Superpoints

Superpoints allow you more flexibility in the event of restrictions. They are used in two cases:

- **For maintenance,** in the event of works on the GRTgaz core network.
- **To manage the network's residual limits,** in the event of a mutualised restriction.

The aim is to pool restrictions on groups of points called superpoints, allowing you to optimise your nominations and optimise your favourite point.

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Superpoints, for greater flexibility and capacity

More flexibility

Let's take the example of a works restriction reducing the capacity of a group of two points by half: 500 instead of 1,000 (in GWh/d). Previously, GRTgaz divided this constraint by point (250 and 250). Thanks to the superpoints, the choice is left to shippers: for example, you can choose to optimise point A (500+0).
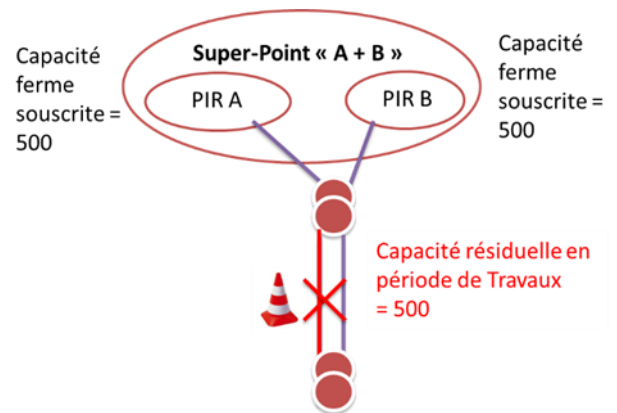
Restrictions	Without superpoint	With superpoint
	Max A = 250; Max B = 250	Max (A+B) = 500
	GRTgaz decides for the shippers	Shippers have the choice Example: Nom A= 450 / Nom B = 50

More capacity

Your confirmations in the opposite direction of the restriction of the superpoint allow you more nominations within the same superpoint. It is a "bonus".

For example: Superpoint "A+B-C", A and B being entries and C being an exit. We assume the same constraint as before: max. (A+B-C) = 500. Your confirmed quantities on exit C (e.g. 100) increase your entry nomination possibilities accordingly (500+100=600 on A+B).

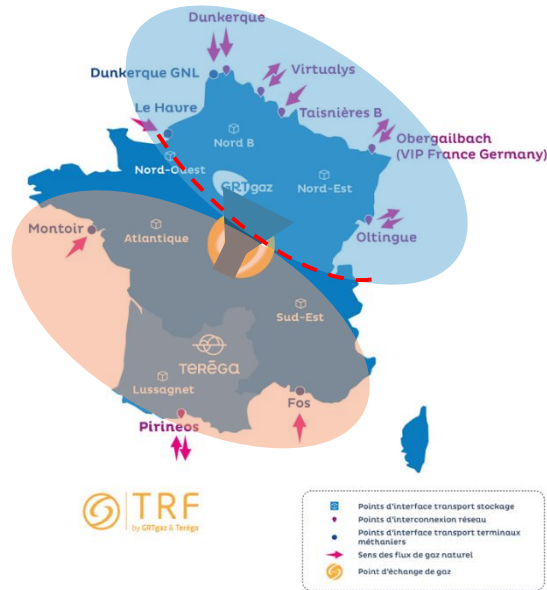## Superpoints restrict either the upstream entries or the downstream exits

To reduce gas transit on the congestion front (in the event of works or mutualised restrictions), the TSOs have two possibilities:

- Either to restrict gas entries upstream of the congestion front (and any gas exit upstream then constitutes a bonus, see example above);
- Or to restrict gas exits downstream (and any gas entry downstream is then a bonus).

Or the upstream entries are restricted

(and upstream exits are bonuses)

Either the downstream exits are restricted

(and downstream entries are bonuses)

The restrictions are applied as soon as possible downstream in order to minimise the impact on the price of the PEG, however in some cases this is not enough, and the restriction is then applied upstream.

The Superpoint list

You can view the full list of superpoints in the Reminder "List of limits and superpoints".

The superpoints that have been the most used so far are the following:

- NS1 upstream
- NS2, NS3, NS4, EO2, S1 downstream

North -> South and East -> West limits

Special case: Superpoints including PITS

In order to provide maximum flexibility, the PITS are included in the superpoints:

- Either as restricted points: withdrawal upstream of limits and injections downstream;
- Or as bonus points: injections upstream of limits and withdrawal downstream.

In the event of a PITS/direction constrained by an active superpoint, you must:

- Consult INGRID to discover the superpoint restrictions, as for the other PCR (see next section);

- Consult Storengy to discover your confirmations, provided there as usual; however, it may take a little more time to arrive due to superpoint optimisation (around 45 min. after the start of the cycle).

Special case: Superpoints shared by GRTgaz and Teréga

On the North to South scenario, the superpoints shared by GRTgaz and Teréga are NS2 downstream, NS3 downstream, EO2 downstream and NS4 downstream. These superpoints, which contain both GRTgaz and Teréga points, are subject to special management, as confirmations on one point depend on confirmations on the other points of the superpoint, which may belong to the other TSO.

Management of NS4 Downstream

This superpoint only contains the restricted points belonging to Teréga (Pirineos and Lussagnet exits). The Fos PITTM entry is a bonus. Its management is **totally transparent for shippers**: GRTgaz automatically sends the Fos bonus per shipper to Teréga, which allows you to fully benefit from the flexibility of the superpoint.

Management of NS2, NS3 and EO2 Downstream

These 3 superpoints contain restricted points from both GRTgaz (Atlantic, and South-East injections for NS2) and Teréga exits.

Each superpoint is divided into 2 sub-superpoints, managed by each of the TSOs according to the usual rules:

Superpoint	GRTgaz Sub-Superpoint	Teréga Sub-Superpoint
NS2 downstream	SSPNS2D: Fos + Atlantique + South-East	Pirineos + Lussagnet
NS3 downstream	SSPNS3D: Fos + Atlantique	Pirineos + Lussagnet
EO2 downstream	SSPNS3D: Atlantique	Pirineos + Lussagnet

In order to conserve the full flexibility of these superpoints for shippers, the TSOs implement 2 functionalities:

- The <u>transfer of COE</u> from one sub-superpoint to another, which can be done <u>by the shipper</u> if he wishes to benefit from an unused right with one TSO by transferring it to the other TSO.
- The <u>mutualisation of UBI</u> is managed by the TSOs and is completely <u>transparent</u> for shippers.

Focus on how the TSOs split the available capacity between both TSos (transparent for the shipper)

The global superpoint's capacity (NS2, NS3 or EO2 downstream) is split between both sub-superpoints to subscribed exit capacities pro-rata. So that each sub-superpoint has the same restriction rate on subscribed capacities.

Example:

Superpoint (SP)	EO2 downstream (Atlantic+Pirineos+Lussagnet)
COS (exit) (GWh/d)	802
CPRTt (exit) (GWh/d)	390
TRf	= 1-390/802 = 51%

Sub-superpoint (SSP)	Teréga EO2 downstream (**Piri**+Lus)	GRTgaz EO2 downstream (**Atl**)
COS (exit) (GWh/d)	480	322
CPRTt (exit) (GWh/d)	= 390*480/802 = **233**	= 390*322/802 = **157**
TRf	51%	51%

So, any modification on subscribed exit capacities may have an impact on the available capacity on GRTgaz or Teréga side.

As long as the capacities on PITS are not yet subscribed (before March for the next summer), the available capacity is split to the technical exit capacity pro-rata (CTN).

In GRTgaz maintenance schedule, the restrictions are published <u>only on GRTgaz sub-superpoints</u> (and not on the global superpoint, which also includes Teréga points).

Focus on COE transfer between GRTgaz and Teréga (action for the shipper, if he wishes)

This functionality is useful for you only if you wish to benefit from <u>firm</u> flexibility between both TSOs.

If you have capacities both on GRTgaz and Teréga side, and that you do not plan to use your whole operational capacity on one side, you can transfer all or part of your COE from one TSO to the other. Your transfer (from the source TSO to the target TSO) cannot exceed your rights on the "source" sub-superpoint, that is to say your COE on this sub-superpoint plus your possible bonus.

So:

$$Transfer\ max_{GRTgaz \rightarrow Teréga} = COE_{SSP\ GRTgaz} + \text{bonus}$$

(your bonus corresponds to your last confirmation on the entry points)

Your resulting rights on GRTgaz sub-superpoint are :

$$COE_{with\ bonus\ and\ transfers}$$

$$= COE_{SSP\ GRTgaz} + \text{bonus} + Transfer_{Teréga \rightarrow GRTgaz} - Transfer_{GRTgaz \rightarrow Teréga}$$

(and the contrary for the transfers from Teréga to GRTgaz)

Example: a shipper has subscribed 50 GWh/j on Atlantic and 30 GWh/j on Lussagnet. The restriction rate for the day is 50%. Then he can transfer 50*(1-50%) = 25 GWh/d from GRTgaz to Teréga. And he can transfer 30 * (1-50%) = 15 GWh/j from Teréga to GRTgaz. This is a transfer of operational (and not subscribed) capacity.

<u>How can you realize your COE transfer?</u>

You have to nominate on a point (like for a normal nomination). The type of the point is "TRC", like capacity transfer. The code is:

- TRNS2: for a transfer between the sub-superpoint SSPNS2D GRTgaz and the sub-superpoint Teréga.
- TRNS3: for a transfer between the sub-superpoint SSPNS3D GRTgaz and the sub-superpoint Teréga.
- TREO2: for a transfer between the sub-superpoint SSPEO2D GRTgaz and the sub-superpoint Teréga.

Your nomination shall be curtailed to the "transfer max" value if you exceeded it. You can visualize it in your confirmation notice:

Journée Gazière	PCR	Libellé	Sens	Qtité demandée	Qtité programmée
13/02/2023	IR0006	DUNKERQUE	REC	131 455 747	131 455 747
13/02/2023	IR0006	DUNKERQUE	REC	17 750 000	17 750 000
13/02/2023	IR0010	OBERGAILBACH	DEL	0	0
13/02/2023	IR0010	OBERGAILBACH	REC	0	0
13/02/2023	IR0011	OLTINGUE	DEL	-224 664 000	-224 664 000
13/02/2023	IR0011	OLTINGUE	REC	0	0
13/02/2023	IT0003	Fos Cavaou	REC	34 838 754	34 838 754
13/02/2023	PL001F	POOL DE LIVRAISON TRF	DEL	-138 479 842	-138 479 842
13/02/2023	TREO2	Transfert EO2	DEL	-224 664	-131 455
13/02/2023	TRNS2	Transfert NS2	REC	17 750	17 750
13/02/2023	TRNS3	Transfert NS3	DEL	0	0

Transfer from GRTgaz to Teréga

Transfer from Teréga to GRTgaz

The transfers from Teréga to GRTgaz appear in REC and the transfers from GRTgaz to Teréga in DEL.

UBI mutualization between GRTgaz and Teréga (transparent for the shipper)

In order not to waste any capacity on the superpoint, the UBI is mutualized between GRTgaz and Teréga: the available capacities on each of the sub-superpoints are gathered and redistributed to each TSO to demand pro-rata (within rights and then beyond rights). So that for example, massive LNG arriving in Fos or Montoir can benefit not only to Atlantic and South-East injections, but also to Lussagnet injections and Pirineos exits.

This is entirely managed by the TSOs, it is transparent for the shippers.

Focus on "LNG bonus"

For certain surperpoints, the LNG arriving in Montoir or Fos is directly included in your available firm capacity. In particular, for EO2 downstream, even if Fos and Montoir are upstream from the limit, they are physically on both sides of the limit. So that one part of the LNG goes downstream are relieves the restriction, allowing GRTgaz to give you more firm capacity. You can see it in advance or in D-1:

- The CMNTt (several months before) includes minimum LNG assumptions;
- The CPRTt (several months before) includes probable LNG assumptions;
- The CTE (D-1) includes the real LNG flows for D.

How do I view my restrictions on a point?

To view your GRTgaz restrictions on a point, you must look at the restrictions on this point (PCR), as well as on all the superpoints that include this particular point. This is valid when consulting the Consolidated Maintenance Programme (PTC) as well as when you view your operational capacities (in the event of works or mutualised restrictions).

Caution: not all restrictions are given by superpoints. There may still be restrictions impacting one single point (for example, the case below, in the event of works close to the Obergailbach point).

Example for a day when SPN3U is active with an individual restriction on Obergailbach:

Consulting the consolidated maintenance programme

If you want to view the restrictions on the Obergailbach entry PIR, Ingrid portal automatically displays the restrictions of all superpoints including Obergailbach (SPN3U and SPNS1U), as well as the restriction on the Obergailbach single point. In the example above:

- The restrictions on SPN3U (Virtualys + Obergailbach): TRf 40%
- The restrictions on the Obergailbach PIR: TRf 18,41%

Consulting my operational capacities

Your operational capacities are displayed by superpoint and then by the points that make up this superpoint.

For example, if you would like to know your reduced operational capacity on the Obergailbach PIR, you must take into account:

- The Obergailbach PIR COE

- The SPN3U COE (Virtualys + Obergailbach)

- The SPNS1U COE (Virtualys + Obergailbach + Oltingue): it is not restrictive.

Visualize my Operational Capacity Notices

Gas Day	D ⬤ D+1	Data type ☑ COS ☑ COE ☑ COA/CUD/CUHD	Point status ⦿ All points ◯ Only rts

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Gas Day	CP	Direction	Transmission request	COE
14/02/2023	IR0010	REC	0	34 030 322
14/02/2023	IR0010	DEL	0	12 000 000
14/02/2023	SPN3U	REC		29 233 243
14/02/2023	SPNS1U	REC		349 233 243

For a customer who has only subscribed at the Obergailbach point (and not Virtualys), the minimum between the Obergailbach COE and the SPN3U COE must be used to find the reduced capacity at Obergailbach on that day.

How can I view the UBI available?

A superpoint is active when the CTE (Effective Technical Capacity) of the superpoint is strictly below the sum of the CTN (Nominal Technical Capacity) at the points/direction of this superpoint.

As soon as a superpoint is active, sales of daily and within-day capacities are interrupted at the points/direction of this superpoint. The UBI service is then open on these points/direction, at the superpoint scale.

For example, if SPN3U is active, capacity unused at Obergailbach may be used on Virtualys (within the limits of the possible single restriction on Virtualys).

Viewing the UBI available on a point can be done in the following way:

- If this is a point/direction belonging to an active superpoint: the UBI is open on this point/direction. The available UBI is calculated and displayed on the point and the superpoint involved (for example here for Virtualys and Obergailbach, 233 GWh/d UBI on Virtualys + Ober, 11 GWh/d UBI available on Virtualys and 96 GWh/d UBI available on Obergailbach).

Visualize my Operational Capacity Notices

Gas Day **D** ◯ D+1

Data type: ☑ COS ☑ COE ☑ COA/CUD/CUHD

Point status: ⦿ All points ◯ Only restricted po

3 / 33 results

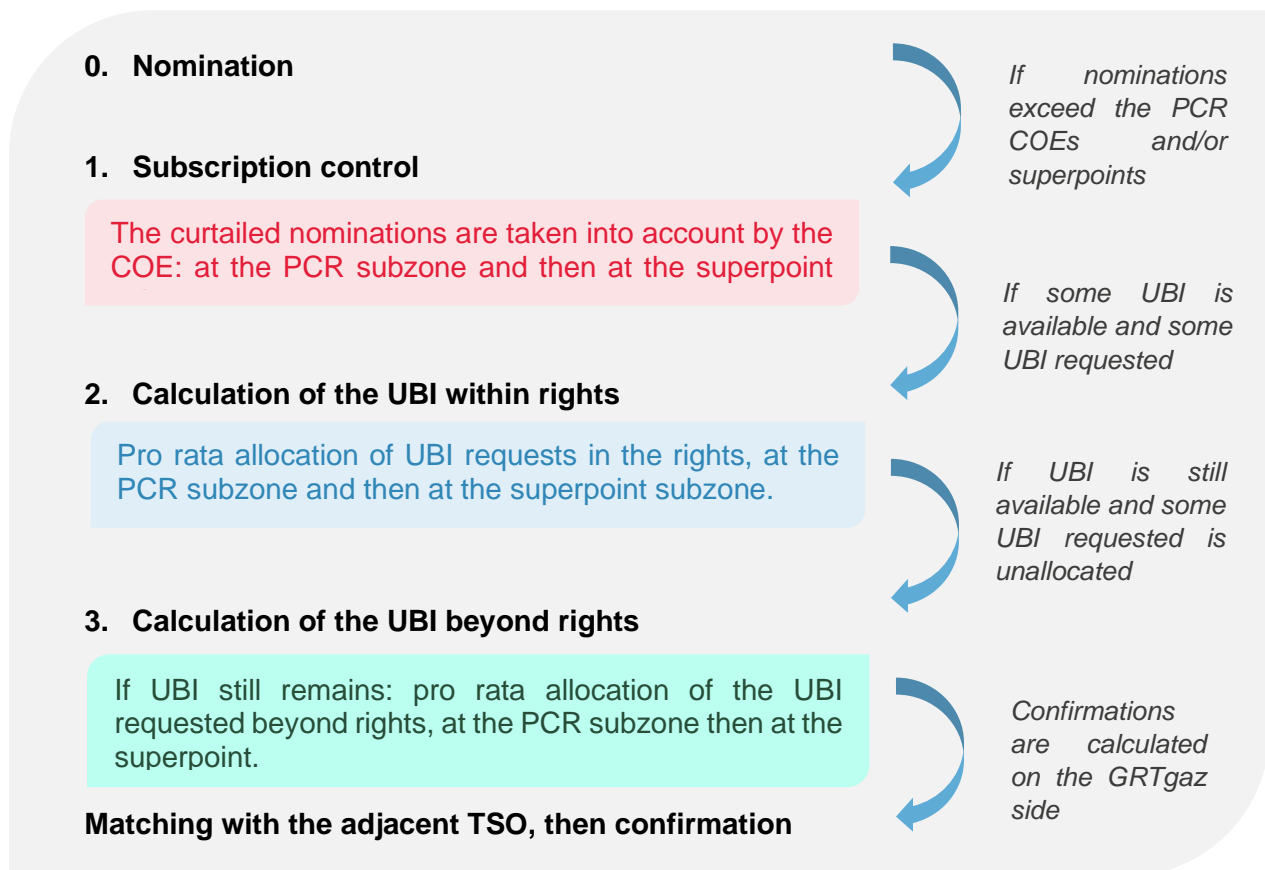| Gas Day	CP ⇾	Direction ⇾	Transmission request	Remaining UBI offer
16/02/2023	IR0010	REC	0	96 030 322
16/02/2023	IR0060	REC		11 322 000
16/02/2023	SPN3U	REC		233 243 322

How are my confirmations calculated?

If you nominate more than your guaranteed quantities, GRTgaz calculates the confirmations using the usual three steps:

1) Rights Control
2) Calculation of the UBI within rights
3) Calculation of the UBI beyond rights

At each stage, GRTgaz may curtail your nominations to comply with the constraints by point and then by superpoint.

Your confirmations, as well as your allocations, continue to be published by PCR.

Simplified 3-step diagram

0. Nomination

1. Subscription control

> The curtailed nominations are taken into account by the COE: at the PCR subzone and then at the superpoint

If nominations exceed the PCR COEs and/or superpoints

2. Calculation of the UBI within rights

> Pro rata allocation of UBI requests in the rights, at the PCR subzone and then at the superpoint subzone.

If some UBI is available and some UBI requested

3. Calculation of the UBI beyond rights

> If UBI still remains: pro rata allocation of the UBI requested beyond rights, at the PCR subzone then at the superpoint.

If UBI is still available and some UBI requested is unallocated

Matching with the adjacent TSO, then confirmation

Confirmations are calculated on the GRTgaz side

Example of confirmation calculations for an active superpoint

In the example below, to simplify, we consider a single step for the UBI (no distinction is made for UBI within rights and beyond rights). Example of confirmation calculations for a client having subscribed 100 on Virtualys and 100 on Obergailbach, with a 50% restriction rate on Virtualys + Obergailbach.

Example for a shipper			Data all shippers		
	TH	Ober		TH	Ober
			CTN	640	620
COS	100	100	∑COS	500	500
			TRF	0%	0%
			TRF	50%	
COE	100	100	CTE	640	620
COE		100	CTE		500
Nomination	120	80	∑Nominations	400	350

1. Subscription control

		Virtualys	Ober		Virtualys	Ober
We curtail at the COE	niv 0	100	80	*hypothesis*		
If sum of niv 0 > COE sp: *We curtail at the prorata of niv 0*	niv 1	56	44	*Confirmation except UBI*	280	175

	Virtualys	Ober
Available UBI	360	445
Available UBI	45	

2. UBI optimisation

		Virtualys	Ober		Virtualys	Ober
Nom' – confirmation except UBI	UBI demand	64	36	*UBI demand*	120	175
By point: if UBI demand < UBI offer, allocation at the prorata	niv 0	64	36	niv 0	120	175
For superpoint: if niv 0 < UBI niv 0 offer: allocation at the prorata	niv 1	10	5	niv 1 *(allocated UBI)*	18	27

Final confirmation	**65**	**50**		**298**	**202**

Example of confirmation calculations for an active superpoint + an individual constraint on a point

In the example below, to simplify, we also consider a single step for the UBI. Here is an example of confirmation calculations for a client having subscribed 100 on Obergailbach, with a 50% restriction rate on Virtualys + Obergailbach and 60% on Obergailbach.

Even if UBI is available on Virtualys + Obergailbach, the client's request for UBI cannot be satisfied as the UBI offer on Obergailbach is zero. On the other hand, Virtualys customers benefit from the full UBI offer on the superpoint.

Focus on mutualised restriction

Mutualised restriction is the last resort mechanism if a limit of the network is reached. It consists in a partial interruption of firm capacities on a superpoint,and is triggered within the day.
In this special case, it may be particularly useful for you to consult your "Guaranteed COA" to view your rights for the day in accordance with this within-day restriction (see "Find out more about Guaranteed COA" in the Transmission toolbox).