Detailed Process Model (DPM)

Peak Supply

As of 1 April 2011

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GTS
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Versienummer
1.1
Versiedatum
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Status
Final concept

Versions

Version	Name	Date	Status	Distribution
1.0	Initial version	01-06-2011	Final	GTS, ICWG
1.1	Final concept Comments of ICWG incorporated: - OV exit data will be delivered at working day 6 of the month - no protected users in a portfolio, means no peak threshold and thus no allocation on the peak volume virtual point	18-07-2011	Final	GTS, ICWG, ALV-Nedu

Contents

1 Introduction

In this document the new processing of peak supply as of 1 April 2011 (introduction of the new balancing regime) is described.

1.1 History

Until 1 April 2011;

- ☐ The peak supply processing is triggered by a mean twenty-four hours effective temperature that is lower than -9 °C.
- ☐ No near real time peak supply is calculated or made available.
- ☐ The offline allocations are altered with the peak volume.

1.2 New situation

In the post 1 April 2011 situation;

- ☐ The peak supply processing is triggered by the exceeding of a pre determined peak capacity threshold.
- ☐ The near real time and offline peak supply is calculated and made available.
- ☐ Neither the near real time allocations, nor the offline allocations are explicitly altered in case of a peak supply situation. The peak supply volume is determined and made available as a separate allocated volume.

This post 1 April 2011 situation has been drawn up in this document.

2 Basic assumptions

2.1 General

1. With the introduction of the new balancing regime, the procedure for the peak supply will change as already stated in the market process model (MPM). Under the new regime, peak supply will be triggered if the actual capacity delivered to protected users in a PV portfolio exceeds the peak supply threshold for the given PV portfolio. Peak supply is triggered and calculated per PV portfolio per hour. These peak supply thresholds are determined as an hourly value per portfolio per user category. Inputs for the calculation of these peak supply thresholds per portfolio are:
    a. LDC (Local Distribution Company) OV exit data, which is made available by the LDC's in two versions:
        i. OV exit data for month x, available in month x at approx. working day 6.
        ii. OV exit data (final) for month x, available in month x+4, at approx. working day 10.
    b. Planned capacity data by GTS (network point capacity without the domestic peak capacity). This data will not change after initial determination (i.e. one version only).
    c. The monthly fraction of domestic usage for a reference temperature of -9°C, as published on the GTS website.
2. Pre 1 July 2011 peak supply processing, applies to the user categories G1A, G2A, G2C and GKV. After the change at 1 July 2011 of the boundary value for the protected users (from an annual volume of 170.000 m3 (n) to a capacity of 40 m3/h (n)), peak supply will only apply to the user categories G1A and G2A.
3. The exceeding of the peak supply threshold (and the resulting peak supply volume) is calculated on basis of the allocation grand total for all of these categories (G1A and G2A combined). After this, the peak volume will be allocated to the portfolios per user category. This subdivision is necessary to facilitate peak supply under a balancing agreement.

4. In case of peak supply, the peak volume is transferred from GTS to each PV portfolio for every hour. This transfer will take place on the virtual peak supply network point as a transfer of the peak volume from GTS to the PV.
5. For every hour a peak volume (per portfolio, per user category) will be calculated in case of a peak supply situation.
6. The peak volume will be allocated on the peak volume virtual point as a transfer from GTS to the PV. The peak volume (allocation on the peak volume virtual point) can thus be made available via the regular IT means (Gasport allocation screens and B2B web services).

2.2 Near real time processing

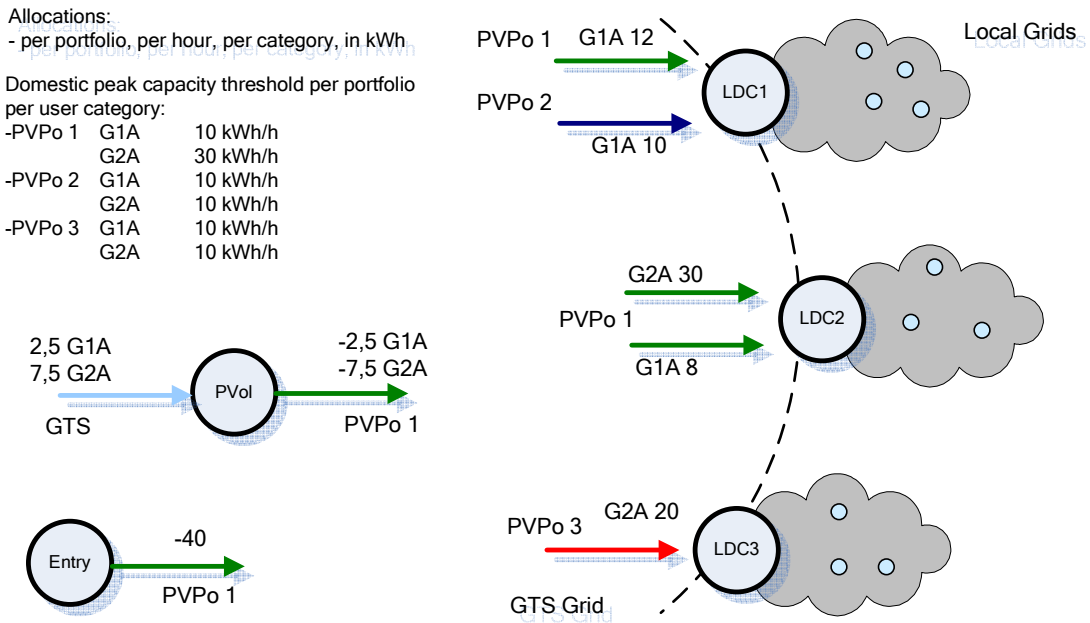
1. The allocations at LDC network points (both hourly and intra hour cumulative) will not be altered as a result of a peak supply situation. The allocations will be shown as is (as delivered by the CSS system to GTS and passed on to the PV's via B2B or Gasport). This procedure is in line with the pre 1 April 2011 processing of the peak supply by GTS.
2. The peak volume will be determined per hour, per portfolio, per user category.
3. For a PV portfolio, the peak volume of an hour will not cause (additional) imbalance in the POS of this hour as the peak volume will not be corrected in the exit allocations and the (same) peak volume will be added as an entry into the portfolio on the peak volume point. This applies to both the prognosis POS and the realised POS.

2.3 Off line processing

1. The allocations at LDC network points (both hourly and intra hour cumulative) will not be altered as a result of a peak supply situation. The allocations will be shown as is, as delivered by the LDC's (Local Distribution Company) to GTS and passed on to the PV's via B2B or Gasport. This procedure is different from the pre 1 April 2011 off-line processing of peak supply by GTS.
2. Also, a peak volume PV (portfolio) per supplier per user category will be determined.

3 Examples of peak supply

3.1 E1 - Simplified example of near real time peak supply



In the figure above, three LDC network points are depicted. For the simplicity of this example only the supplies to the protected users are presented. Three PV portfolios deliver gas to the protected users behind these network points. The depicted allocations are the hourly totals per network point per portfolio per user category.

Determining peak supply situation

Whether or not peak supply will occur, is determined by comparing – for each portfolio - the total peak capacity for the protected users with the total allocation for the protected users:

In the specific hour, PVPo1 (Programme responsible party Portfolio 1) encounters a peak supply situation: the allocations totals for domestic usage (30 + 8 + 12 = 50) surpass the total peak supply threshold (10 (threshold G1A) + 30 (threshold G2A) = 40). The resulting peak volume for this portfolio for this hour is 10.

The other portfolios do not surpass the threshold, so for these portfolios no peak supply situation is applicable.
PVPo2: (10 (threshold G1A) +10 (threshold G2A)) >= 10
PVPo3: (10 (threshold G1A) +10 (threshold G2A)) >= 20

Allocation of the peak supply volume

The peak volume (10) for PVPo1 in the specific hour will be allocated to the different user categories pro rata on basis of the peak capacity thresholds for the various user categories for the specific hour.

G1A: 10/40 * 10 = 2,5
G2A 30/40 * 10 = 7,5

These peak volumes will be "allocated" on the peak volume virtual point (Pvol) as a transfer between GTS and the PV (portfolio).

Peak supply in relation to programmes, damping and settlement

In the programme the programme responsible party should take into account the peak supply situation for the next (gas)day. In essence this means that the entries should be in balance (damping taken into account) with the exit allocations, which shall not exceed the peak supply threshold. Thus the amount expected to be allocated on the PVol virtual point should not be included in the day-ahead programme.

For the part above the peak supply threshold (the part which is delivered by GTS, the peak volume), the PV can not apply damping. In this example, the programme responsible party PVPo1 has to specify an amount of 40 for the supplies to the protected users (and not the 50).

The settlement will be calculated on basis of the difference between the near real time and off-line allocations. The allocations on the Peak Volume virtual point will be included in the calculation of the near real time imbalance.

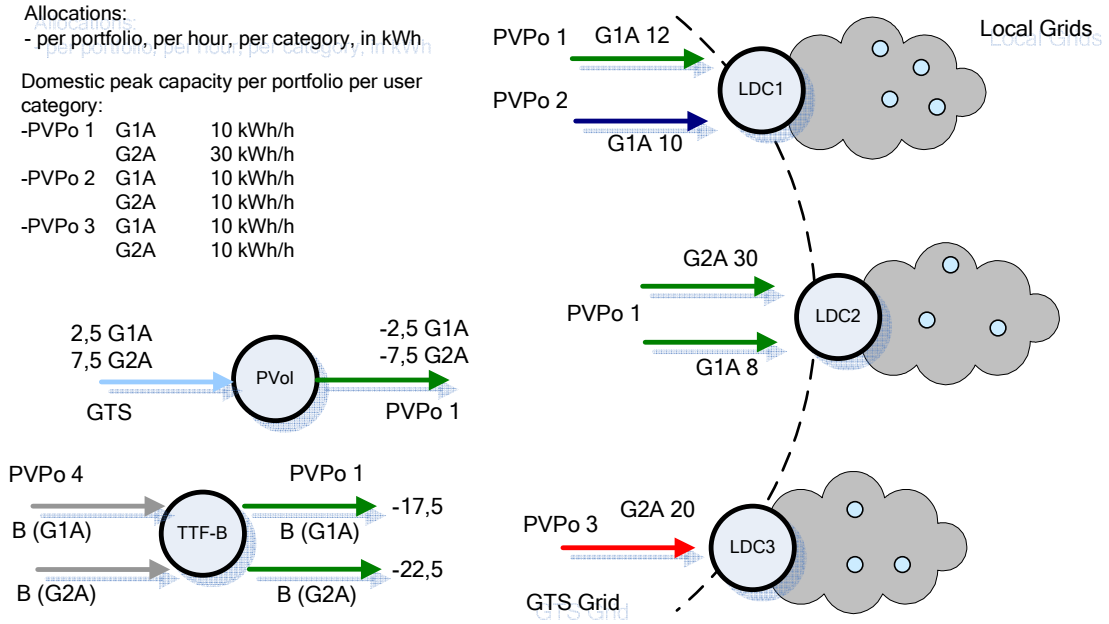
Information exchange with regards to peak supply

The allocations on the LDC network points will not be changed as a result of a peak supply situation.
The peak volume instead will be made visible to the PV as a transfer on the Peak Volume virtual point.

All of the above allocations are near real time available in the regular Gasport web screens and B2B webservices.

The forecast of a peak supply situation can be determined by the PV's themselves on basis of the peak supply threshold (capacity threshold per portfolio, per hour, per user category), which is made available by GTS at least one day ahead via the Gasport portal (web screen).

3.2 E2 - Simplified example of NRT peak supply with balancing agreement



This is the same example as the previous one (E1), except for the balancing relations (this delivery takes the place of the physical entry for PVPo1). PVPo1 has two (100%) balancing relations with PVPo4 (the balance supplier), in the user categories G1A and G2A.

Determining peak supply situation

This is the same as in the previous example.

Allocation of the peak supply volume

The peak volume (10) in the specific hour for PVPo1 will be allocated to the different user categories pro rata on basis of the peak capacity for the specific hour.

G1A: 10/40 * 10 = 2,5
G2A 30/40 * 10 = 7,5

These peak volumes will be "allocated" on the peak volume virtual point (Pvol) as a transfer between GTS and the PV (portfolio).

The allocations on the TTF-B balancing relations will be calculated with the peak supply volume corrected.

G1A balancing deal: 20 – 2,5 (peak volume correction) = 17,5
G2A balancing deal: 30 – 7,5 (peak volume correction) = 22,5

The entry allocations for PVPo1 on the TTF-B will be:
G1A: -17,5
G2A: -22,5

Peak supply in relation to programmes, damping and settlement

This is the same as in the previous example.

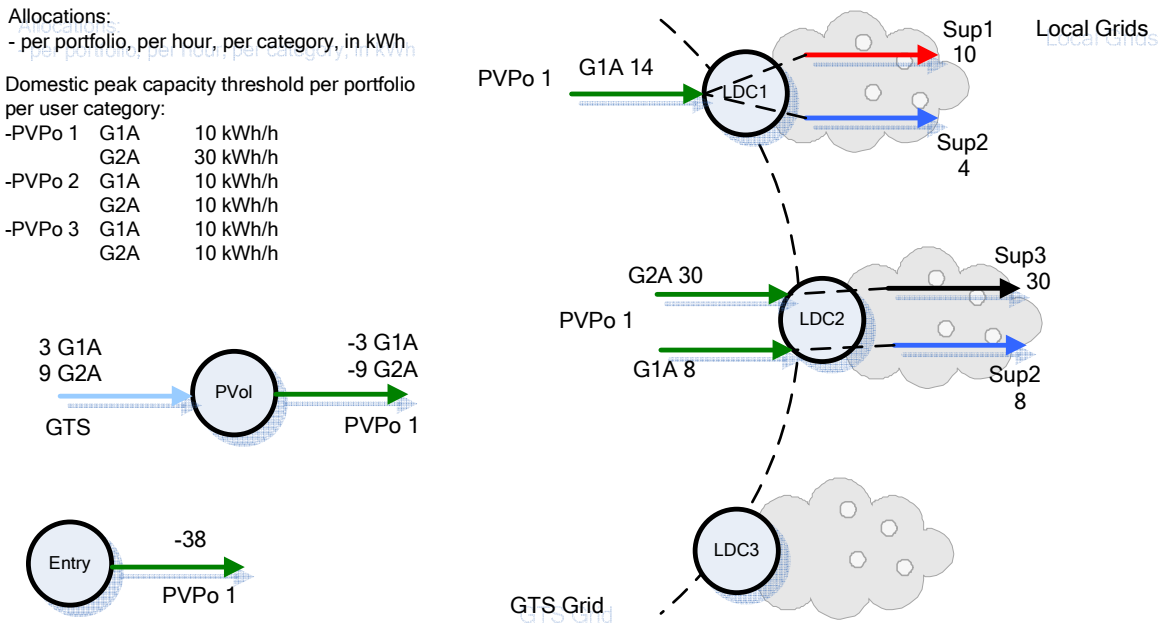
Of course the allocations on the balancing deals will be included as a forecast (grand total) in the programmes and as a realisation in the calculation of the settlement.

The balancing supplier will have to take into account in the programme message, the "lowered values" on the balancing agreement.

Information exchange with regards to peak supply

This is the same as in the previous example.
Please note that the balancing supplier cannot see that a peak supply situation has occurred, other than possibly in the effect on the allocation values on the balancing deal.

3.3 E3 - Simplified example of offline peak supply with balancing agreement



The situation for the PV is equal to the NRT example E1 (apart from the allocation values). In the offline situation the allocations on the LDC network points also include allocations to supplier(s). These allocations are delivered to GTS by the local distribution companies.

In the specific hour, PVPo1 (Programme responsible party Portfolio 1) encounters a peak supply situation: the allocations totals for domestic usage (30 + 8 + 14 = 52) surpass the total peak supply threshold (10 + 30 = 40). The resulting off-line peak volume for this portfolio for this hour is 12.

Allocation of the peak supply volume

The peak volume (12) for PVPo1 in the specific hour will be allocated to the different user categories pro rata on basis of the peak capacity thresholds for the various user categories for the specific hour.

G1A: 10/40 * 12 = 3
G2A 30/40 * 12 = 9

These peak volumes will be "allocated" on the peak volume virtual point (Pvol) as a transfer between GTS and the PV (portfolio).

A supplemental step in the off-line allocation of the peak volume is the calculation of the peak volume per shipper (portfolio) per supplier (per hour).

In this example the peak volumes per category (G1A: 3 and G2A: 9) will be proportionately allocated to the suppliers on basis of the allocations per shipper per supplier (as delivered by the local distribution companies).

For a PV portfolio, per user category, the sum of the allocations per supplier is calculated, in this example:

PVPo1	G1A	Sup1	10
		Sup2	12 (8+4)
PVPo1	G2A	Sup3	30

The peak volumes will then proportionately be divided (to the sum of the above allocations):

PVPo1	G1A	Sup1	(10/22) * 3 = 1,36
		Sup2	(12/22) * 3 = 1,64
PVPo1	G2A	Sup3	9

The offline peak capacity will be calculated more than once, based on the different versions of the allocations on LDC points. For the timing of these different calculation moments, please refer to paragraph *4.1 Determining peak capacity and relation to the allocations*.

3.4 E4 - Simplified example of settlement in a peak supply situation

In the settlement, the near real time allocations are compared to the offline allocations. For this settlement example the near real time situation of example E1 will be compared to the offline situation of example E3.

All allocations will be added, in order to calculate the settlement amount (as an example only for this hour).

Online (E1): -2,5 – 7,5 – 40 +12 +30 +8 = 0

Offline (E3): -3 -9 -38 + 14 + 30 +8 = 2

Settlement amount for this specific hour: 0 + 2 = 2

In this example the PV will pay (the neutral gas price) for a volume of 2.

Please note that the way the settlement is calculated (summation of all on- and offline allocations) in a peak supply situation does not differ from the way it is calculated in a non peak supply situation. The allocations on the peak volume point will of course be included in the settlement calculation. In case the peak volume allocations change as a result of changes later on in the allocations (different allocation versions on LDC points), the settlement value will also change as a result of this.

4 Process steps

4.1 Determining peak capacity and relation to the allocations

The domestic usage peak capacity threshold per portfolio per hour is valid for a period of approximately one month. This peak supply threshold (capacity threshold per portfolio, per hour, per user category) is determined on basis of the following inputs:

a. LDC (Local Distribution Company) OV exit data, which is made available by the LDC's in two versions:
   i. OV exit data for month x, available in month x at approx. working day 6.
   ii. OV exit data (final) for month x, available in month x+4, at approx. working day 10.
b. Planned capacity data by GTS (network point capacity without the domestic peak capacity), one version only.
c. The monthly fraction of domestic usage for a reference temperature of -9°C, as published on the GTS website.

These three sets of data are combined to produce the threshold value. The following timelines are assumed:

1. Delivery of OV exit data by LDC's at working day x.
2. Calculation of peak threshold (A) at working day x+2wd[1].
3. Threshold (A) available for market parties (to take into account when determining the programme content): working day x + 3wd.
4. Threshold (A) used in the near real time allocation process: working day x + 4wd.

The availability of the different types of thresholds:

	These attributes will be interfaced to the allocation process		
Threshold available (for month mm)	**Value**	**Value valid from**	**Type threshold**
Approx. wd09-mm-yyyy	A	wd10-mm-yyyy	NRT (near real time)
	A	01-mm-yyyy	Offline
Approx. wd10-(mm+4)-yyyy	B	01-mm-yyyy	Offline-Final

[1] Working day

The peak volume will be determined on basis of the allocations, the different allocation versions can lead to different peak volumes. The relation between the both is as follows:

Allocations	**Calculate based on type peak threshold**	**Triggered by**	**Output (PV allocation on Peak volume point)**	**Output (Peak volume per PV per supplier and vice versa)[2]**
Near real time	NRT	Near real time, every hour (hourly allocation) and every 5 minutes (prognosis).	Peak volume allocation near real time.	*None*
Version 1 Approx. working day 6 current month	Offline[3]	When all offline allocations V1 are made available by the LDC's and a peak threshold type *offline* is available.	Peak volume allocation offline (+ date/time calculated).	
Version 2 Approx. working day 6 month + 1	Offline	When all offline allocations V2 are available.	Peak volume allocation offline (+ date/time calculated).	
Version 3 Approx. working day 16 month + 1	Offline	When all offline allocations V3 are available.	Peak volume allocation offline (+ date/time calculated).	
Version 4 Approx. working day 10 month + 4	Offline-Final	When offline allocations V4 are available and a peak threshold type *offline-final* is available with a validity date starting in the month of the allocations.	Peak volume allocation offline-final (+ date/time calculated).	

The peak volume will only be calculated once for all versions mentioned above.

Note that a PV with a new portfolio (i.e. starting to deliver to domestic users) starting in month mm, can only be allocated near real time peak volume starting approximately the 10th working of month mm. Since such a PV has no protected users in its portfolio the previous month (mm-1) no threshold value will be determined until approximately the 10th working day[4].

In case of a bulk switch and/or new portfolio on LDC network points, for approx. the first 9 working days the peak volume near real time will not – or not correctly in case of a bulk switch - be calculated for this portfolio. The effect in case of a new portfolio is shown in the following example:

Entry	Exit	Pvol NRT	Pvol offline	
-120[5]	+120	-	-20	
-120	+120	-	-20	
-120	+120	-	-20	
----------	----------	----------	----------	approx. 9th working day
-100	+120	-20	-20	
-100	+120	-20	-20	
-100	+120	-20	-20	

The near real time vs. offline difference will be dealt with in the settlement process.

[2] Available for both the PV and the supplier

[3] Always the last available threshold will be used. In some cases the Offline threshold of the previous month has to be used. For example: the offline threshold is available on e.g. working day 9 in a month mm, the version 1 allocation for date 01-mm-yyyy executed on approx. working day 6, can only use the – last available - offline threshold values valid from 01-(mm-1)-yyyy.

[4] When a PV has no protected users in its portfolio, OV exit data for protected users is not available and thus no threshold is available for a portfolio, no peak volume will be determined and no allocation on the peak volume point for this portfolio will be calculated (also no zero values).

[5] The PV is responsible for balancing (near real time) his portfolio without peak delivery contribution.

4.2 Proces steps near real time

The process is described in details in the previous examples. The generic steps are:

1. Determination of peak capacity threshold.
2. Determination of LDC allocations (EDSN/CSS).
3. Calculate the peak volume per portfolio (per user category).
4. Calculate the balancing deal allocations (taking into account the peak volume).

4.3 Proces steps offline

The process is described in details in the previous examples. The generic steps are:

1. Determination of peak capacity threshold.
2. Determination of LDC allocations (LDC's).
3. Calculate the peak volume per portfolio (per user category) for the PV.
4. Calculate the balancing deal allocations (taking into account the peak volume).
5. Calculate the peak volume for the supplier.
6. The settlement will be calculated equally to non peak supply situations:
    a. Advance invoice based on near real time and version 3 offline allocations.
    b. Final invoice based on near real time and version 4 offline allocations.

5 Peak supply in the information exchange

5.1 Information for the programme responsible party (shipper)

5.1.1 Pre real time

The peak supply threshold (capacity threshold per portfolio, per hour, per user category), is made available by GTS at least one day ahead via the Gasport portal (web screen). One day ahead means:

- ☐ The threshold values apply to the next gasday (or later), the values can be used to determine the programme for the next gasday.
- ☐ The values will be used in the next day (or later) (near real time) allocation process.

5.1.2 Near real time

The peak volume will appear as an allocation on the peak volume virtual point and will thus be available in the Gasport web screens and B2B web services (downloads). The B2B services will also include the splitting up of the allocation in user categories.

5.1.3 Offline

The peak volume will appear as an allocation on the peak volume virtual point and will thus be available in the Gasport web screens and B2B web services (downloads). The B2B services will also include the splitting up of the allocation in user categories.

The peak volume per shipper per supplier will also be made available via B2B and Gasport.

5.2 Information for the supplier

5.2.1 Offline

The peak volume (per shipper per user category) will be made available via an alternative route (e.g. e-mail) to the suppliers. This will be done for the peak volumes that result after allocation versions 1, 2, 3 and 4.

For allocation versions 3 and 4 a peak volume invoice[6] will be sent out by GTS to the suppliers.

[6] The invoice for version 4 will be sent out after determination of the final peak gas price.