



Operation Report of the NNGS for the Year 2015

(In accordance with the provisions of the paragraph 2.z of Article 68 of the Law 4001/2011 on the operation of Energy Markets of Power Generation and Natural Gas, for Research, Production and Hydrocarbon Transportation Networks and other regulations)

Halandri, Attica

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1 General description of the National Natural Gas System



The National Natural Gas System (NNGS) transports Natural Gas to consumers connected to the NNGS in the Greek mainland from the Greek-Bulgarian borders, the Greek-Turkish borders and the Liquefied Natural Gas (LNG) terminal, which is installed at Revythoussa island at Megara.

The Natural Gas is delivered from the Users to three (3) Entry Points to the National Natural Gas Transmission System (NNGTS) and it is off-taken by the Users via forty-one (41) Exit Points in the Greek mainland.

It consists of:

- The main pipeline, with 512 Km length and 36" & 30" diameter, and the branches of total length 947 Km (containing the underwater pipeline of Aliveri branch, with 14.20 Km length and 20" diameter), which connect various areas of the country to the main pipeline;
- The Border Metering Stations at Sidirokastron, Serres and at Kipi, Evros;
- The Liquefied Natural Gas (LNG) Station at Revythoussa;
- The Compression Station at Nea Mesimvria, Thessaloniki;
- The Natural Gas Metering and Regulating Stations;
- The Control and Dispatching Centers;
- The Operation and Maintenance Centers at the Sidirokastron Border Metering Station, Eastern Greece, Northern Greece, Central Greece, Southern Greece and Peloponnese;
- The Remote Control and Communications system; and
- Two underwater pipes, each one a back-up of the other, of 24" diameter each and of 620 m and 510 m length that connect the Revythoussa LNG Station to the mainland.

The Revythoussa LNG Station is the only installation in the National Natural Gas System which can

temporarily store Natural Gas quantities, up to 130,000 m³ LNG \approx 882,700 MWh.

It consists of:

- Two (2) Liquefied Natural Gas tanks of 65,000 m³ LNG each;
- LNG unloading installations of a total unloading capacity of 7,250 m³ LNG/h; and
- LNG gasification installations of total capacity of 1,000 m³ LNG/h in continuous working conditions and 1,250 m³/h LNG when the back-up gasifiers are in use.

2 Report for the operation of NNGS

2.1 Technical Characteristics of the System

Table 1 below shows the diameters and total lengths of the main pipeline and the branches of the National Natural Gas Transmission System (NNGTS).

N.G. Pipeline	DIAMETER (inch)	TOTAL LENGTH (Km)
Main Pipeline	36 & 30	512.42
Lavrion Branch	30	101.60
Keratsini Branch	30 & 24	24.42
HAR Branch	14	1.81
Oinofyta Branch	10	20.57
Volos Branch	10	40.87
EKO Branch	24 & 10	9.74
Thessaloniki East Branch	24	24.73
Platy Branch	10	10.97
Kavala-Kipi-Komotini Branch	36 & 24	300.25
Aloyminion Branch	20	28.06
Korinthos-Motor Oil Branch	30 & 20	42.00
Trikala-Karditsa Branch	10	71.93
Thisvi Branch	20	28.13
Heron Branch	14	0.65
Aliveri Branch	20	73.19
Megalopoli Branch	30 & 24	167.99
Mandra-ELPE Elefsis Branch	10	6,84
TOTAL		1,466.17
Revythoussa - Agia Triada Underwater Pipeline		
East Pipeline	24	0.62
West Pipeline	24	0.51

Table 1: Diameters and lengths of the Natural Gas pipeline

2.2 Variations in Technical Characteristics of the System

During the Year 2015 the technical characteristics of the NNGS varied as follows:

- The Technical Capacities of the NNGTS Entry Points varied as follows since 07.05.2015:
 - ❖ At the Entry Point 'AGIA TRIADA' from 150,014.000 MWh/Day to 150,263.500 MWh/Day;
 - ❖ At the Entry Point 'KIPI' from 48,590.000 MWh/Day to 48,719.000 MWh/Day; and
 - ❖ At the Entry Point 'SIDIROKASTRON' from 122,040.000 MWh/Day to 121,608.000 MWh/Day.

2. On 19.10.2015 the high pressure pipeline from Mandra, Attica to ELPE Elefsina, Attica, of a total length of 6.84 km, 70 barg design pressure and 10 inches diameter, was incorporated to the NNGTS.
3. On 19.10.2015 the NNGTS Exit Point 'ELPE-VEE' (at Mandra, Attica) with Technical Capacity 20,088.000 MWh/Day, was added to the NNGTS.

2.3 NNGTS Entry/Exit Points Capacity

Table 2 on the next page shows the Technical Capacities of the relative Entry/Exit Points of the NNGTS, and the Maximum Capacity of the relative Metering/Regulating Stations of DESFA.

TECNICAL CAPACITIES OF NATIONAL NATURAL GAS SYSTEM (NNGS) ENTRY/EXIT POINTS

A/A	ENTRY POINT	Technical Capacity [MWh/day] ⁽¹⁾	DESFA' s Metering/Regulating Station	Maximum Capacity of DESFA's Metering/Regulating Station [MWh/day]
1	SIDIROKASTRO	121.608.000 ⁽³⁾	M SIDIROKASTRO (U-2010)	178.952.928
2	AGIA TRIADA	150.263.500	M AGIA TRIADA (U-3020)	150.263.500
3	KIPI	48.719.000 ⁽³⁾	M KIPI (U-3900)	232.808.115

A/A	EXIT POINT	Technical Capacity [MWh/day] ⁽¹⁾	DESFA' s Metering/Regulating Station	Maximum Capacity of DESFA's Metering/Regulating Station [MWh/day]
1	ALOYMINION	26.784.000	M AdG (U-2820)	26.784.000
2	ALOYMINION II	20.777.632	M AdG II ⁽²⁾	20.777.632
3	ALOYMINION III	6.696.000	M AdG III (U-TM1/TM5)	6.696.000
4	MOTOR OIL	26.784.000	M MOTOR OIL (U-7130)	26.784.000
5	MOTOR OIL II	21.427.200	M MOTOR OIL II ⁽²⁾	21.427.200
6	AG. THEODOROI	3.000.000	M/R AG. THEODOROI	3.000.000
7	ATHENS	88.561.564	M/R NORTH ATHENS (U-2910)	29.521.057
			M/R EAST ATHENS (U-2940)	29.521.057
			M/R WEST ATHENS (U-2990)	29.519.450
8	ALEXANDROUPOLIS	7.499.520	M/R ALEXANDROUPOLIS (U-3630)	7.499.520
9	ALIBERI (PPC)	21.427.200	M ALIVERI	21.427.200
10	VIPE LARISSA	2.678.400	M/R VIPE LARISSA (U-2515)	2.678.400
11	VOLOS	13.832.061	M/R VOLOS (U-2680)	13.832.061
12	VFL	6.510.923	M VFL (U-2170)	6.510.923
13	DRAMA	7.499.520	M/R DRAMA (U-2410)	7.499.520
14	ELPE	4.828.352	M/R EKO (U-2250)	4.828.352
15	ELPE-HAR	8.035.200	M/R ELPE-HAR (U-2970)	8.035.200
16	ENERGIAKI THESS. (ELPE)	26.784.000	M ENERGIAKI THESSALONIKI ⁽²⁾	26.784.000
17	HERONAS	10.713.600	M HERONAS (U-6020)	10.713.600
18	HERON II	22.500.000	M HERON II (U-6030)	22.766.400
19	THESSALONIKI	38.851.263	M/R THESSALONIKI NORTH (U-2240)	19.425.632
			M/R THESSALONIKI EAST (U-2220)	19.425.632
20	THISVI	23.800.000	M THISVI ⁽²⁾	23.837.760
21	THRIASSIO	13.580.827	M/R THRIASSIO (U-2960)	13.580.827
22	KAVALA	2.678.400	M/R KAVALA (TM4-A)	2.678.400
23	KARDITSA	5.356.800	M/R KARDITSA (TM3-A)	5.356.800
24	KATERINI	7.499.520	M/R KATERINI (U-2340)	7.499.520
25	KERATSINI (PPC)	27.360.660	M KERATSINI (U-3090)	27.360.660
26	KILKIS	11.784.960	M/R KILKIS (U-2260)	11.784.960
27	KOKKINA	2.678.400	M/R KOKKINA (U-2670)	2.678.400
28	KOMOTINI (PPC)	28.926.720	M/R PPC KOMOTINI (U-3570)	28.926.720
29	KOMOTINI	5.356.800	M/R KOMOTINI (TM3-C)	5.356.800
30	LAMIA	7.499.520	M/R LAMIA (U-2620)	7.499.520
31	LARISSA	13.879.469	M/R NORTH LARISSA (U-2520)	6.939.734
			M/R SOUTH LARISSA (U-2530)	6.939.734
32	LAVRIO (PPC)	64.281.600	M LAVRIO (U-3430)	64.281.600
33	MEGALOPOLIS (PPC)	42.854.400	M MEGALOPOLIS (U-7320)	42.854.400
34	SPATA	3.080.160	M/R MARKOPOULO (TM2)	3.080.160
35	XANTHI	11.784.960	M/R XANTHI (U-3530)	11.784.960
36	OINOFYTA	7.099.903	M/R OINOFYTA (U-2880)	7.099.903
37	PLATY	5.755.346	M/R PLATY (U-2410)	5.755.346
38	SALFA ANO LIOSSIA	2.678.400	CNG I ⁽²⁾	2.678.400
39	SALFA ANTHOUSSA	2.678.400	CNG II ⁽²⁾	2.678.400
40	SERRES	11.784.960	M/R SERRES (U-2110)	11.784.960
41	TRIKALA	5.356.800	M/R TRIKALA (TM3-B)	5.356.800

Table 2

Comments on Table 2:

1. 'Technical Capacity' is the maximum invariable capacity that the Operator is able to offer to the Transmission Users, considering the integrity and the operational demands of the NNGTS.2. Given that the Operator has not completed the installation works of the metering facilities through which gas shall be supplied from the Transmission System to the relative Receiving Natural Gas Installation and until the completion of these metering facilities, Exit Point will be considered the location of the last insulating joint weld on the pipeline which supplies the Receiving Natural Gas Installation within the plot land already purchased by DESFA for the construction of the relevant metering facilities. 3. The amount of the Technical Capacities of the Entry Points 'SIDIROKASTRON" and 'KIPI' are not verified by the Upstream System Operators.

Finally, Table 3 on the next page depicts the Annual profile of Natural Gas Deliveries and Off-takes at the relative Entry and Exit Points of NNGTS for the Year 2015.

Annual profile of Natural Gas Deliveries/Off-takes and Daily peaks at the Entry/Exit Points of NNGTS					
Year 2015					
Entry Point Name	Technical Capacity [MWh/Day]	Annual Average of Natural Gas Delivery for the Point [MWh/Day]	Daily peak of the Point [MWh/Day]	Annual Average of Natural Gas Delivery for the Point as a percentage of Technical Capacity [%]	Daily peak of the Point as a percentage of Technical Capacity [%]
SIDIROKASTRO	121,608.000	57,843.705	123,214.977	47.5	101.3
	122,040.000				
AGIA TRIADA	150,263.500	17,877.121	103,421.653	11.9	68.9
	150,014.000				
KIPI	48,719.000	18,223.505	26,532.909	37.5	54.5
	48,590.000				
Exit Point Name	Technical Capacity [MWh/Day]	Annual Average of Natural Gas Off-takes for the Point [MWh/Day]	Daily peak of the Point [MWh/Day]	Annual Average of Natural Gas Off-takes for the Point as a percentage of Technical Capacity [%]	Daily peak of the Point as a percentage of Technical Capacity [%]
ALOYMINION	26,784.000	10,221.341	10,987.274	38.2	41.0
ALOYMINION II	20,777.632	3,451.113	14,275.423	16.6	68.7
ALOYMINION III	6,696.000	2,177.678	3,164.130	32.5	47.3
MOTOR OIL	26,784.000	5,637.928	9,190.796	21.0	34.3
MOTOR OIL II	21,427.200	3,655.742	14,065.150	17.1	65.6
AGIOI THEODOROI	3,000.000	81.802	283.641	2.7	9.5
ATHENS	88,561.564	8,630.985	30,876.159	9.7	34.9
ALEXANDROUPOLIS	7,499.520	85.131	226.503	1.1	3.0
ALIVERI (PPC)	21,427.200	10,153.526	18,882.762	47.4	88.1
VIPE LARISSA	2,678.400	146.054	243.341	5.5	9.1
VOLOS	13,832.061	1,667.816	5,216.727	12.1	37.7
VFL	6,510.923	4,186.697	5,092.237	64.3	78.2
DRAMA	7,499.520	751.497	1,095.560	10.0	14.6
ELPE	4,828.352	425.719	1,675.812	8.8	34.7
ELPE-HAR	8,035.200	127.412	4,395.386	1.6	54.7
ENERGIAKI THESS. (ELPE)	26,784.000	3,738.184	12,388.357	14.0	46.3
HERONAS	10,713.600	1.357	449.400	0.0	4.2
HERON II	22,500.000	2,518.658	15,436.436	11.2	68.6
THESSALONIKI	38,851.263	7,000.318	24,869.917	18.0	64.0
THISVI	23,800.000	3,001.447	16,556.700	12.6	69.6
THRIASIO	13,580.827	388.819	1,143.790	2.9	8.4
KAVALA	2,678.400	0.000	0.000	0.0	0.0
KARDITSA	5,356.800	228.564	927.514	4.3	17.3
KATERINI	7,499.520	298.971	349.627	4.0	4.7
KERATSINI (PPC)	27,360.660	0.162	58.015	0.0	0.2
KILKIS	11,784.960	873.135	1,414.506	7.4	12.0
KOKKINA	2,678.400	152.792	799.251	5.7	29.8
KOMOTINI (PPC)	28,926.720	2,779.464	22,298.247	9.6	77.1
KOMOTINI	5,356.800	125.591	202.460	2.3	3.8
LAMIA	7,499.520	111.005	232.463	1.5	3.1
LARISSA	13,879.469	1,621.442	5,788.633	11.7	41.7
LAVRION (PPC)	64,281.600	8,685.451	33,468.906	13.5	52.1
MEGALOPOLIS (PPC)	42,854.400	5,740.822	34,894.626	13.4	81.4
SPATA	3,080.160	237.286	521.065	7.7	16.9
XANTHI	11,784.960	141.726	281.891	1.2	2.4
OINOFYA	7,099.903	2,729.814	3,732.056	38.4	52.6
PLATY	5,755.346	545.474	3,458.578	9.5	60.1
SALFA ANO LIOSSIA	2,678.400	252.282	335.175	9.4	12.5
SALFA ANTHOUSA	2,678.400	216.757	277.751	8.1	10.4
SERRES	11,784.960	510.273	1,167.635	4.3	9.9
TRIKALA	5,356.800	197.116	768.21	3.7	14.3

Table 3

Comments on Table 3:

1. On 07.05.2015 the Technical Capacities of the NNGTS Entry Points were modified (see paragraph 2.2, page 5).
2. The Daily peak of the Entry Points occurred on:
 - the Day 05.11.2015 for the Entry Point 'SIDIROKASTRON';
 - the Day 18.12.2015 for the Entry Point 'KIPI'; and
 - the Day 08.01.2015 for the Entry Point 'AGIA TRIADA'.

2.4 Load Balancing

Balancing Gas is considered the Natural Gas quantity that the Operator injects to the National Transmission System, during a certain period, so as to create a balance between Natural Gas deliveries and off-takes (during the same period) so as in every case the safe, reliable and efficient operation of the NNGS will be considered secure. As part of his responsibilities and obligations, the Operator ensures the above balance, taking into account the losses and the stored Natural Gas quantities in the National Transmission System. During the Year 2015, the balancing needs of the National Transmission System were covered solely by using the Liquefied Natural Gas (LNG) facility at Revythoussa. The Operator bought the necessary Natural Gas quantities for the load balancing of the NNGTS by making use of relative agreements signed with the Public Gas Corporation (DEPA) S.A. for the supply of Liquefied Natural Gas Quantities.

Table 4 below presents the monthly Operator's predictions for the necessary Balancing Gas quantities, according to the Annual Planning of Load Balancing of the NNGTS for the Year 2015, which is approved by the Regulatory Authority for Energy (RAE) (RAE Decision 422/2014) and the actual Balancing Gas quantities needed for the Year 2015.

	Balancing Gas Prediction according to Annual Planning of Load Balancing	Balancing Gas (Actual)
Year 2015	(MWh)	(MWh)
January	260,588	88,157
February	198,558	124,483
March	110,195	123,982
April	53,606	51,037
May	60,997	37,943
June	33,279	22,813
July	45,518	207,503
August	53,128	60,826
September	79,084	0
October	61,460	94,938
November	132,488	13,451
December	221,153	214,260
Total	1,310,054	1,039,393

Table 4: Monthly Operator's predictions according to the Annual Planning of Load Balancing of the NNGTS and the actual Balancing Gas quantities for the Year 2015

The Balancing Gas that was injected in the NNGTS during the Year 2015 deviates from the initial Operator's predictions in the Annual Planning of Load Balancing of the NNGTS for the specific Year and this is mainly due to the lower Natural Gas Off-takes at the NNGTS Exit Points compared to DESFA's

estimations for the Year 2015.

Diagram 1 shows the Monthly Balancing Gas quantities, related to the Monthly Natural Gas Off-takes in all the NNGTS Exit Points.

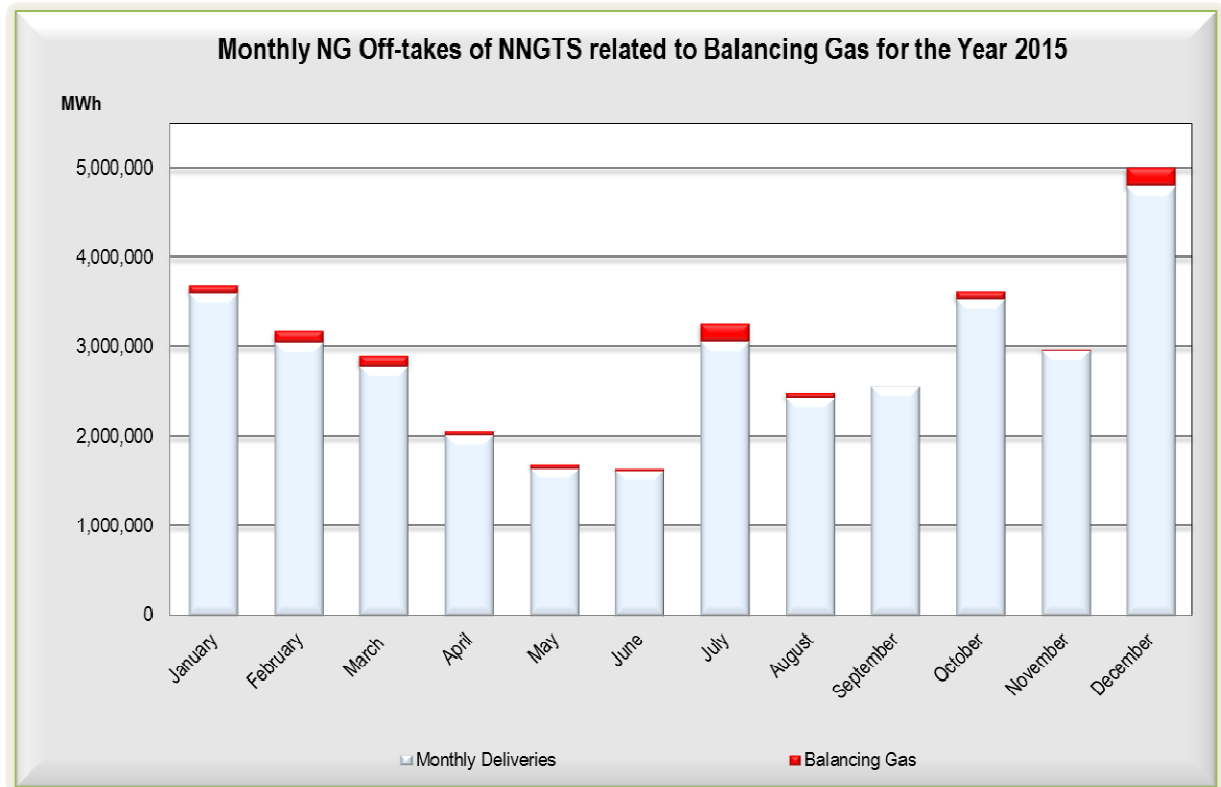


Diagram 1

In the Year 2015 the Natural Gas quantity that the Transmission Users delivered at the Entry Points is lower than the Natural Gas quantity received from the Exit Points of NNGTS, leading to a negative average Daily Gas Imbalance (DGI) of the Transmission Users.

Worth noting is the Day 21.12.2015, as it was the maximum quantity of the Natural Gas Deliveries for the Year 2015, which was in the level of 207,152 MWh with DGI -21,217.149 MWh (which is about 10 % of the Natural Gas Total Deliveries). It is also noted that the maximum quantity of Balancing Gas for the Year 2015 does not occur at the above mentioned Maximum Delivery Day, but it was observed on the Day 14.12.2014 and ranging in the level of 32,000.601 MWh.

Diagram 2 shows the total DGI of the Users for the Year 2015.

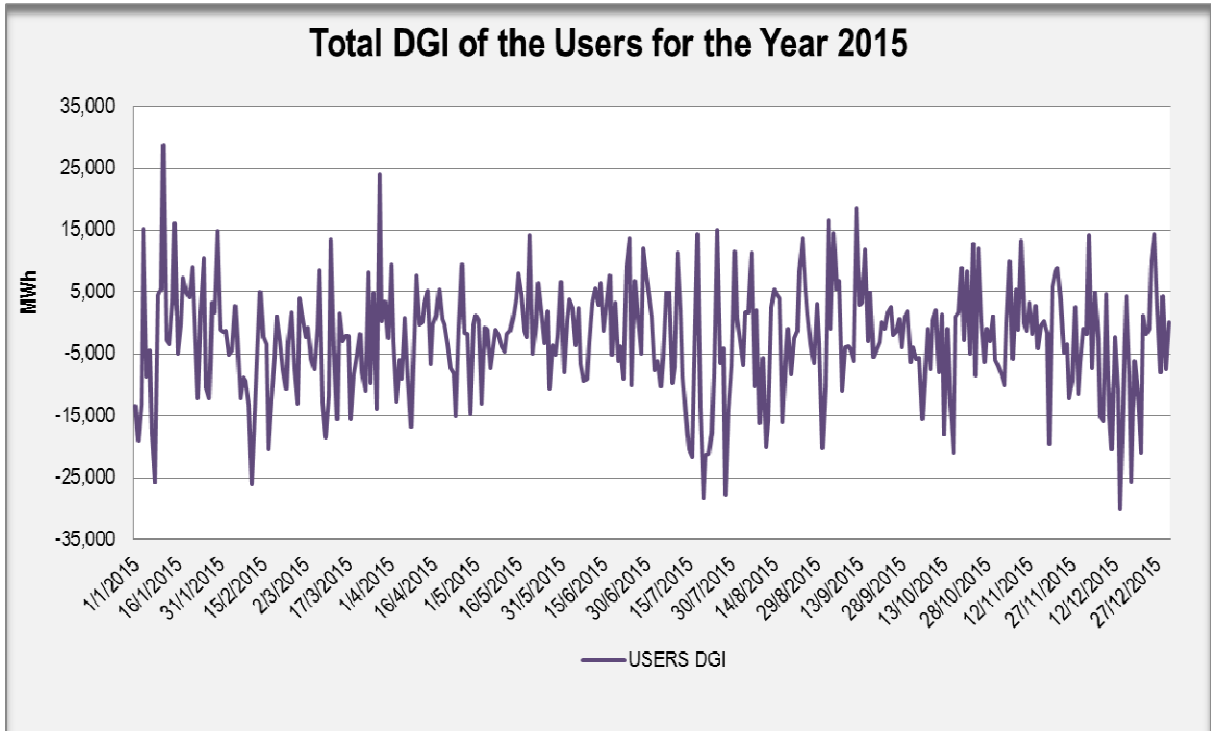


Diagram 2

The Operator, so as to offset the imbalance between the Transmission Users Off-takes and Deliveries in the NNGTS, made balancing actions aiming at minimizing the injection of Balancing Gas quantities by taking into account the pressure level of the network system, functional limitations as well as the estimated Natural Gas demand.

2.5 Maintenance Standard and Quality

Table 5 shows the Maintenance Program of NNGS for the Year 2015, as it was announced in the Operator's website on 2014, as well as its revision. Preventive maintenance and repair of all electrical and mechanical installations, the inspections, the management and control of the cathodic and lightning protection of the pipeline and installations were done according to the maintenance manuals, the legislation in use and the so far gained experience operating the system for years.

The calibration of the measuring systems was done according to Table 6 with only minor time deviations from the Annual Calibration Program that was uploaded in the Operator's website on December 2014.

The Operator is certified with ISO 9001:2008, OHSAS 18001:2004 & EN ISO 14001:2004 for all his activities, including the procedures of preventive and repairing maintenance and calibration of measuring systems. Furthermore, the Operator has a Pressure and Chemical Laboratory certified by the Hellenic Accreditation System (E.SY.D.) with ELOT EN ISO/IEC 17025:2005.

NATIONAL NATURAL GAS SYSTEM (NNGS) MAINTENANCE PROGRAM - YEAR 2015					
No.	NNGTS POINT	DESCRIPTION OF WORKS	PERIOD	MAINTENANCE DAYS	REMARKS
1	Entry Point 'SIDIROKASTRON'	Second Upgrade of Border Metering Station (BMS) Sidirokastron	September	10	Available Transmission Capacity at Entry Point 'SIDIROKASTRON': 2 Days: 0.000 MWh/Day 8 Days: 67,440.000 MWh/Day
2	Exit Point 'THESSALONIKI'	Installation, commissioning and put into operation of third metering line at Thessaloniki East (U-2220) and Thessaloniki North (U-2240) M/R stations	September - October	4	Available Transmission Capacity at Exit Point 'THESSALONIKI': 19,425.632 MWh/Day
3	LNG Terminal	Installation, commissioning and put into operation of a new Distributed Control System (DCS) at the Revythousa LNG Terminal	June-July	3	Available LNG Terminal's Regasification Capacity: 0.000 MWh/Day
					Available Transmission Capacity at Entry Point 'AGIA TRIADA': 0.000 MWh/Day
4	LNG Terminal	Maintenance of Revythousa LNG Terminal's unloading arms	September-October	60	Available LNG Injection Rate: 5,500.00 m ³ LNG/hour

Table 5: NNGS Maintenance Standard and Quality for the Year 2015

CALIBRATION – YEAR 2015

ENTRY POINT / UNIT NUMBER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SIDIROKASTRO / U – 2010	19-22, 27-30				18-19,21- 22,25-28				14-15,17-18, 21-22,28-29			
AGIA TRIADA / U – 3020	28-30			20-21						19-20		
KIPI / U – 3900					27-29					19-22		
EXIT POINT / UNIT NUMBER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LAVRIO (PPC) / U – 3430			9-13				6-10				9-13	
KERATSINI (PPC) / U – 3090 ⁽¹⁾					OXI						24-25	
THRIASIO / U – 2960					19-20						17-18	
ALIVERI / U – 6370	22					24			29			
ATHENS / U – 2990 (WEST)						8,12						10-11
ATHENS / U – 2910 (NORTH)				2-3					23-24			
ATHENS / U – 2940 (EAST)				6-7						12-13		
ASPROPYRGOS / U – 2970		3						3				
INOFYTA / U – 2880						10-11						14-15
HERON / U – 6020			23						25			
HERON II / U – 6030			23						28			
SPATA / TM2					21						19	
ALOYMINION / U – 2820						17-18						8-9
ALOYMINION III / TM1/TM5						16						7
MOTOR OIL / U – 7130	26	13					15					

AGIOI THEODOROI / U – 7045	21					14			15		
MEGALOPOLIS (PPC) / U – 7320											
VOLOS / U – 2680				21-22						18-19	
LARISA / U – 2520 (NORTH)				25-26						25-26	
LARISA / U – 2530 (SOUTH)				27-28						23-24	
VIPE LARISA / U – 2515				11-12						5	
KARDITSA / TM3-A				18						16	
LAMIA / U – 2620				6-7						9-11	
TRIKALA / TM3-B				18						16	
KOKKINA / U – 2670				13-14						12-13	
THESSALONIKI / U – 2240 (NORTH)				13-14						11-12	
THESSALONIKI / U – 2220(SOUTH)				11-12						9-10	
PLATY / U – 2410			22						6		
ELPE / U – 2250 (EKO)			20-21						8-9		
KILKIS / U – 2260				6-7					13		
KATERINI / U – 2340 ⁽⁵⁾		17-20				21-24				17-20	
KOMOTINI (PPC) / U – 3570						16					7
KOMOTINI / TM3-C			24						14-15		
KAVALA / TM4-A			29							6	
VFL / U – 2170						11-12					3-4
XANTHI / U – 3530		12-13							6-7		

ALEXANDROUPOLIS / U – 3630					7-8						11,13	
DRAMA / U – 2140			11,13						23-24			
SERRES / U – 2110			9-10						25,28			

Table 6: NNGTS Stations Calibrations – Year 2015

Comments on Table 6:

The programmed calibration for May 2015 for the Station U-3090 of the Exit Point 'KERATSINI (PPC)' did not take place, due to the fact that there were no Natural Gas Off-takes during the Year at that Point.

2.6 Congestion and Congestion Management

According to paragraph [3] of Article 20 of the Network Code for the Regulation of the National Natural Gas System, 'Congestion' occurs when the Transmission Capacity available at an Entry or Exit Point is not sufficient to fulfill a User's request for Transmission Capacity Booking at that Point to serve a new Natural Gas Consumer (Congestion). Furthermore, in accordance with paragraph [2] Article 20 of the Network Code for the Regulation of the NNGS, the above shall not apply in case of an Exit Point serving exclusively one (1) Natural Gas Consumer.

Table 7 below presents the Technical Capacities of the NNGTS Entry/Exit Points, the Maximum Booked Transmission Capacity (MBTC) of the Points in absolute terms and as a percentage of the Technical Capacity.

Annual profile of Technical Capacity, Booked Capacity and maximum Booked Transmission Capacity of Entry/Exit Points of NNGTS				
Year 2015				
ENTRY POINT	Technical Capacity [MWh/Day]	Available Capacity of Point [MWh/Day]	Maximum Booked Transmission Capacity of Point [MWh/Day]	Congestion Maximum Booked Transmission Capacity of Point as a percentage of Technical Capacity [%]
SIDIROKASTRO	121,608.000	142,128.000	139,101.000	98%
	122,040.000			
AG. TRIADA	150,263.500		115,878.749	77%
	150,014.000			
KIPI	48,719.000		26,501.000	54%
	48,590.000			
EXIT POINT	Technical Capacity [MWh/Day]		Maximum Booked Transmission Capacity of Point [MWh/Day]	Congestion Maximum Booked Transmission Capacity of Point as a percentage of Technical Capacity [%]
ALOYMINION	26,784.000		11,002.000	41%
ALOYMINION II	20,777.632		16,300.000	78%
ALOYMINION III	6,696.000		3,500.000	52%
MOTOR OIL	26,784.000		15,250.040	57%
MOTOR OIL II	21,427.200		18,608.297	87%
AG. THEODOROI	3,000.000		285.000	10%
ATHENS	88,561.564		31,287.825	35%
ALEXANDROUPOLIS	7,499.520		236.000	3%
ALIBERI (PPC)	21,427.200		17,800.615	83%
VIPE LARISSA	2,678.400		211.000	8%
VOLOS	13,832.061		4,751.000	34%
VFL	6,510.923		5,790.000	89%
DRAMA	7,499.520		1,131.000	15%
ELPE	4,828.352		1,701.000	35%
ELPE-HAR	8,035.200		41.000	1%
ENERGIAKI THESS. (ELPE)	26,784.000		15,819.150	59%
HERONAS	10,713.600		501.000	5%
HERON II	22,500.000		16,001.634	71%
THESSALONIKI	38,851.263		25,191.000	65%
THISVI	23,800.000		13,639.510	57%
THRIASSIO	13,580.827		1,070.000	8%
KAVALA	2,678.400		0.000	0%
KARDITSA	5,356.800		801.000	15%
KATERINI	7,499.520		401.000	5%
KERATSINI (PPC)	27,360.660		1.000	0%
KILKIS	11,784.960		1,771.000	15%
KOKKINA	2,678.400		723.000	27%
KOMOTINI (PPC)	28,926.720		15,001.000	52%
KOMOTINI	5,356.800		206.000	4%
LAMIA	7,499.520		261.000	3%
LARISSA	13,879.469		5,301.000	38%
LAVRIO (PPC)	64,281.600		32,001.000	50%
MEGALOPOLIS (PPC)	42,854.400		39,001.000	91%
SPATA	3,080.160		542.000	18%
XANTHI	11,784.960		6,560.614	56%
OINOFYTA	7,099.903		5,306.000	75%
PLATY	5,755.346		3,666.000	64%
SALFA ANO LIOSSIA	2,678.400		331.000	12%
SALFA ANTHOUSSA	2,678.400		281.000	10%
SERRES	11,784.960		7,049.160	60%
TRIKALA	5,356.800		781.000	15%

Table 7

Notes on Table 7:

1. The Available Capacity at an Entry Point is regarded the sum of the Technical Capacity of the specific Point and the Additional Transmission Delivery Capacity of this Point. It is noted that for the Year 2015 there was no Booked Additional Delivery Capacity allocated by DESFA at the Entry Point 'KIPI'.
2. At the Entry Point 'SIDIROKASTRON' the congestion was calculated as the Maximum Booked Transmission Capacity of the specific Point as the percentage of the Available Capacity of this Point, due to the fact that during the Day of the maximum Booked Transmission Capacity there was Additional Transmission Delivery Capacity booked by the User.
3. On 07.05.2015 the Technical Capacities of the NNGTS Entry Points were modified (see paragraph 2.2, page 5).
4. With regards to the Entry Point 'AGIA TRIADA', DESFA is going to increase the Technical Capacity of the Point to 230,400 MWh/Day on 2017, along with the upgrade of the Revythoussa LNG Station.
5. With regards to the Exit Point 'THESSALONIKI', DESFA is going to increase the Technical Capacity of the Point in 2016 by upgrading the Metering/Regulating Stations of Thessaloniki East and Thessaloniki North.
6. With regards to the Exit Point 'INOFYTA', congestion is not expected to occur, due to the implementation of the Metering/Regulating Station of Thiva, which will supply the off-takes network of Inofyta-Shimatari-Thiva, along with the existing Metering/Regulating Station of Inofyta.

2.7 Emergencies and Dealing with Emergencies

During the period 01-04.09.2015, the Operator declared Emergency Level (Alert Status 3) in the NNGS, under the terms of the Emergency Plan in accordance with Regulation No 994/2010 of the European Parliament and of the Council concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC (Law 691/B/26.03.2013) and in accordance with Chapter 10 of the NNGS Network Code.

Specifically, on the Day 01.09.2015 and at about 20:00, there was a Natural Gas Leak Detection on the 28th km on the high pressure pipeline section of Megara - Agioi Theodoroi. The Operator held an interruption of the Natural Gas Supply in the above mentioned pipeline section, so as to ensure the safe, reliable and efficient operation of the National Natural Gas System, a decompression of the pipeline section and a disclosure and inspection on the incident, where an impairment of the metal was discovered on the outer surface of the pipeline.

On the Day 04.09.2015 and at about 14:30, the Operator has decided to adverse the Emergency Level

(Alert Status 3), so as to restore the NNGS in Alert Status 0 (i.e. Smooth Operation of NNGS), since the restoration works of the above mentioned damage and the process of filling the high pressure pipeline section of Megara - Agioi Theodoroi were completed.

2.8 Operating characteristics of NNGS

According to the NNGS Measurements Regulation of DESFA, the Minimum Inlet Pressure at Entry Points 'SIDIROKASTRON' and 'KIPI' is 47.75 and 50.00 barg, respectively. Diagram 3 below shows the average Daily Inlet Pressure at Entry Points 'AGIA TRIADA', 'SIDIROKASTRON' and 'KIPI' for the Year 2015. Note that in the Diagram below, the Average Daily Inlet Pressure at NNGTS Entry Points is not shown for Days with zero Natural Gas Deliveries at the specific Points.

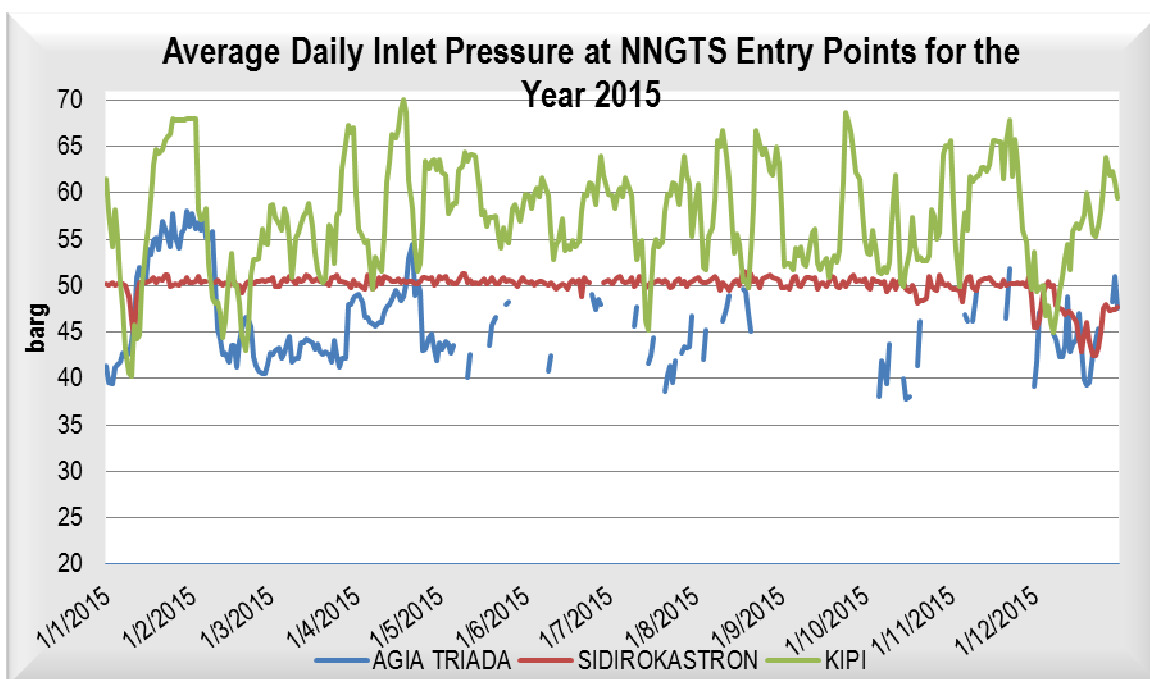


Diagram 3

Furthermore, Diagram 4 below shows the average Daily Network Pressure of the NNGTS for the Year 2015, as recorded by DESFA's SCADA system.

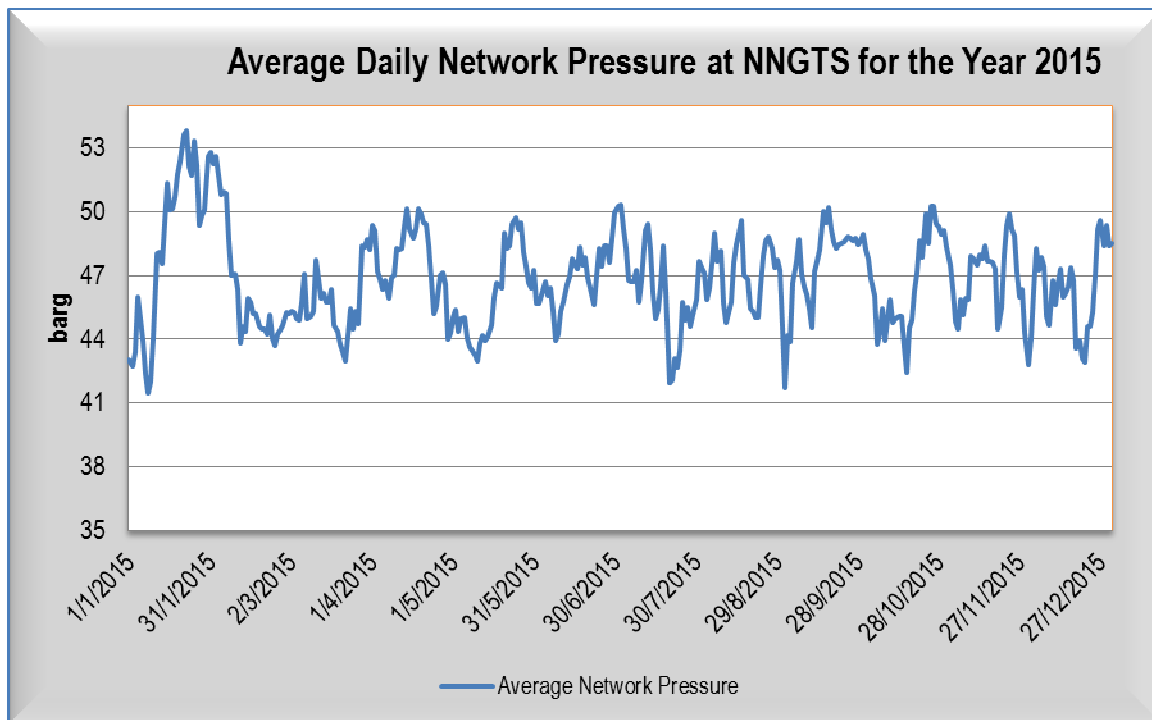


Diagram 4

2.9 Natural Gas Quantities historical data

2.9.1 Daily Natural Gas Off-takes/Deliveries

During the Year 2015 the total Natural Gas Off-Takes at NNGTS Exit Points was 34,126,533 MWh (compared to 31,775,842 MWh during the Year 2014). Diagram 5 below shows the Daily Natural Gas Off-Takes at the NNGTS Exit Points (as a sum) for the Year 2015. It is worth mentioning that the maximum Natural Gas consumption for the Year 2015 was recorded in the Day 21.12.2015, i.e. 207,152 MWh.

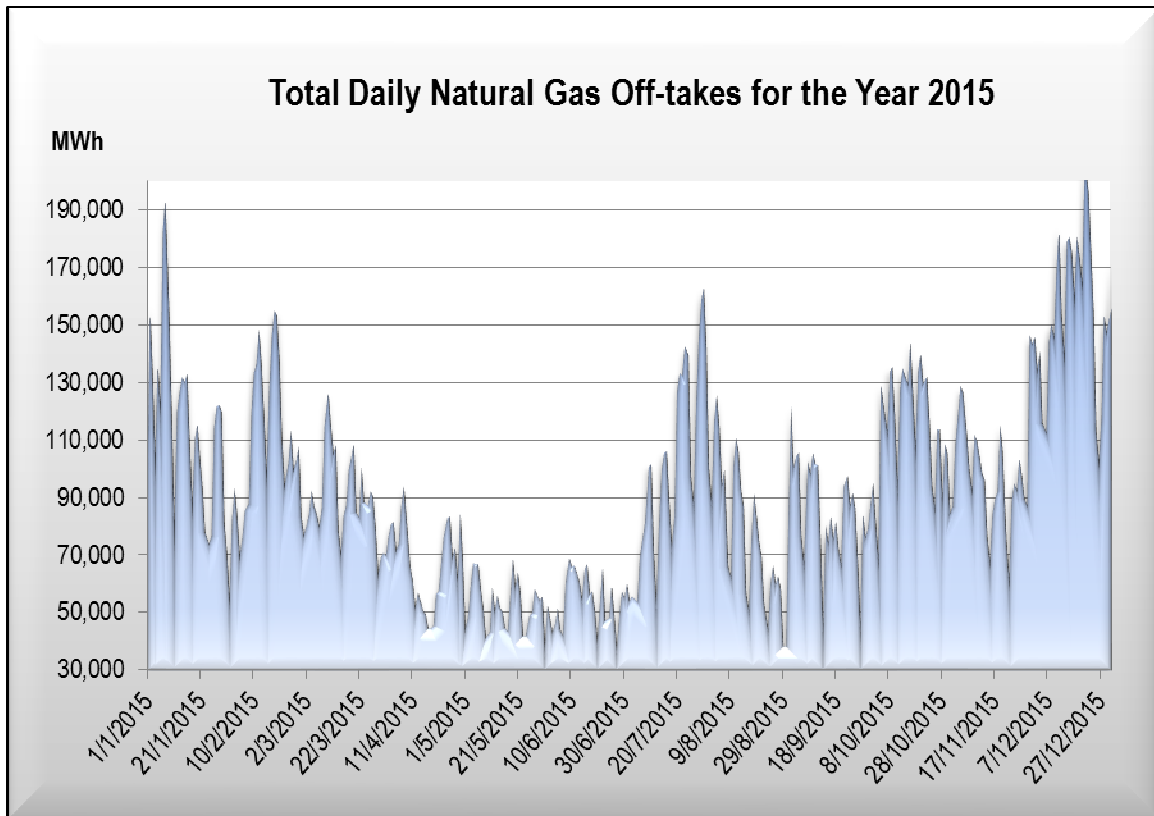


Diagram 5

During the Year 2015 the total Natural Gas Deliveries at NNGTS Entry Points was 34,289,681 MWh (compared to 31,810,096 MWh during the Year 2014). Diagram 6 below shows the shares of Daily Natural Gas quantities per NNGTS Entry Point for the Year 2015.

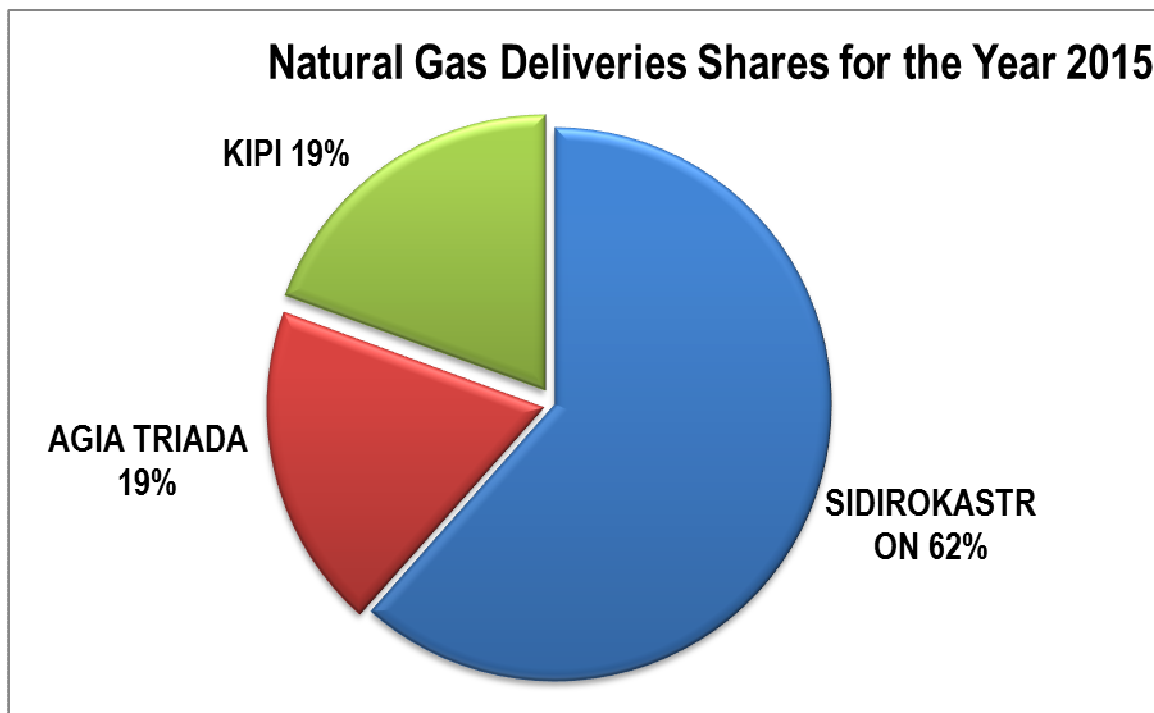


Diagram 6

2.9.2 Daily Natural Gas Quantity stored in the network of NNGTS

The Daily Natural Gas quantity stored in the NNGTS (i.e. Line Pack) varied from 21,080,333 Nm³ (Day 09.01.2015) to 27,949,598 Nm³ (Day 23.01.2015). Diagram 7 below shows the Daily variation of the Line Pack for the Year 2015.

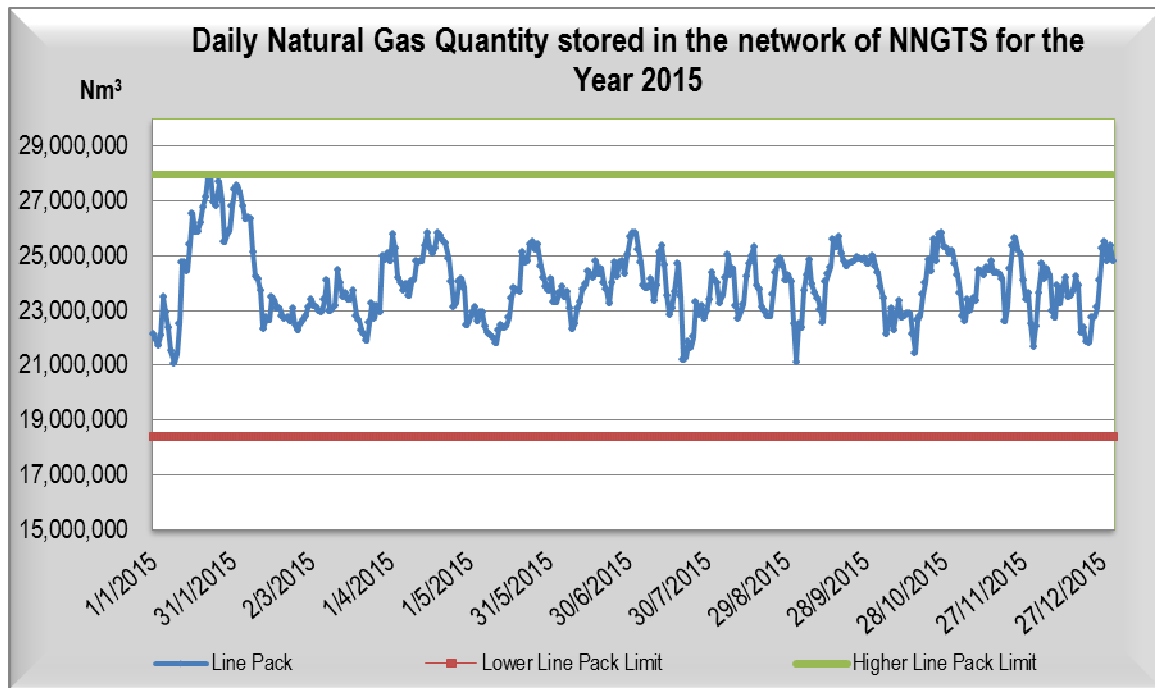


Diagram 7

2.9.3 Total Daily LNG Stock

In the Entry Point 'AGIA TRIADA' 6,525,149 MWh of Regasified Natural Gas were injected to the NNGTS (decrease of about 1.8% compared to the Year 2014), while the LNG unloads led to 6,784,847 MWh (increase of about 1.1% compared to the Year 2014).

Diagram 8 below shows the Daily configuration of the total stock of the LNG Facility Users, including the Balancing Gas that DESFA stored for Balancing purposes, during the Year 2015.

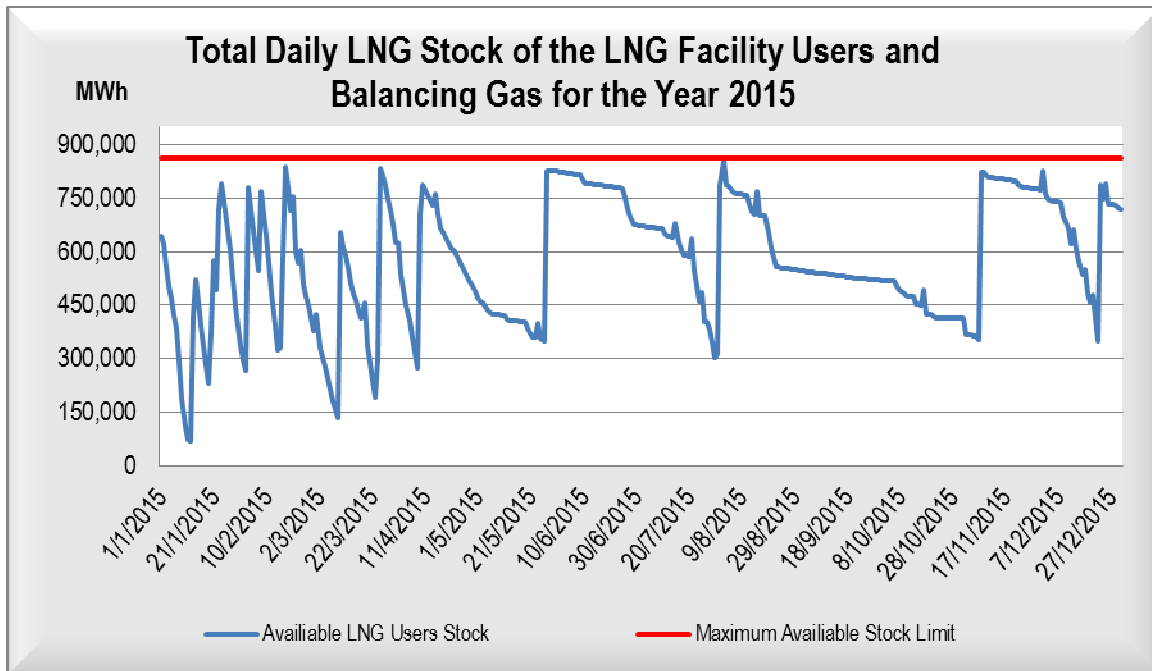


Diagram 8

2.9.4 Historical Operational data of the Compressor Station in Nea Messimvria

The Compressor Station in Nea Messimvria, Thessaloniki has operated during the Year 2015 for 5,208 hours, consuming 75,209.30 MWh of Natural Gas as fuel. That amount corresponds to 83% of the total Operational Gas that was used in the NNGTS during the Year 2015, which -amounts to 90,196.327 MWh.

Diagram 9 below (see next page) shows the Operational Gas used in the NNGTS and the Natural Gas consumed as fuel for the operation of the Compressor Station on a Monthly basis during the Year 2015.

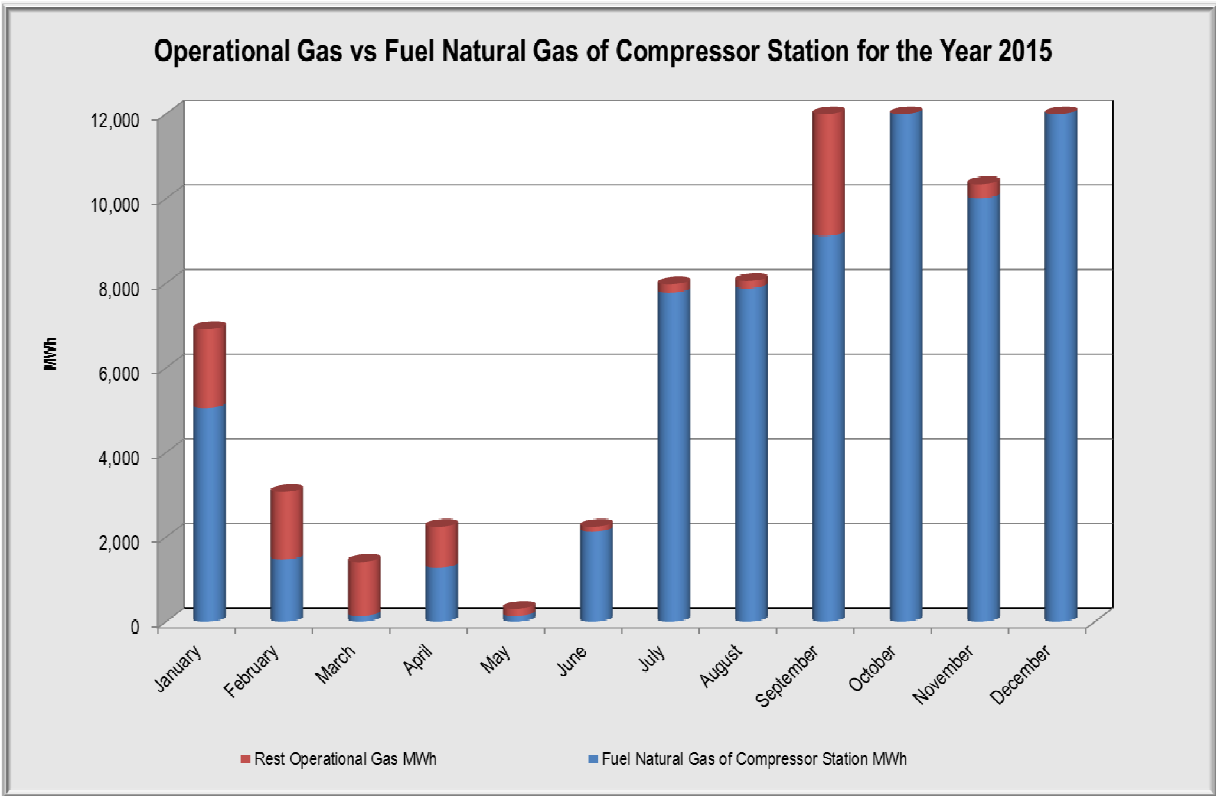


Diagram 9

Diagram 10 below shows the Natural Gas quantity that was handled by the Compressor Station on a Monthly basis during the Year 2015.

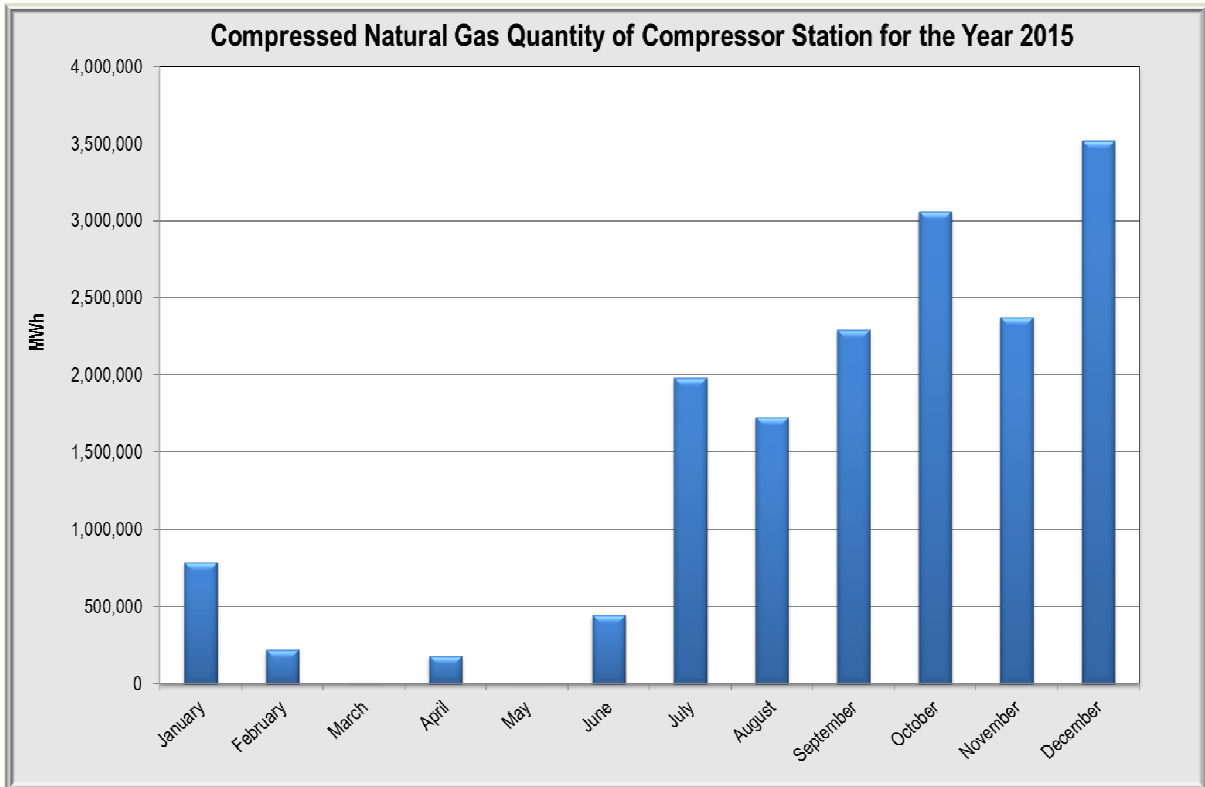


Diagram 10

2.9.5 Natural Gas out of specifications during the Year 2015

During the Year 2015 the following violations of Minimum Entry/Exit Pressure in the Entry/Exit Points of the NNGTS occurred:

1. The Delivery Pressure in the Entry Point 'SIDIROKASTRON' has been lower than the Minimum Entry Pressure, i.e. 47.75 barg for twenty six (26) Days..
2. The Delivery Pressure at the Entry Point 'KIPI' has been lower than the Minimum Delivery Pressure, i.e. 50.00 barg for thirty three (33) Days.

Finally, during the Year 2015 the following violations of Natural Gas quality specifications occurred, as specified in the Annex I of the NNGS Network Code:

1. The Natural Gas Water Dew Point (WDP) in the Entry Point 'SIDIROKASTRON' has been greater than the maximum limit, as specified in the NNGS Network Code (5°C at 80 barg) for one (1) Day.
2. The Natural Gas temperature in the Exit Points 'ALOYMINION III' and 'THESSALONIKI' has been lower than the minimum limit, as specified in the NNGS Network Code (-5°C) for twenty two (22) Days and one (1) Day, respectively.