEA/IVEKA
541453139324587587	KOOST 10	KORTRIJK	GASELWEST
541453130543154475	KUURN 10	KUURNE	GASELWEST
541453111376589535	KWATR 12	MELLE	IMEWO
541453102767580743	LALOU 10	HAINES-SAINTE-PAUL	IEH
541453137228029967	LATOU 15	LATOIR	INTERLUX
541453177183169124	LANDN 10	LANDEN	PBE
541453108408755068	LANLO 10	GENK	INTERENERGA
541453143027895689	LANLO 26	GENK	INTERENERGA
541453185830324888	LENS 15	LENS	IEH
541453167770022154	LEUZE 11	LEUZE (NAM.)	IDEG/PBE
541453181991213566	LIBER 11	LIBERCHIES	IDEG/IEH
541453118792361028	LICHT 12	LICHTERVELDE	GASELWEST/IMEWO/WVEM
541453172372072933	LIER 15	LIER	IMEA/IVEKA
541453173525637382	LIGNE 15	LIGNE	IEH

541453102279299492	LILLA 15	ANTWERPEN	INTERGEM/IVEG
541453134179323915	LIXHE 15	LIXHE	INTERMOSANE/TECTEO
541453139944094410	LOBBE 10	LOBBES	IEH
541453183306521175	LOKEH 12	LOKEREN	IMEWO
541453162133425474	LOKEW 12	LOKEREN	IMEWO
541453170989626648	LOMBA 11	MIDDELKERKE	GASELWEST/WVEM
541453166979616881	LOMME 10	LOMMEL	INTERENERGA
541453105015200370	LOMME 26	LOMMEL 26	INTERENERGA/IVEKA
541453152859133487	LORCY 15	SAINT-HUBERT	INTERLUX
541453176626223324	LOUVA 11	LOUVAIN-LA-NEUVE	SEDILEC
541453180924624202	LUMME 10	LUMMEN	INTERENERGA
541453119530886414	MAGOT 15	VAUX-SOUS-CHÈVREMONT	TECTEO
541453133163088564	MALEC 15	ECAUSSINNES	SEDILEC
541453134922426931	MALLE 15	OOSTMALLE	IVEKA
541453165908449880	MAPON 6	MARCHIENNE-AU-PONT	IEH
541453168252199883	MARCO 15	MARCOURT	INTERLUX
541453102737063160	MARFA 15	MARCHE-EN-FAMENNE	IDEG/INTERLUX
541453157223147152	MARLD 11	MARCHE-LES-DAMES	AIEG/IDEG
541453165374392277	MARLY 11	BRUSSEL (NEDER-OVER-HEEMBEEK)	SIBELGA/SIBELGAS
541453104259890316	MECHL 10	MECHELEN	IVERLEK
541453189959353200	MERCH 15	MERCHTEM	IVERLEK
541453125634402030	MERCL 11	OOSTENDE	IMEWO
541453122918337583	MEREL 12	MERELBEKE	IMEWO
541453115063112976	MEWST 15	MENEN	GASELWEST
541453182284182316	MIDI 11	BRUSSEL (VORST)	SIBELGA
541453134054201840	MIECR 15	MÍCRET	IDEG
541453192190188166	MOARD 15	MONCEAU-EN-ARDENNE	IDEG
541453106219118836	MOL 15	MOL	IVEKA
541453121593874697	MOLEN 11	BRUSSEL (SINT-JANS-MOLENBEEK)	SIBELGA
541453193389528985	MONAI 11	BRUSSEL	SIBELGA
541453198836916681	MONCE 10	MONCEAU-SUR-SAMBRE	IEH
541453167892092462	MONS 10	MONS	IEH
541453183898562198	MONSI 15	LIÈGE	TECTEO
541453166878908872	MONTI 10	MONTIGNIES-SUR-SAMBRE	IEH
541453128492373221	MOONS 6	ANTWERPEN	IMEA
541453168429201845	MORTS 15	MORTSEL	IMEA/IVEKA
541453105695742368	MOUSC 10	MOUSCRON/MOESKROEN	GASELWEST/SIMOGEL
541453176317995783	MRCHE 11	BRUSSEL (SINT-JOOST-TEN-NODE)	SIBELGA
541453126922243830	MUIZN 10	MUIZEN (MECHELEN)	IVERLEK
541453196584719417	NAMUR 11	NAMUR	IDEG
541453101473635433	NEUFC 15	NEUFCHÂTEAU	INTERLUX
541453173653811210	NEUVI 11	NEUVILLE (PHILIPPEVILLE)	IDEG
541453145129030944	NIEUW 12	GENT	IMEWO
541453191660708187	NINOV 15	OUTER	INTERGEM
541453184806460148	NIVEL 15	THINES	IEH/SEDILEC
541453152172487977	NORDS 15	LO-RENINGE	GASELWEST

541453129760378597	NYLEN 15	NIJLEN	IVEG/IVEKA
541453193270510433	OBOUR 10	OBOURG	IEH
541453145977419618	OELEG 15	OEEGEM	IVEKA
541453105175417663	OEVER 6	ANTWERPEN	IMEA
541453118435305358	OHAIN 11	OHAIN	SEDILEC
541453161922854181	OISQU 15	OISQUERCQ	SEDILEC
541453181765383488	ON 15	ON	IDEG/INTERLUX
541453110015505554	OOSTR 10	OOSTROZEBEKE	GASELWEST
541453143124026061	OR GEO 15	OR GEO	INTERLUX
541453120556277032	OTTEN 11	BLANDEN	IVERLEK/SEDILEC
541453155477541689	OTTIG 11	OTTIGNIES	SEDILEC
541453143224734064	UDNA 10	UDENAARDE	GASELWEST
541453129571169612	OUGRE 6	OUGRÉE	TECTEO
541453199059695001	PACHE 11	BRUSSEL	SIBELGA
541453172097414735	PATUR 10	COLFONTAINE	IEH
541453142998903980	PECHE 11	BRUSSEL (UKKEL)	SIBELGA
541453190050905946	PEPIN 10	PEPINSTER	INTERMOSANE/TECTEO
541453138297015424	PETRO 15	ANTWERPEN	IMEA/IVEG
541453149195498226	PITEM 10	PITTEM	GASELWEST
541453168584841481	PLENE 15	ANDRIMONT	INTERMOSANE/TECTEO
541453183874148132	POEDE 15	POEDERLEE	IVEKA
541453150777834653	PONDR 15	PONDRÔME	IDEG/INTERLUX
541453112636965519	POUPL 11	LIÈGE	INTERMOSANE
541453197320193058	PRECH 10	PETIT-RECHAIN	INTERMOSANE/TECTEO
541453171374148134	PTOUE 5	BRUSSEL	SIBELGA
541453176720827817	PUTTE 10	PUTTE	IVERLEK
541453169381350275	QUEVA 13	QUEVAUCAMPS	IEH
541453189971560235	RAVEL 15	RAVELS	IVEKA
541453146212404963	RECOG 15	RECOGNE	INTERLUX
541453148882693050	RIEME 12	ERTVELDE	IMEWO/IVEG
541453131994265314	RIJKE 15	RIJKEVORSEL	IVEKA
541453108916872738	RIMIE 15	NEUVILLE-EN-CONDROZ	TECTEO
541453144115847344	ROEVG 12	GENT	IMEWO
541453102682131525	ROMED 11	ROMEDENNE	IDEG
541453180102175472	ROMSE 15	ROMSÉE	TECTEO
541453111428469419	RONQU 6	RONQUIÈRES	SEDILEC
541453151246279470	RONSE 10	RONSE/RENAIX	GASELWEST
541453120188540221	ROSIE 11	LIER	IVERLEK/SEDILEC
541453103443545100	RUIEN 10	KLUISBERGEN	GASELWEST
541453154009646175	RUMBE 15	ROESELARE	GASELWEST
541453153863161800	SADAC 12	GENT	IMEWO
541453119933718442	SAMAN 12	SINT-AMANDSBERG	IMEWO
541453140526980168	SART 15	MARCHIN	TECTEO
541453100497072934	SAUVE 11	SAUVENIÈRE	IDEG/PBE
541453194353884458	SCAIL 11	BRUSSEL (SINT-JOOST-TEN-NODE)	SIBELGA
541453176403445000	SCARB 11	BRUXELLES	SIBELGA
541453142399233570	SCHED 15	SHELLE	IVEG/IVEKA
541453146630495789	SCHOL 11	BRUSSEL (SINT-JANS-	SIBELGA

		MOLENBEEK)	
541453113763064144	SCLES 15	LIÈGE	INTERMOSANE/TECTEO
541453117217653984	SDEWE 12	SINT-DENIJS-WESTREM	IMEWO
541453199462527036	SEILL 15	SEILLES	AIEG/TECTEO
541453191885012380	SENEF 10	SENEFFE	IEH
541453154473513362	SIFFE 12	GENT	IMEWO
541453171358889343	SJOB 15	SINT-JOB-IN-'T-GOOR	IMEA/IVEKA
541453132769411806	SKRUI 12	SINT-KRUIS-WINKEL	IMEWO/IVEG
541453164114016299	SLAAN 15	ANTWERPEN	IVEG
541453193780153984	SLYKE 11	BREDENE	IMEWO
541453147442263368	SMALA 12	SINT-MARTENS-LATEM	IMEWO
541453189406985046	SOIGN 10	SOIGNIES	IEH
541453111828249697	SOLRE 15	SOLRE-SAINT-GÉRY	AIESH
541453122909182314	SOY 15	EREZÉE	INTERLUX
541453152901858092	SPA 10	SPA	INTERMOSANE
541453189587038753	STALE 10	GENK	INTERENERGA
541453104314821958	STBAV 10	SINT-BAAFS-VIJVE	GASELWEST
541453176177614923	STDJ 11	OOSTENDE	IMEWO
541453187148684265	STEMB 15	STEMBERT	INTERMOSANE/TECTEO
541453104565066092	STENE 11	OOSTENDE	IMEWO
541453145449465518	STGIL 15	SINT-GILLIS-BIJ-DENDERMONDE	INTERGEM
541453141946047547	STNIK 10	NIEUWKERKEN-WAAS	INTERGEM
541453130155581232	STPAU 10	SINT-PAUWELS	INTERGEM
541453179919070001	STRUI 10	SINT-TRUIDEN	INTERENERGA
541453173147219416	STSER 11	SAINT-SERVAIS	IDEG
541453189774721864	SVITH 15	SANKT VITH/SAINT-VITH	INTEREST
541453130291384452	SYSEL 12	SIJSELE	IMEWO
541453103980654471	TABAK 15	ANTWERPEN	IMEA
541453172469729184	THUIL 10	THUILLIES	IEH
541453199656313650	TIENE 10	TIENEN	IVERLEK
541453117924135926	TISLT 10	TISSELT	IVERLEK
541453141215151548	TIP 10	TESSENDERLOO INDUSTRIE	INTERENERGA
541453151849001645	TONGE 10	TONGEREN	INTERENERGA
541453182802981131	TOURN 15	KAIN	IEH
541453113964480163	TURNH 15	TURNHOUT	IVEKA
541453108932131529	TURON 10	THEUX	INTERMOSANE
541453121657961608	VILLE 15	SIBRET	INTERLUX
541453185598391290	VILRO 15	HAUTRAGE	IEH
541453181376284365	VILVP 11	VILVOORDE	PBE/SIBELGAS
541453188607424491	VISEM 15	VILLERS-SUR-SEMOIS	INTERLUX
541453158971804380	WAARS 12	WAARSCHOOT	IMEWO
541453157058352233	WALGO 10	TEMSE	INTERGEM
541453176754397157	WATER 11	WATERLOO	SEDILEC
541453168191164737	WAYS 11	WAYS	SEDILEC
541453155472964049	WESPL 10	WESPELAAR	IVERLEK/PBE
541453158562868838	WESTR 15	WESTROZEBEKE	GASELWEST
541453118572634458	WETTE 12	WETTEREN	IMEWO
541453134647768736	WEZEM 11	WEZEMBEEK-OPPEM	IVERLEK

541453103338259457	WICHE 12	WICHELEN	IMEWO
541453199697512388	WIERD 11	WIERDE	IDEG
541453115818423036	WILBR 10	WILLEBROEK	IVERLEK
541453158974856133	WILRI 15	WILRIJK	IMEA/IVEG
541453185752505068	WILSE 10	WILSELE	IVERLEK/PBE
541453173315066095	WINGE 12	WINGENE	GASELWEST/IMEWO
541453153287905455	WOLUW 11	LIER	IVERLEK/SIBELGA
541453166909426450	WOMME 15	WOMMELGEM	IMEA/IVEG/IVEKA
541453106560915702	WONDE 12	WONDELGEM	IMEWO
541453160352724798	WORTG 10	WORTEGEM-PETEGEM	GASELWEST
541453187330263858	WVLGM 15	WEVELGEM	GASELWEST/WVEM
541453115177553894	ZAVEN 11	ZAVENTEM	IVERLEK/PBE
541453153986757997	ZEDEL 11	ZEDELGEM	GASELWEST/IMEWO
541453150250971318	ZEEBR 11	ZEEBRUGGE	IMEWO
541453101140993835	ZELEI 12	ZELE	IMEWO
541453154455202819	ZELER 12	ZELE	IMEWO
541453165273684268	ZEVEN 12	ZEVENEKEN	IMEWO
000000000000000005	INTERENERGA 70kV-net	LIMBURG	INTERENERGA
000000000000000006	INFRAX WEST 36kV-net	WEST-VLAANDEREN	WVEM/GASELWEST
000000000000000004	TECTEO	TECTEO (BOUCLE HESBAYE & BOUCLE DU CONDROZ)	TECTEO
541453169169253118	ZOTGM 15	LEEUWERGEM	INTERGEM
541453192414492369	ZUREN 15	BERCHEM	IMEA
541453138055056331	ZWEVG 10	ZWEVEGEM	GASELWEST

7.2. Infeed zonings

Hereunder tables showing which substations are included in the different zonings.

ZONE TECTEO					
Display Name	EAN Code	Region	Location	Voltage Level	DSO
ABEE 15	541453167191714041	WAL	ABÉE	15	TECTEO
ALLEU 15	541453114329165220	WAL	ALLEUR	15	TECTEO
ANTHI 15	541453105698794128	WAL	ANTHISNES	15	TECTEO
CROIX 15	541453142875307795	WAL	VILLERS-LE-BOUILLET	15	TECTEO
FOOZ 15	541453112833803898	WAL	FOOZ	15	TECTEO
HOLLO 15	541453142484682795	WAL	GRÂCE-BERLEUR	15	TECTEO
PROFO 15	541453102054995298	WAL	FLÉMALLE	15	TECTEO
SAIVE 15	541453192094057797	WAL	SAIVE	15	TECTEO

Infrac west 36kV-net					
Display Name	EAN Code	Region	Location	Voltage Level	DSO
GISTE 11	541453133181399109	VL	GISTEL	11	WVEM
GULHE 10	541453180318850279	VL	GULLEGEM	10	WVEM
GULIN 10	541453173850649593	VL	GULLEGEM INDUSTRIE	10	WVEM
HAREL 10	541453157474917177	VL	HARELBEKE	10	WVEM
JABBE 11	541453144974482052	VL	JABBEKE	11	WVEM
KOEKE 11	541453152866762878	VL	KOEKELAERE	11	WVEM
LENDE 10	541453168845766782	VL	LENDELEDE	10	WVEM
MARKE 10	541453177561587090	VL	MARKE	10	WVEM/GASELWEST
MIDDE 11	541453195602053403	VL	MIDDELKERKE	11	WVEM
ROLLE 15	541453106063044077	VL	ROLLEGEM KAPELLE	15	WVEM
STASE 10	541453148179262877	VL	STASEGEM	10	WVEM
TORHO 12	541453102164858575	VL	TORHOUT	12	WVEM
WYTSC 15	541453184946841005	VL	WIJTSCHATE	15	GASELWEST

INTERENERGA 70kV-net					
Display Name	EAN Code	Region	Location	Voltage Level	DSO
BILZE 10	541453110795229671	VL	BILZEN	10	INTERENERGA
EISDI 10	541453178104799987	VL	LANKLAAR	10	INTERENERGA
GERDI 10	541453152164858570	VL	GERDINGEN	10	INTERENERGA
HECHT 10	541453125559633977	VL	HECHTEL	10	INTERENERGA
LANAK 10	541453151140993830	VL	LANAKEN	10	INTERENERGA
MAASE 10	541453164225405456	VL	MAASEIK	10	INTERENERGA
MAASM 10	541453130057924984	VL	OPGRIMBIE	10	INTERENERGA
OPGLA 10	541453152268618346	VL	OPGLABBEEK	10	INTERENERGA
OVERI 10	541453163132876151	VL	OVERPELT	10	INTERENERGA
PAALS 10	541453147660464042	VL	HASSELT	10	INTERENERGA
STHUI 10	541453184330385924	VL	SINT- HUIBRECHTS- LILLE	10	INTERENERGA
ZONHO 10	541453138091677422	VL	ZONHOVEN	10	INTERENERGA