Glossary of terms

1. Introduction

This document provides a list of terms and their definitions, which are mostly related to statistical data. The goal is to help understand ENTSO-E publications and pre-defined database queries, which are available on the website.

ENTSO-E Data Expert Group and other working groups have been consolidating common data and reports since the time ENTSO-E became operational. These activities are going on including consolidation of the common glossary.

Should you have any comments, please, contact us at:
info@entsoe.eu.

2. Sources

Definitions for terms that were developed within ENTSO-E are marked accordingly with the source ENTSO-E.

Specific subsets of definitions within ENTSO-E are as follows:

- SA: System Adequacy:
  https://www.entsoe.eu/fileadmin/user_upload/_library/publications/ce/UCTE_System_Adequacy_Methodology.pdf
- OH: Operation Handbook:
  https://www.entsoe.eu/index.php?id=57

Other sources referred hereinafter are as follows:

- CEC: California Energy Commission:
  http://www.energy.ca.gov/glossary
- IEA: International Energy Agency
- STD: Sci-Tech Dictionary
- EURELECTRIC: Union of the electricity industry
- EIA: Energy Information Administration (Official energy Statistics from the US Government):
  http://www.eia.doe.gov/glossary/index.html

3. Terms used in publications

For indication of the ENTSO-E publications in which a particular term is used, the following abbreviations are used:

- MS: Monthly Provisional Values (Monthly Statistics)
- SYB: Statistical Yearbook
- M: Memo
- SA: System Adequacy

The following legend is applicable to the whole Glossary of Terms:
[1] *Slight adaptation has been made to the original definition.*

Term	Definition	Publication	Source
Adequacy	See System Adequacy.	-	-
AC	See Alternating Current.	SYB, SA	EIA
Alternating Current	An electric current that reverses its direction at regularly intervals.	SYB, SA	EIA
Circuit Length	The circuit length of an electrical line or cable is the actual length of each of its conductors or the mean of the lengths of the conductors, if there is any appreciable difference in their lengths.	MS, SYB	ENTSO-E
Classification of Power Units	According to the category of Primary Energy and fuel used for electricity generation, the ENTSO-E statistics considers the following classification in its publications: • Hydro • Nuclear • Thermal Conventional • Other Renewable (…of which wind) • Not clearly identifiable In some publications, thermal conventional is also split into lignite, hard coal, gas, oil and mixed fuels and non attributable fuels.	MS, SYB, M, Web	ENTSO-E
Congestion	It means a situation in which an interconnection linking national transmission networks cannot accommodate all physical flows resulting from international trade requested by market participants, because of a lack of capacity of the interconnectors and / or the national transmission systems concerned.		Regulation EC 1228/2003
Consumption	See Load and relations to consumption in the following document: https://www.entsoe.eu/fileadmin/user_upload/_library/publications/ce/Load_and_Consumption_Data.pdf		
Consumption of Pumps	The electrical energy absorbed by the motor pumps in raising the water into the upper reservoir for the generation of electrical energy, It should include the electrical energy consumed by the auxiliary equipment and transformer losses during pumping. See also Pumped Storage.	MS, SYB, SA	ENTSO-E
Control Area	It is a coherent part of the ENTSO-E interconnected system (usually coinciding with the territory of a company, a country or a geographical area, physically demarcated by the position of points for measurement of the interchanged power and energy to the remaining interconnected network), operated by a single TSO, with physical loads and controllable generation units connected within the Control Area. A Control Area may be a coherent part of a control block that has its own subordinate control in the hierarchy of secondary control (see also the Glossary in the Operation Handbook).	MS, SY	ENTSO-E (Operation Handbook)
Conventional Transmission Capacity	A theoretical value based on parameters standardised within ENTSO-E (continental Europe) for calculation of the thermal load capacity of each Tie Line. These are: ambient temperature of +35ºC, wind velocity of 0.56 m / s at a right angle to the line, as well as the voltage of the line.	SYB	ENTSO-E
Cross Frontier Line	See Tie Line.		
DC	See Direct Current.		-
Demand Side Management	All the activities addressed to encourage customers to modify patterns of electricity usage, including the timing and level of electricity demand. DSM covers the complete range of load shape objectives, including strategic conservation and load management, as well as strategic load growth. It does not include (different from Directive 2003 / 54 / EC) energy and load-shaped changes arising from the normal operation of the marketplace or from government-mandated energy-efficiency standards. In system studies, the distinction is made between controllable DSM and uncontrollable DSM. Controllable DSM includes curtailment of interruptible loads and / or for emergency procedures such as voltage reductions and the anticipated effects of public appeals.		EIA[1]
Direct Current	Direct current or DC electricity is the continuous movement of electrons from an area of negative (–) charges to an area of positive (+) charges through a conducting material.		
DSM	See Demand Side Management.		
Electrical Cable	An underground or a submarine set of conductors, insulators and other equipment for conveying electrical energy between two points of a network.		Eurelectric

Term	Definition	Publication	Source
Electricity Balance	Computes the consumption of electricity from the supply side (not metered in final consumer). In the ENTSO-E, it is presented as the sum of Net Production (split by Classification of Power Units) minus the Consumption of Pumps plus Exchange Balance. Due to fact that consumption is computed from the supply side, the electricity balance includes the distribution and Transmission Losses.	MS, SYB, SA	IEA[1] Eurelectric[1]
Electricity Supply Situation	See Electricity Balance.		
Energy Not Supplied	Ann estimation of the energy not supplied to final customers due to incidents in the transmission network.	MS, SYB	ENTSO-E
ENS	See Energy Not Supplied.		
Equivalent Time of Interruption	The duration of an interruption in minutes multiplied by the energy not supplied divided by the consumption for the last 12 months. This value allows a direct comparison of interruptions that occurred during a year.	MS, SYB	ENTSO-E
Exchange Balance	The difference between the import and export physical flows on each interconnection line of a country.	MS, SYB, M, SA, Web	-
Generating Auxiliaries	The electrical energy absorbed by generating auxiliaries is the sum of the auxiliary power consumption for all generator sets under consideration during both the on-load and off-loads periods of the generator sets. Thus, it includes the consumption needed to support the operation of the power plant.	SA	ENTSO-E
Generation Adequacy	An assessment of the ability of the generation on the power system to match the Load on the power system.	SA	SA
Gross Generation	It is the sum of the electrical energy production by all the generating sets concerned, measured at the output terminals of the main generator.		ENTSO-E
Gross Production	See Gross Generation.		
Head Installation	It defines the part of a power station, which forms an operating unit in which the generator sets can • either pass the intake flow through the turbines using the same characteristic head height (difference between water levels causing pressure); • or pump water from the lower reservoir to the upper reservoir.	-	UNIPEDE[1] (before merging with Eurelectric)
Highest Load	See Peak Load.		
Hydro	Electricity derived from the potential and kinetic energy content of water. It can be classified as: Storage Hydro, Run of River, Pure Pumped Storage and Mixed Pumped Storage.	MS, SYB, M, SA, Web	Eurelectric, ENTSO-E
Load	The hourly average active power absorbed by all installations connected to the transmission network or to the distribution network, excluding the pumps of the pumped-storage stations and the consumption of generating auxiliaries, but network losses are included See also: https://www.entsoe.eu/fileadmin/user_upload/_library/publications/ce/Load_and_Consumption_Data.pdf	MS, SYB, M, SA	CEC[1] ENTSO-E
Loop Flow	The movement of electric power from generator to load by dividing along multiple parallel paths; it specially refers to power flow along an unintended path that loops away from the most direct geographic path or contract path.	SA	EIA
Net Generating Capacity	Net Generating Capacity of a power station is the maximum electrical net active power it can produce continuously throughout a long period of operation in normal conditions, where: • "net" means the difference between, on the one hand, the gross generating capacity of the alternator(s) and, on the other hand, the auxiliary equipments' load and the losses in the main transformers of the power station; • for thermal plants "normal conditions" means average external conditions (weather, climate…) and full availability of fuels; • for hydro and wind units, "normal conditions" refer to the usual maximum availability of primary energies, i.e. optimum water or wind conditions. Net Generating Capacity of a country is the sum of the individual	SYB, M, SA	ENTSO-E

Term	Definition	Publication	Source
	Net Generating Capacity of all power stations connected to either the transmission grid or to the distribution grid.		
Mixed Pumped Storage	Pumped Storage with a significant cumulative flow into the upper reservoir.	SA	ENTSO-E
National Representativity Index	See Representativity.		
Net Generation	It is the Gross Generation less the electrical energy absorbed by Generating Auxiliaries and the losses in the main generator transformers.	MS, SYB, M, SA, Web	ENTSO-E
Net Production	See Net Generation.		
Network Reliability	Reliability is a general term encompassing all the measures of the ability of the system, generally given as numerical indices, to deliver electricity to all points of utilisation within acceptable standards and in the amounts desired. Network reliability (comprising generation and transmission facilities) can be described by two basic and functional attributes: Adequacy and Security.	MS, SYB	-
Not Clearly Identifiable Sources	Not Clearly Identifiable Sources comprise Power Plants or Power Units, which, according to the primary energy used, cannot be categorised.	MS, SYB, M	-
Not Unambiguously Identified Sources	See Not Clearly Identifiable Sources.		
Nuclear	Electricity generated by the use of thermal energy released from the fission of nuclear fuel in a reactor.	MS, SYB, SA, Web	EIA
Other Renewable Energy Sources	In the ENTSO-E statistics, this category comprises all Renewable Energy Sources except total Hydro production.	MS,SYB, M	ENTSO-E
Other Renewables	See Other Renewable Energy Sources.		
Own Consumption	See Generating Auxiliaries.		
Peak Load	The maximum hourly demand during a period of time: day, month or year.	MS, SYB, M, SA, Web	EIA[1]
Physical Energy Exchange	See Physical Energy Flow.		
Physical Energy Flow	It represents the real movements of energy between neighbouring countries metered in cross-border Tie Lines in both directions, in the system and out of the system.	MS, M	ENTSO-E
Physical Export	See Physical Energy Flow.		
Physical Import	See Physical Energy Flow.		
Primary Energy	All energy consumed by end users, excluding electricity but including the energy consumed at electric utilities to generate electricity.	-	EIA
Power Plant	Power Plant consists of one or more Power Units, which usually have a common infrastructure and which are either able to operate independently or their operation is mutually influenced or limited by specific operating regimes and technology. Remark: Exact definition and delimitation of power units and power plants is up to each power producer, who provides data to a responsible TSO. For the ENTSO-E, TSO is a source of such data.		ENTSO-E
Power Produced in Parallel Operation	It is the sum of the net electrical power produced in power stations participating in synchronous operation. It takes into account the spinning reserve, but excludes units injecting into systems, which are coupled to the interconnected network only by an AC / DC-link, and those, which cannot be operated with 50 Hz. Remark: Since January 2007, these data are no longer collected and published.	SYB, M	ENTSO-E
Power Station	See Power Plant.		
Power Unit	Equipment (a machine set) generating electricity, which generally consists of a few technological parts. For purposes of the ENTSO-E, a power unit means: • One AC generator in case of a thermal or a nuclear unit; • One Head Installation in case of a hydro unit; • One wind farm in case of a wind unit. See also Power Plant.		ENTSO-E

Term	Definition	Publication	Source
Protection Device	Equipment applied to electric power systems to detect abnormal and intolerable conditions and to initiate corrective actions to ensure continuity of electric service, to limit injury to people and to limit damage to equipment. These devices include lightning arresters, surge protectors, fuses and relays with associated circuit breakers, reclosers and so forth.	MS, SYB	STD
Pumped Storage	A hydro unit in which water can be raised by means of pumps and stored, to be used later for the generation of electrical energy. It can be classified as: Pure Pumped Storage and Mixed Pumped Storage.	SA	ENTSO-E
Pure Pumped Storage	Pumped Storage without a significant natural cumulative flow into the upper reservoir.	SA	ENTSO-E
Reference points	The dates and times for which power data are collected. Reference points are characteristic enough of the entire period studied to limit the data to be collected to the data at the reference points.	-	ENTSO-E
Renewable Energy Sources	It means renewable non-fossil energy sources (wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases)	MS, SYB, SA, Web	EC
Renewables	See Renewable Energy Sources.		
Representativity	This is a specific ENTSO-E term, which generally means that certain values might not cover the whole country. It is expressed as a percentage. There might be differences between the approaches of the ENTSO-E statistics and System Adequacy reports.	MS, SYB, SA, Web	ENTSO-E
Run of River	A hydro unit at which the head installation uses the cumulative flow continuously and normally operates on base load.	-	ENTSO-E
Scheduled (Program, Declared) Energy Exchange	See Scheduled (Program, Declared) Energy Flow.		
Scheduled (Program, Declared) Energy Flow	The program export (respectively import) of electricity in one member state on the basis of an underlying contractual arrangement to the effect that the simultaneous corresponding take-up (program import (respectively export)) of electricity will take place in another Member State or a third country.	MS, SYB, SA	EC, ENTSO-E
Scheduled (Program, Declared) Export	See Scheduled (Program, Declared) Energy Flow.		
Scheduled (Program, Declared) Import	See Scheduled (Program, Declared) Energy Flow.		
Security	A measure of a power system's ability to withstand sudden disturbances, such as electric short circuits or unanticipated losses of system components or load conditions together with operating constraints. Another aspect of security is system integrity, which is the ability to maintain interconnected operations. Integrity relates to the preservation of interconnected system operation, or the avoidance of uncontrolled separation, in the presence of specified severe disturbances.	-	ENTSO-E
Storage Hydro	A hydro unit, at which the head installations store their cumulative flows wholly or partially in their retaining works (dam) in order to generate electricity later. Depending on the period required to fill a reservoir, storage hydro can be defined as follows: pondage (between 2 and 400 hours) and reservoir (>400 hours). These head installations are normally operated in such a way as to allow load following. By extension, when the operation of a head installation is directly related to that of a reservoir upstream and the intermediate inflows are negligible, these head installations must be considered to belong to the same category as the one who governs them.	-	ENTSO-E
Substation	Facility equipment that steps up or steps down the voltage in utility power lines. Voltage is stepped up where power is sent through long distance transmission lines, and stepped down where the power is to enter local distribution lines. They can be classified as normal outside substation, armoured substation and underground substation.	SYB	CEC[1]
System Adequacy	System adequacy of a power system is a measure of the ability of a power system to supply the load in all the steady states in which	SA	SA

Term	Definition	Publication	Source
	the power system may exist considering standards conditions. System adequacy is analysed through Generation Adequacy and Transmission Adequacy (main focus on generation capacity and load and on simultaneous interconnection transmission capacity). Remark: The Operation Handbook currently contains a slightly different definition.		
Thermal Conventional	Electricity generated by an electric power plant using mainly coal, petroleum (derivates) or gas as its primary source of energy. In ENTSO-E statistics, we use the term "conventional" for the production of electricity with a thermal process that is not generated using Nuclear or Renewable Energy Sources.	MS, SYB, M, SA, Web	EIA[1]
Tie Line	A transmission line connecting two countries.	MS, SYB, SA	EIA
Transit	An energy flow that occurs in a country, which is neither the source nor the sink of the energy flow. The energy flow arrives in the grid over one border and leaves the country over one or more borders.	-	ENTSO-E
Transmission Adequacy	An assessment of the ability of a power system to manage the flow resulting from the location of Load and generation.	SA	SA
Transmission Losses	The difference between the fed-in (generation) and the delivery energy to distributors. Own needs for the operation of the grid are included.	SYB, SA	ENTSO-E
Transmission System Operator	A company that is responsible for operating, maintaining and developing the transmission system for a control area and its interconnections.	-	-
TSO	See Transmission System Operator.		
Vertical Load	The total amount of power flows out of the transmission network into distribution and large customer networks.	SYB	ENTSO-E
Wind energy	Kinetic energy in wind used to generate electricity in wind turbines.	-	IEA