



Probability of interruption of interruptible capacities

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The probability of interruption of standard products of interruptible capacity is calculated according to article 16 of Network Code Tariff, established through Commission regulation (UE) n°2017/460 of 16 March 2017.

As a reminder, the summary of products including the interruptible capacities is the following*:

PIR marketed capacity according to different step time

	Non CAM points				CAM Points					
	Dunkerque	Jura	Oltingue		Virtualys		Taisnières B		Obergaillbach	
	IR0006	IR0031	IR0011		IR0060		IR0015		IR0010	
	Entry	Exit	Exit	Entry	Exit	Entry	Entry	Exit	Entry	Exit
Yearly	F then I	F	F	F	F	F	F		F	B
Quarterly	F then I		F then I	F then I	F then B	F then B	F then I		F then I	B
Monthly	F then I		F then I	F then I	F then B	F then B	F then I		F then I	B
Daily	F		F	F	F	F	F	B	F	B
Within Day	UBI (I)		F	F	F	F	F		F	
			UBI (I)		UBI (I)		UBI (I)		UBI (I)	

marketed capacity on **TRANS@ctions**

marketed capacity on **PRISMA**

F: firm capacity **I**: interruptible capacity (marketed only once all firm capacities are sold out)
B: backhaul capacity

* The interruptible capacity for Virtualys entire is available only in winter.

GRTgaz calculates probability rate by point for all type of capacities. GRTgaz considers that all maturities of interruptible capacities are interrupted simultaneously.

1. Methodology of calculation

The probability of interruptible Pro is calculated according to the formula of the Commission regulation (UE) n°2017/460:

$$\text{Pro} = \frac{N \times D_{\text{int}}}{D} \times \frac{\text{CAP}_{\text{av. int}}}{\text{CAP}}$$

Where:

- N is the expectation of the number of interruptions over D;
- D is the total duration of the respective type of standard capacity product for interruptible capacity expressed in hours;
- D_{int} is the average duration of the expected interruptions expressed in hours;
- $\text{CAP}_{\text{av. int}}$ is the expected average amount of interrupted capacity for each interruption where such amount is related to the respective type of standard capacity product for interruptible capacity;
- CAP is the total amount of interruptible capacity for the respective type of standard capacity product for interruptible capacity.

2. Scenario for calculation

The probability of interruption of interruptible capacities of Virtualys, Obergailbach and Dunkerque was calculated according to the reference scenario of the creation of a single gas market area ¹ taking into account the consumption historical data and the maintenance works over the period from 01 Sep 2011- to 31 Dec 2018 (only over 01 Nov 2015 – 31 Dec 2018 for Virtualys as this interruptible capacity was not proposed previously).

The hypothesis of the reference scenario are the following:

- Fos : 40 GWh/j
- Montoir : 40 GWh/j
- Pirineos : -146 GWh/j
- Oltingue : historical data
- Jura : historical data
- % CCGT utilisation : 71% during winter, 62% during summer
- Storages : historical data
- Balance² by entry points at North in chronological order Dunkerque, Virtualys, Obergailbach.

Oltingue was an exit point (an exit historical flow is considered in the reference scenario of zone merger) and became a bidirectional point as of 1st of June 20 (entry capacity: 100GWh/j firm + 100 GWh/j interruptible). For the calculation of the probability of interruption of interruptible capacity of Oltingue the scenario was adapted as 200 GWh/j in entry.

¹ Deliberation of the Energy Regulatory Commission of 26/10/2017 on the creation of a single gas market area in France; pages 17,18

² The network is considered as balanced: the sum of the entry and exist flows is equal to zero

The calculation of the probability of interruptible capacities of other points is based on historical data of the nominations over the period 01 Jan 2015 – 31 Dec 2018.

NB. All historical data are available in SmartGRTgaz

3. Calculation result

The table below shows the probability of interruption for each point:

Probabilité d'interruption/Probability of interruption	
Entrée PIR/ PIR Entry	Capacité interruptible/ Interruptible capacity
Taisnières B/ Taisnières L	73,3%
Virtualys	5,0%
Dunkerque	23,6%
Obergailbach	39,2%
Oltingue	63,7%
Sortie PIR/ PIR Exit	Capacité interruptible/ Interruptible capacity
Virtualys	non commercialisé/ non commercialised
Oltingue	15,3%
Jura	non commercialisé/ non commercialised

The level of interruptibility of the IP Taisnières L has specific features to be conditioned by the conversion L to H, which explains the high probability of interruption.

The level of interruptibility of the IP Virtualys (entry) is only proposed in winter and not impacted by summer maintenance works and consequently the probability of interruption is low.

The scenario with 200 GWh/j at Oltingue entry (historically this point was an exit up to 250 GWh/j) strongly increases the entries in upstream of the congestion NS1. The probability of interruption of this point is quite high due to this congestion.



The interruption rates of the interruptible capacities are highly variable from point to point and from year to year particularly because of:

- the maintenance works (depending on yearly maintenance work program for each point which is different every year);
- the supply scenario (for each scenarios there are many supply scenarios for upstream entries which impact interruption rate by point).

For these reasons it is relevant to calculate the unique interruption rate as the weighted average based on the volumes on the interruptible capacities. This rate is equal to 52%.

[>> Download the calculation details \(Excel spreadsheet\)](#)