Halandri, Attica

Operation Report of the NNGS for the Year 2023

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

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1. General description of the National Natural Gas System

The National Natural Gas System (NNGS) transports Natural Gas from the upstream Interconnected Natural Gas Transmission Systems of Bulgaria and Turkey, the Trans Adriatic Pipeline (TAP) and from the Liquefied Natural Gas (LNG) terminal, which is installed at Revithoussa island at Megara, to consumers connected to the NNGS in the Greek mainland.

The Natural Gas is delivered from the Users to four (4) Entry Points to the National Natural Gas Transmission System (NNGTS) and it is off-taken by the Users via forty-eight (48) Exit Points in the Greek mainland, including Reverse Flow Exit Point 'SIDIROKASTRO', through which the delivery of Natural Gas quantities to the Interconnected Natural Gas Transmission System of Bulgaria is achieved.

The NNGS consists of:

- The main pipeline, with 512 Km length and 36'' & 30'' diameter, and the branches of total length 953.20 Km (containing (a) the underwater pipeline of Aliveri branch, with 14.20 Km length and 20" diameter and (b) the two (2) underwater pipes, each one a back-up to the other, of 24'' diameter each and of 620m and 630m length, that connect the Revithoussa LNG Station to the mainland), which connect various areas of the country to the main pipeline;
- The Metering Stations of the Entry Points 'SIDIROKASTRO', 'KIPI', 'NEA MESIMVRIA' and 'AGIA TRIADA' of the NNGTS;
- The Liquefied Natural Gas (LNG) Terminal at Revithoussa connected to the Entry Point 'AGIA TRIADA';
- The Compression Station at Nea Mesimvria, Thessaloniki;
- The Natural Gas Metering and Regulating Stations;

- The Control and Dispatching Centers;
- The Operation and Maintenance Centers of Sidirokastro Border Station, Eastern Greece, Northern Greece, Central Greece, Southern Greece and Peloponnese; and
- The Remote Control and Communication System.

The Revithoussa LNG Station consists of:

- Three (3) Liquefied Natural Gas storage tanks of 63,379.931 m^3, 63,379.931 m^3 and of 95,055.815 m^3 LNG storage capacity;
- LNG unloading installations of maximum LNG unloading rate 7,250 m^3 LNG/h;
- LNG gasification installations of sustained maximum sendout rate 1,400 m^3 LNG/h; and
- LNG truck loading facilities with a peak loading capacity of 100 m^3 LNG/h.

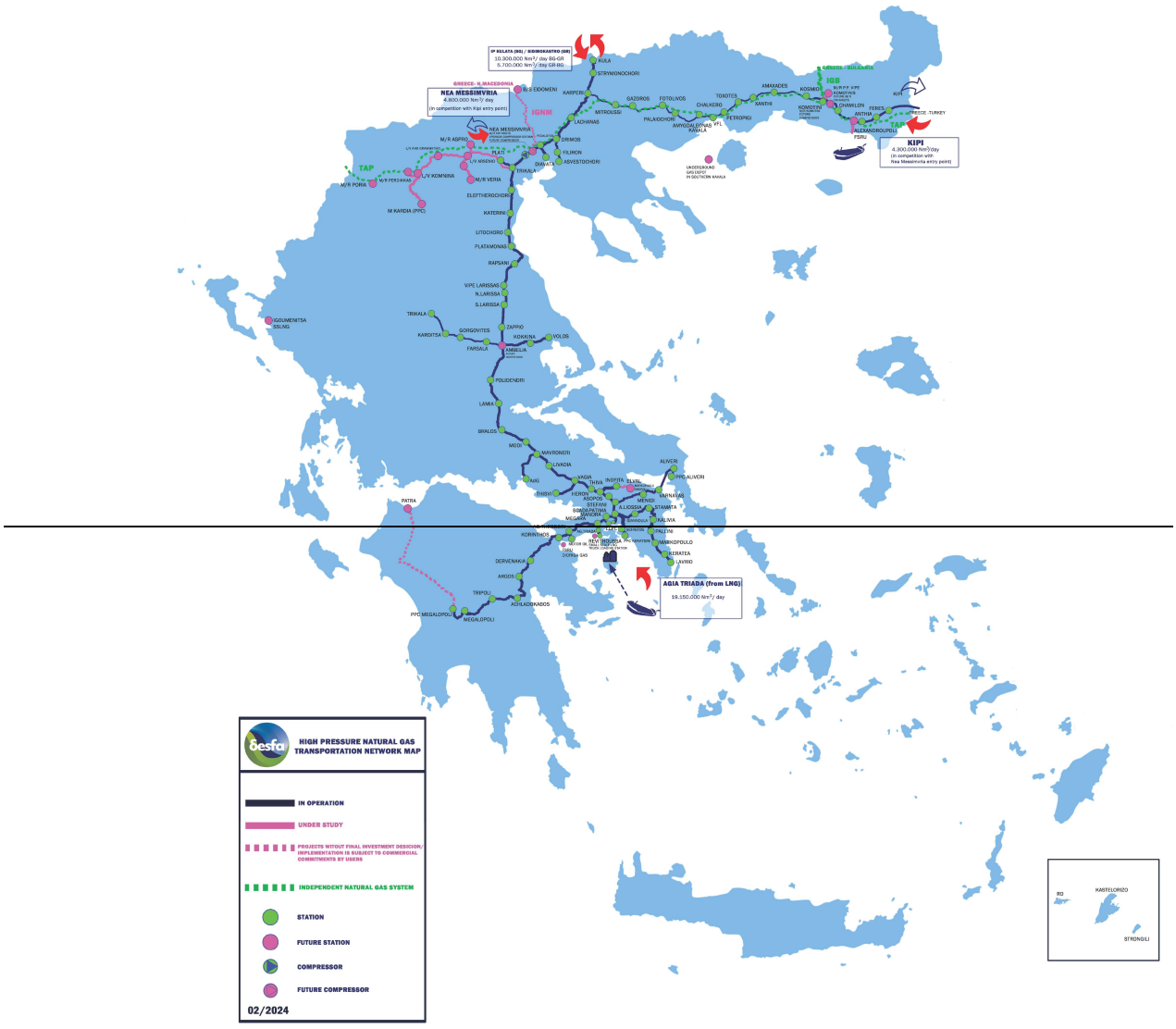

Diagram 1: NNGS Geographical Depiction

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 NNGTS.

Natural Gas Pipeline	Diameter (inch)	Total Length (Km)
Main Pipeline	36 & 30	**512**
Transmission Branches of NNGTS		
Lavrion Branch	30	100.05
Keratsini Branch	30 & 24	24.48
HAR Branch	14	2.02
Oinofyta Branch	10	20.62
Volos Branch	10	40.42
Thessaloniki North - EKO Branch	24 & 10	9.70
Thessaloniki East Branch	24	24.41
Platy Branch	10	10.98
Karperi - Komotini Branch	24	216.79
Komotini - Kipi Branch	36	86.71
Alouminion Branch	20	28.12
Megara - Korinthos Branch	30	52.88
MOTOR OIL Branch	20	1.46
Trikala Branch	10	71.94
Thisvi Branch	20	26.27
Heron Branch	14	0.75
Aliveri Branch	20	73.13
Elefsina (ELPE) Branch	10	6.41
Korinthos - Megalopoli Branch	24	155.43
Revithoussa - Agia Triada Underwater Pipeline		
East Pipeline	24	0.62
West Pipeline	24	0.63
TOTAL (Transmission Branches and Underwater pipelines)		**953.20**

Table 1: Diameters and lengths of the NNGTS Natural Gas pipelines

2.2. Variations in technical characteristics of the System

During the Year 2023, the technical characteristics of the NGTS were changed as follows:

1. on the 12th.06.2023 the Metering Station 'AdG IV' (U-2850) of DESFA was put into operation at the NNGTS Exit Point 'ALOYMINION IV' with Technical Capacity 39,675,420 kWh/Day;
2. on the 28th.09.2023, the Metering/Regulating Station 'KAVALA' (U-2180) of DESFA was put into operation at the new NNGTS Exit Point 'KAVALA (CITY)' with Technical Capacity 2,477,973 kWh/Day;
3. on the 4th.10.2023, the Metering/Regulating Station 'AdG III' (U-2840) of DESFA was put into operation at the NNGTS Exit Point 'ALOYMINION III' with Technical Capacity 6,542,964 kWh/Day;
4. on the 4th.11.2023, a 3rd compressor unit was commissioned at the Compression Station in Nea Mesimvria, Thessaloniki, of similar technical characteristics to the existing ones; and
5. on the 06th.11.2023, the LNG truck loading facility at the Revithoussa LNG Station was put into operation.

2.3. NNGTS Entry/Exit Points Capacity

Table 2 below shows the Technical Capacities of the Entry/Exit Points of the NNGTS, and the Maximum Capacity of the corresponding Metering/Regulating Stations of DESFA.

TECHNICAL CAPACITIES OF THE NNGTS ENTRY/EXIT POINTS				
No.	**ENTRY POINT**	**Technical Capacity [kWh/Day] (1)**	**DESFA' s Metering/Regulating Station**	**Maximum Capacity of DESFA's Metering/Regulating Station [kWh/Day]**
1	AGIA TRIADA	224,592,985	M AGIA TRIADA (U-3020)	233,714,880
2	KIPI (2)	48,592,292	M KIPI (U-3900)	232,202,632
3	NEA MESIMVRIA (2)	53,368,256	M/R NEA MESIMVRIA (U-6910)	117,543,960
4	SIDIROKASTRO (3)	120,362,516	M SIDIROKASTRO (U-2010)	180,272,030
No.	**EXIT POINT**	**Technical Capacity [kWh/Day] (1)**	**DESFA' s Metering/Regulating Station**	**Maximum Capacity of DESFA's Metering/Regulating Station [kWh/Day]**
1	ALOYMINION	26,714,340	M AdG (U-2820)	26,714,340
2	ALOYMINION II	20,723,593	M AdG B (U-2830)	20,723,593

3	ALOYMINION III	6,542,964	M/R AdG III (U-2840)	6,542,964
4	ALOYMINION IV	39,675,420	M AdG IV (U-2850)	39,675,420
5	MOTOR OIL	26,714,340	M MOTOR OIL (U-7130)	26,714,340
6	MOTOR OIL II	21,371,472	M MOTOR OIL B (U-7140)	21,371,472
7	AG. THEODOROI	2,992,197	M/R AG, THEODOROI (U-7045)	2,992,197
8	ATHENS	101,876,740	M/R NORTH ATHENS (U-2910)	29,444,279
			M/R EAST ATHENS (U-2940)	29,444,279
			M/R THRIASIO (U-2960)	13,545,506
			M/R WEST ATHENS (U-2990)	29,442,676
9	ALEXANDROUPOLIS	7,480,015	M/R ALEXANDROUPOLIS (U-3630)	7,480,015
10	ALIVERI (PPC)	21,371,472	M PPC ALIVERI (U-6370)	21,371,472
11	VIPE LARISSA	2,671,434	M/R VIPE LARISSA (U-2515)	2,671,434
12	VOLOS	13,796,086	M/R VOLOS (U-2680)	13,796,086
13	VFL	6,493,989	M VFL (U-2170)	6,493,989
14	DRAMA	7,480,015	M/R DRAMA (U-2140)	7,480,015
15	ELPE	4,815,794	M/R EKO (U-2250)	4,815,794
16	ELPE-VEE	12,756,552	M ELPE ELEFSINAS (U-7420)	12,756,552
17	ELPE-HAR	8,014,302	M/R ATHENS ELDA (U-2970)	8,014,302
18	ENERGIAKI THESS. (ELPE)	26,714,340	M ELPE DIAVATA (U-2270)	26,714,340
19	HERONAS	10,685,736	M HERON (U-6020)	10,685,736
20	HERON II	22,441,482	M HERON B (U-6030)	22,707,189
21	THESSALONIKI	77,501,024	M/R THESSALONIKI NORTH (U-2240)	38,750,512
			M/R THESSALONIKI EAST (U-2220)	38,750,512
22	THISVI	23,738,101	M IPP THISVI (U-6650)	23,738,101
23	KAVALA	2,671,434	M/R KAVALA (TM4-A)	2,671,434
24	KAVALA (CITY)	2,477,973	M/R KABAΛA (U-2180)	2,477,973
25	KARDITSA	5,342,868	M/R KARDITSA (U-6240)	5,342,868
26	KATERINI	7,480,015	M/R KATERINI (U-2340)	7,480,015
27	KERATSINI (PPC)	27,289,500	M PPC KERATSINI (U-3090)	27,289,500
28	KILKIS	11,754,309	M/R KILKIS (U-2060)	11,754,309

29	KOKKINA	2,671,434	M/R KOKKINA (U-2670)	2,671,434
30	KOMOTINI (PPC)	28,851,488	M/R PPC KOMOTINI (U-3570)	28,851,488
31	KOMOTINI	5,342,868	M/R KOMOTINI (U-3580)	5,342,868
32	KOSMIO	12,159,840	M/R KOSMIO (U-2550)	12,159,840
33	LAMIA	7,480,015	M/R LAMIA (U-2620)	7,480,015
34	LARISSA	13,843,371	M/R NORTH LARISSA (U-2520)	6,921,685
			M/R SOUTH LARISSA (U-2530)	6,921,685
35	LAVRIO (PPC)	64,114,418	M PPC LAVRIO (U-3430)	64,114,418
36	MEGALOPOLI	3,314,880	M/R MEGALOPOLI (TM-6)	3,314,880
37	MEGALOPOLIS (PPC)	42,742,945	M PPC MEGALOPOLIS (U-7320)	42,742,945
38	SPATA	3,072,149	M/R MARKOPOULO (U-3460)	3,072,149
39	XANTHI	11,754,309	M/R XANTHI (U-3530)	11,754,309
40	OINOFYTA	11,836,679	M/R THIVA (U-2740)	4,755,242
			M/R INOFYTA (U-2880)	7,081,437
41	PLATY	5,740,377	M/R PLATY (U-2410)	5,740,377
42	SALFA ANO LIOSSIA	2,671,434	M STATION ANO LIOSSIA (U-5010) (2)	
43	SALFA ANTHOUSSA	1,371,600	M STATION ANTHOUSA (U-5210)	1,371,600
44	SERRES	11,754,309	M/R SERRES (U-2110)	11,754,309
45	TRIKALA	5,342,868	M/R TRIKALA (U-6260)	5,342,868
46	TRIPOLI	5,565,600	M/R TRIPOLI (U-7270)	5,565,600
47	FARSALA	1,870,003	M/R FARSALA (U-6280)	1,870,003
No.	**REVERSE FLOW EXIT POINT**	**Technical Capacity [kWh/Day] (1)**	**DESFA' s Metering/Regulating Station**	**Maximum Capacity of DESFA's Metering/Regulating Station [kWh/Day]**
1	SIDIROKASTRO (3)	66,576,000	M SIDIROKASTRO (U-2010)	184,817,371

Table 2

Comments on Table 2:

1. 'Technical Capacity' is the maximum invariable capacity that DESFA is able to offer to the Transmission Users, considering the integrity and the operational demands of the NNGTS.

2. The sum of the Technical Capacities of the Entry Points "KIPI" and "NEA MESIMVRIA" cannot exceed 53,368,256 kWh/Day.

3. Until 01.10.2023 the Technical Capacity of the Entry Point "SIDIROKASTRO" was 117,493,289 kWh/Day and the Technical Capacity of the Reverse Flow Exit Point "SIDIROKASTRO" was 66,285,300 kWh/Day, due to different Gross Calorific Value used to calculate the energy.

4. Given that DESFA 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.

Finally, Table 3 depicts the Annual profile of physical Natural Gas Deliveries and Off-takes at the Entry and Exit Points of the NNGTS for the Year 2023.

Annual profile of physical Natural Gas Deliveries/Off-takes and Daily peaks at the NNGTS Entry/Exit Points					
Year 2023					
Entry Point	**Technical Capacity [kWh/Day]**	**Annual Average of Natural Gas Deliveries to the Point [kWh/Day]**	**Daily peak of the Point [kWh/Day]**	**Annual Average of Natural Gas Deliveries to the Point as a percentage of Technical Capacity [%]**	**Daily peak of the Point as a percentage of Technical Capacity [%]**
AGIA TRIADA	224,592,985	80,804,901	197,583,461	36.0	88.0
KIPI	48,592,292	6,309,105	7,655,622	13.0	15.8
NEA MESIMVRIA	53,368,256	20,374,901	59,524,909	38.2	111.5
SIDIROKASTRO (1)	120,362,516	48,383,722	121,085,699	40.2	100.6
Exit Point	**Technical Capacity [kWh/Day]**	**Annual Average of Natural Gas Off-takes from the Point [kWh/Day]**	**Daily peak of the Point [kWh/Day]**	**Annual Average of Natural Gas Off-takes from the Point as a percentage of Technical Capacity [%]**	**Daily peak of the Point as a percentage of Technical Capacity [%]**

AG. THEODOROI	2,992,197	124,557	249,967	4.2	8.4
ATHENS	101,876,740	9,702,147	41,056,257	9.5	40.3
ALEXANDROUPOLIS	7,480,015	97,078	207,760	1.3	2.8
ALIVERI (PPC)	21,371,472	7,483,255	17,373,567	35.0	81.3
ALOYMINION	26,714,340	9,954,112	13,851,071	37.3	51.8
ALOYMINION II	20,723,593	9,102,877	17,785,970	43.9	85.8
ALOYMINION III	6,542,964	2,101,730	2,786,063	32.1	42.6
ALOYMINION IV	39,675,420	7,981,231	32,569,803	20.1	82.1
VIPE LARISSA	2,671,434	165,150	262,996	6.2	9.8
VOLOS	13,796,086	1,629,375	5,842,442	11.8	42.3
VFL	6,493,989	2,813,066	5,083,847	43.3	78.3
DRAMA	7,480,015	1,467,330	1,703,295	19.6	22.8
ELPE	4,815,794	61,284	1,461,425	1.3	30.3
ELPE-VEE	12,756,552	2,761,176	9,056,105	21.6	71.0
ELPE-HAR	8,014,302	1,471,242	6,614,358	18.4	82.5
ENERGIAKI THESS. (ELPE)	26,714,340	8,297,584	18,414,946	31.1	68.9
HERON II	22,441,482	9,827,898	17,977,851	43.8	80.1
HERONAS	10,685,736	361,233	2,551,013	3.4	23.9
THESSALONIKI	77,501,024	7,626,145	30,680,542	9.8	39.6
THISVI	23,738,101	4,776,441	15,003,804	20.1	63.2
KAVALA	2,671,434	3,925	28,830	0.1	1.1
KAVALA (CITY)	2,477,973	456	50,614	0.0	2.0
KARDITSA	5,342,868	442,437	1,768,211	8.3	33.1
KATERINI	7,480,015	484,604	557,920	6.5	7.5
KERATSINI (PPC)	27,289,500	0	0	0.0	0.0
KILKIS	11,754,309	1,060,322	1,975,918	9.0	16.8
KOMOTINI (PPC)	28,851,488	2,480,620	17,714,536	8.6	61.4
KOMOTINI	5,342,868	177,344	246,838	3.3	4.6
KOKKINA	2,671,434	208,164	361,708	7.8	13.5
KOSMIO	12,159,840	4,075	271,118	0.0	2.2
LAMIA	7,480,015	174,545	330,190	2.3	4.4
LARISSA	13,843,371	2,016,410	6,952,952	14.6	50.2
LAVRIO (PPC)	64,114,418	11,510,765	34,368,871	18.0	53.6
MEGALOPOLIS (PPC)	42,742,945	16,650,250	34,900,557	39.0	81.7
MEGALOPOLI	3,314,880	15,602	115,175	0.5	3.5
MOTOR OIL	26,714,340	4,664,355	13,376,595	17.5	50.1

MOTOR OIL II	21,371,472	6,209,007	16,820,693	29.1	78.7
XANTHI	11,754,309	131,779	256,090	1.1	2.2
OINOFYTA	11,836,679	3,518,353	4,800,883	29.7	40.6
PLATY	5,740,377	3,148	36,715	0.1	0.6
SALFA ANTHOUSSA	1,371,600	136,394	233,072	9.9	17.0
SALFA ANO LIOSSIA	2,671,434	186,802	241,652	7.0	9.0
SERRES	11,754,309	762,154	1,663,131	6.5	14.1
SPATA	3,072,149	297,829	552,793	9.7	18.0
TRIKALA	5,342,868	480,325	1,888,116	9.0	35.3
TRIPOLI	5,565,600	1,575	28,593	0.0	0.5
FARSALA	1,870,003	66,629	273,752	3.6	14.6
Reverse Flow Exit Point	**Technical Capacity [kWh/Day]**	**Annual Average of Natural Gas Off-takes from the Point [kWh/Day]**	**Daily peak of the Point [kWh/Day]**	**Annual Average of Natural Gas Off-takes from the Point as a percentage of Technical Capacity [%]**	**Daily peak of the Point as a percentage of Technical Capacity [%]**
SIDIROKASTRO (1)	66,576,000	13,213,100	65,047,332	19.8	97.7

Table 3

Comments on Table 3:

1. Until 01.10.2023 the Technical Capacity of the Entry Point "SIDIROKASTRO" was 117,493,289 kWh/Day and the Technical Capacity of the Reverse Flow Exit Point "SIDIROKASTRO" was 66,285,300 kWh/Day, due to different Gross Calorific Value used to calculate the energy.

2.4. Load Balancing

Balancing Gas is the Natural Gas required for the load balancing of the NNGTS. The Balancing Gas Quantity that the Operator injects/takes to/from the NNGTS, during a certain period, is set out to create a balance between Natural Gas Deliveries and Off-takes (during the same period) so as in every case the reliable, safe and efficient operation of the NNGS is considered secure. As part of his responsibilities and obligations, DESFA ensures the above balance by undertaking Balancing Actions, taking into account the losses and the stored Natural Gas quantities in the NNGTS.

In accordance with the provisions of Chapter 8 of the NNGS Network Code, during the Year 2023 the

Operator could undertake Balancing Actions through (a) purchase and sale of Balancing Gas in the form of Short-Term Standardized Products on the Trading Platform either through continuous negotiations or through auctions and/or (b) use of Balancing Services through Balancing Services Contracts.

Diagram 2 below shows the Balancing Actions performed by the Operator during the Year 2023.

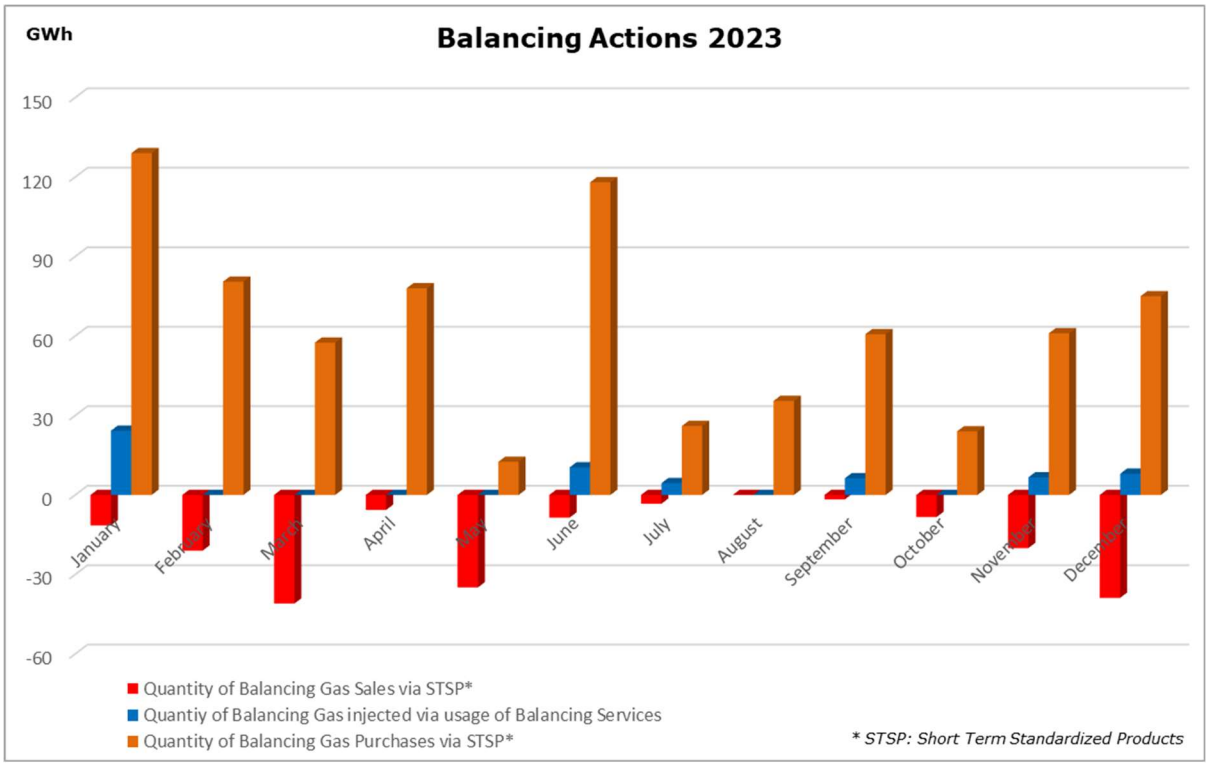

Diagram 2

Table 4 on the next page shows data on the cost/revenue, frequency and quantity of the Balancing Actions undertaken by the Operator during the Year 2023, in accordance with the provisions of paragraph 7 of Article 44[A] of the NNGS Network Code.

2023	Balancing Gas Purchases via usage of LNG Supply Agreements for performing Balancing Services			Balancing Gas Purchases via Short Term Standardized Products			Balancing Gas Sales via Short Term Standardized Products		
	Quantiy of Balancing Gas injected {kWh}	Balancing LNG Supply Cost	Frequency of Balancing Gas injected (number of Days)	Quantity of Balancing Gas Purchases {kWh}	Balancing Gas Purchases Cost	Frequency of Balancing Gas Purchases (number of Days)	Quantity of Balancing Gas Sales {kWh}	Balancing Gas Sales Revenue	Frequency of Balancing Gas Sales (number of Days)
JANUARY	24,240,115	0	5	129,004,000	10,371,251.33 €	16	11,500,000	658,492.00 €	13
FEBRUARY	0	596,049.90 €	0	80,500,000	5,010,058.75 €	13	21,000,000	1,111,250.00 €	8
MARCH	0	0	0	57,500,000	2,767,434.00 €	11	41,000,000	1,799,222.30 €	11
APRIL	0	0	0	78,000,000	3,361,865.00 €	18	5,650,000	238,675.00 €	3
MAY	0	0	0	12,500,000	430,628.10 €	6	34,910,000	991,190.00 €	13
JUNE	10,404,013	273,880.00 €	2	118,000,000	3,486,262.75 €	20	8,550,000	265,050.00 €	1
JULY	4,444,426	385,000.00 €	2	26,000,000	860,643.60 €	9	3,320,000	97,500.00 €	4
AUGUST	0	0	0	35,496,000	1,020,963.30 €	9	0	0	0
SEPTEMBER	6,306,828	0	2	59,000,000	2,074,943.25 €	17	1,659,000	52,476.40 €	1
OCTOBER	0	0	0	24,000,000	884,928.00 €	5	8,320,000	285,570.00 €	4
NOVEMBER	6,653,902	707,436.75 €	1	61,000,000	2,621,190.00 €	11	20,059,000	674,235.00 €	4
DECEMBER	8,001,745	591,000.00€	1	75,000,000	2,909,249.90 €	12	38,832,000	1,343,924.60 €	10
YEARLY SUM	**60,051,029**	**2,553,366.65 €**	**13**	**756,000,000**	**35,799,417.98 €**	**147**	**194,800,000**	**7,517,586.20 €**	**72**

Table 4

2.5 Maintenance Standard and Quality

Table 5 shows (a) the Maintenance Program of NNGS for the Year 2023, as it was announced in DESFA website, according to the provisions of Article 98 of the NNGS Network Code, and its revisions and (b) the Non-scheduled Maintenance works of NNGS executed in the Year 2023 in order to assure the secure, reliable and efficient operation of the NNGS, according to the provisions of Article 99 of the Network Code. Preventive and repairing maintenance of all electromechanical installations, supervision, management and control of the pipeline row zone as well as the supervision and control of cathodic and lighting protection of the pipeline and the installations were carried out in accordance with the provisions of the maintenance manuals, the current legislation and the experience granted so far by the multiannual operation of the system.

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 on DESFA website, according to the provisions of Article 27 of the NNGS Metering Regulation.

DESFA 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, DESFA has a Pressure and Chemical Laboratory and a Chemical Analysis Testing Laboratory certified by the Hellenic Accreditation System (E.SY.D.) with ELOT EN ISO/IEC 17025:2017.

NATIONAL NATURAL GAS TRANSMISSION SYSTEM MAINTENANCE PROGRAM - YEAR 2023 / NON-SCHEDULED MAINTENANCE					
No.	**DESCRIPTION OF WORKS**	**IMPLICATIONS**	**PERIOD OF WORKS**	**MAINTENANCE DAYS**	**REMARKS**
1	i) Maintenance at Nea Mesimvria Compression Station ii) Installation of a third compressor unit at Nea Mesimvria Compression Station	Transmission Capacity for Delivery at Entry Point 'SIDIROKASTRO': 20,000,000 kWh/Day Transmission Capacity for Delivery at Entry Point 'KIPI': 0 kWh/Day	16.05.2023 07:00 – 20.05.2023 07:00	4	Works were included in the NNGS Maintenance Program for the Year 2023
2	Maintenance at Nea Mesimvria Compression Station	Transmission Capacity for Delivery at Entry Point 'SIDIROKASTRO': 20,000,000 kWh/Day Transmission Capacity for Delivery at Entry Point 'KIPI': 0 kWh/Day	06.06.2023 07:00 – 10.06.2023 07:00	4	Works were included in the NNGS Maintenance Program for the Year 2023
3	Cleaning and in line inspection works in the "Nea Mesimvria - Mavroneri" pipeline section of the NNGTS	Transmission Capacity for Delivery at Entry Point 'SIDIROKASTRO': 0 kWh/Day Gasification Capacity of LNG Facility and Transmission Capacity for Delivery at Entry Point 'AGIA TRIADA': 75,000,000 kWh/Day	26.06.2023 07:00 – 06.07.2023 07:00	10	Works were included in the NNGS Maintenance Program for the Year 2023 They lasted one Day less
4	i) Maintenance at Border Metering Station (BMS) Sidirokastro ii) Maintenance at line-valve Promachonas (Koula Station) iii) Modification of the Emergency Shutdown (ESD) system of Nea Mesimvria Compression Station to include the third compressor unit	Transmission Capacity for Delivery at Entry Point 'SIDIROKASTRO': 0 kWh/Day Transmission Capacity for Reception of Reverse Flow at Exit Point 'SIDIROKASTRO': 0 kWh/Day	19.09.2023 07:00 – 20.09.2023 07:00	1	Works were included in the NNGS Maintenance Program for the Year 2023
5	i) Maintenance at Nea Mesimvria Compression Station ii) Modification of the Emergency Shutdown (ESD) system of Nea Mesimvria Compression Station to include the third compressor unit	Transmission Capacity for Delivery at Entry Point 'SIDIROKASTRO': 0 kWh/Day Transmission Capacity for Reception of Reverse Flow at Exit Point 'SIDIROKASTRO': 38,000,000 kWh/Day	20.09.2023 07:00 – 23.09.2023 07:00	3	Works were included in the NNGS Maintenance Program for the Year 2023 They lasted one Day more

Table 5

CALIBRATIONS – YEAR 2023

ENTRY POINT STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SIDIROKASTRO / U – 2010				18 – 21 24-26 & 28						16,18,19, 23,24		
AGIA TRIADA / U – 3020				19-20						18-19		
KIPI / U – 3900				25-28						17-19		
NEA MESIMVRIA / U-6910			30-31							5-6		
EXIT POINT STATION	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
PPC LAVRIO / U – 3430			20-24						18-22			
THRIASSIO / U – 2960				7						16		
PPC ALIVERI PPC / U – 6370	12						11					
ATHENS WEST / U – 2990					10-11						15	
ATHENS NORTH / U – 2910				24-25						10		
ATHENS EAST / U – 2940			13-14						6			
STATION ANTHOUSA / U-5210			15						7			
ATHENS HAR / U-2970			9					10				
INOFYTA / U – 2880					8-9						13-14	
HERONAS / U – 6020		17-20						8-9				
HERON B / U – 6030		17-20						8-9				
MARKOPOULO / U-3460					12						17	
PP THISVI / U-6650	11						4					

EXIT POINT STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
AdG / U – 2820						12						12
AdG B / U-2830						14						11
AdG III / TM1/TM5						13						13
ADG IV / U-2840												13
THIVA / U-2740	10						6					
ELPE ELEFSINAS / U-7420				4						17		
MOTOR OIL / U – 7130			6-7						7-8			
MOTOR OIL B / U – 7140			8-9						5			
TRIPOLI / U-7270			21							4		
PPC MEGALOPOLI / U – 7320					16-17						8-9	
MEGALOPOLI / U–TM06					23						15-16	
AG. THEODOROI / U – 7045				3-4						3		
VOLOS / U – 2680					15-16						15-16	
LARISSA NORTH / U – 2520					17-18							6-7
LARISSA SOUTH / U – 2530					22-23						20-21	
VIPE LARISSA / U – 2515					3-4						6-7	
LAMIA / U–2620					10-11						13-14	
KARDITSA / U–6240					8-9						8-9	
TRIKALA / U-6260						7-8						4-5

EXIT POINT STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FARSALA / U-6280						6					29-30	
KOKKINA / U-2670					24-25						27-28	
THESSALONIKI NORTH / U–2240				10-12						18-19		
THESSALONIKI EAST / U-2220				5-6						16-17		
ELPE DIAVATA / U-2270				26-27						3-4		
PLATY / U–2410					11					2		
EKO / U–2250				24 & 27						5		
KILKIS / U–2060					3 & 10					23		
KATERINI / U–2340					10					30-31		
PPC KOMOTINI / U–3570					16-19						14-17	
KOSMIO / U-2550			16						14			
KOMOTINI / U-3580				21						26-27		
KAVALA / TM4-A				20						24		
VFL / U–2170						8-9						4-5
XANTHI / U–3530			15						18-19			
ALEXANDROUPOLIS / U–3630					2-3						20	
DRAMA / U–2140			22-23						13-14			
SERRES / U–2110			20-21						11-12			

Table 6

2.6 Congestion and Congestion Management

Congestion occurs when the available Transmission Capacity at an Entry Point or Exit Point or Reverse Flow Entry Point or Reverse Flow Exit Point is not sufficient to fulfill a User's request for booking Transmission Capacity at that Point in order to serve a new Natural Gas Consumer.

Table 7 below presents the Technical Capacities of the NNGTS Entry/Exit/ Reverse Flow Exit Points and the Maximum Booked Transmission Capacity (MBTC) at the Points for Year 2023, in absolute terms and as a percentage of the Technical Capacity.

ENTRY POINT	Technical Capacity [kWh/Day]	Maximum Booked Transmission Capacity at Point [kWh/Day]	Maximum Booked Transmission Capacity at Point as a percentage of Technical Capacity [%]
AGIA TRIADA	224,592,985	224,592,987	100%
KIPI	48,592,292	13,000,001	27%
NEA MESIMVRIA(2)	53,368,256	56,036,669	105%
SIDIROKASTRO(1)	120,362,516	163,367,953	136%
EXIT POINT	Technical Capacity [kWh/Day]	Maximum Booked Transmission Capacity at Point [kWh/Day]	Maximum Booked Transmission Capacity at Point as a percentage of Technical Capacity [%]
AG. THEODOROI	2,992,197	215,004	7%
ATHENS	101,876,740	39,520,449	39%
ALEXANDROUPOLIS	7,480,015	145,777	2%
ALIVERI (PPC)	21,371,472	15,022,000	70%
ALOYMINION	26,714,340	13,000,000	49%
ALOYMINION II	20,723,593	17,000,000	82%
ALOYMINION III	6,542,964	4,440,001	68%
ALOYMINION IV	39,675,420	32,500,001	82%
VIPE LARISSA	2,671,434	209,700	8%
VOLOS	13,796,086	5,573,112	40%
VFL	6,493,989	5,450,000	84%
DRAMA	7,480,015	1,594,143	21%
ELPE	4,815,794	1,400,000	29%

ELPE-VEE	12,756,552	7,400,000	58%
ELPE-HAR	8,014,302	4,600,000	57%
ENERGIAKI THESS. (ELPE)	26,714,340	14,000,000	52%
HERON II	22,441,482	17,000,000	76%
HERONAS	10,685,736	2,900,000	27%
THESSALONIKI	77,501,024	30,707,412	40%
THISVI	23,738,101	14,000,000	59%
KAVALA	2,671,434	37,005	1%
KAVALA (CITY)	2,477,973	852	0%
KARDITSA	5,342,868	1,631,520	31%
KATERINI	7,480,015	547,907	7%
KERATSINI (PPC)	27,289,500	0	0%
KILKIS	11,754,309	1,889,428	16%
KOMOTINI (PPC)	28,851,488	15,778,000	55%
KOMOTINI	5,342,868	234,153	4%
KOKKINA	2,671,434	313,908	12%
KOSMIO	12,159,840	13,238	0%
LAMIA	7,480,015	332,149	4%
LARISSA	13,843,371	6,949,204	50%
LAVRIO (PPC)	64,114,418	31,420,000	49%
MEGALOPOLIS (PPC)	42,742,945	33,450,000	78%
MEGALOPOLI	3,314,880	94,154	3%
MOTOR OIL	26,714,340	12,050,000	45%
MOTOR OIL II	21,371,472	17,000,000	80%
XANTHI	11,754,309	271,844	2%
OINOFYTA	11,836,679	4,768,095	40%
PLATY	5,740,377	25,053	0%
SALFA ANTHOUSSA	1,371,600	175,000	13%
SALFA ANO LIOSSIA	2,671,434	265,000	10%
SERRES	11,754,309	1,584,341	13%
SPATA	3,072,149	546,964	18%
TRIKALA	5,342,868	1,730,282	32%
TRIPOLI	5,565,600	26,112	0%
FARSALA	1,870,003	228,285	12%

REVERSE FLOW EXIT POINT	Technical Capacity [kWh/Day]	Maximum Booked Transmission Capacity at Point [kWh/Day]	Maximum Booked Transmission Capacity at Point as a percentage of Technical Capacity [%]
SIDIROKASTRO(2)	66,576,000	69,599,565	105%

Table 7

Comments on Table 7:

1. The percentage of the Entry Point 'SIDIROKASTRO' was calculated based on the sum of the Technical Capacity of the specific Point on the Day of its Maximum Booked Transmission Capacity and the maximum of the sum of the Additional and the Interruptible Transmission Delivery Capacity, booked by the Transmission Users in the Year 2023.

2. The percentages of the Entry Point 'NEA MESIMVRIA' and the Reverse Flow Exit Point 'SIDIROKASTRO' were calculated based on the sum of the Technical Capacity and the Additional Transmission Delivery Capacity of the pertinent Point on the Day of its Maximum Booked Transmission Capacity booked by the Transmission Users in the Year 2023.

2.7 Emergencies and Dealing with Emergencies

During the Year 2023 there was no Crisis in the National Natural Gas System, as defined in the current Emergency Plan (Government Gazette 6453/B/13.11.2023), in accordance with Articles 8 and 10 of Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing of Regulation (EU) 994/2010, as well as those referred to in Chapter 10 of the NNGS Network Code.

2.8 Operating characteristics of the NNGS

The Minimum Inlet Pressure at Entry Points 'SIDIROKASTRO', 'KIPI' and 'NEA MESIMVRIA' is 47.75 barg, 50 barg and 50 barg, respectively. Diagram 3 below shows the average Daily Inlet Pressure at the NNGTS Entry Points 'SIDIROKASTRO', 'KIPI', 'AGIA TRIADA' and 'NEA MESIMVRIA' for the Year 2023.

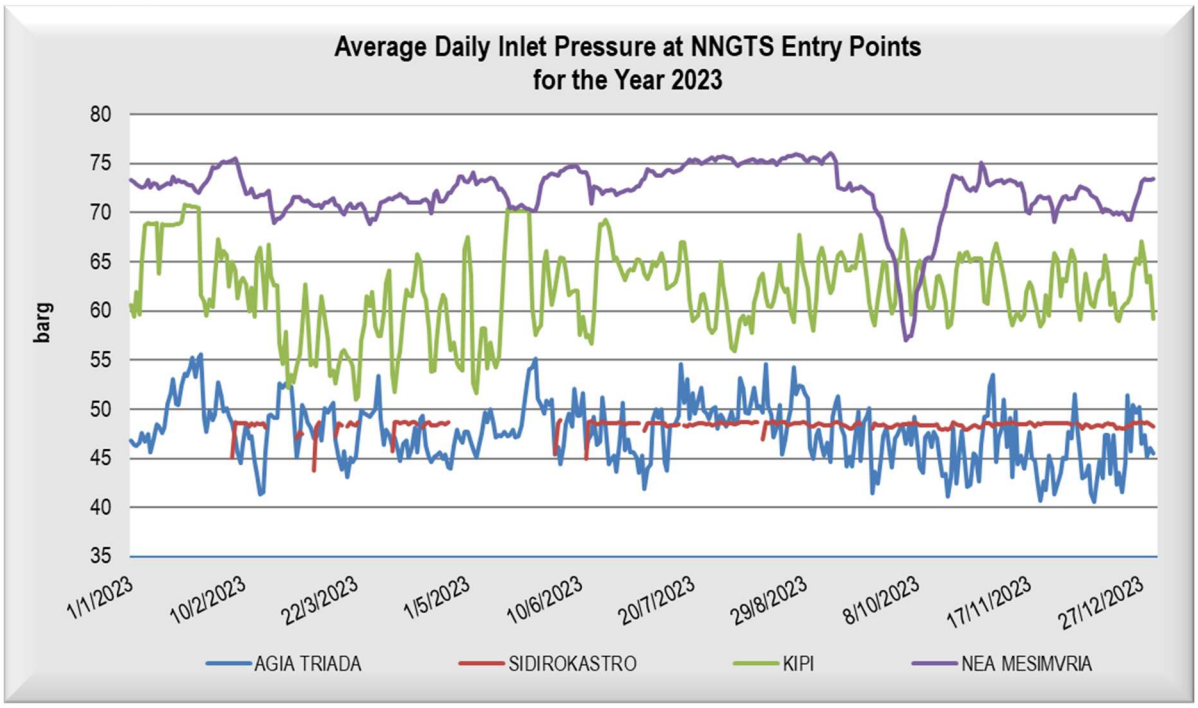

Diagram 3

Furthermore, Diagram 4 shows the average Daily Network Pressure of the NNGTS for the Year 2023, as calculated by data recorded by the NNGTS SCADA system.

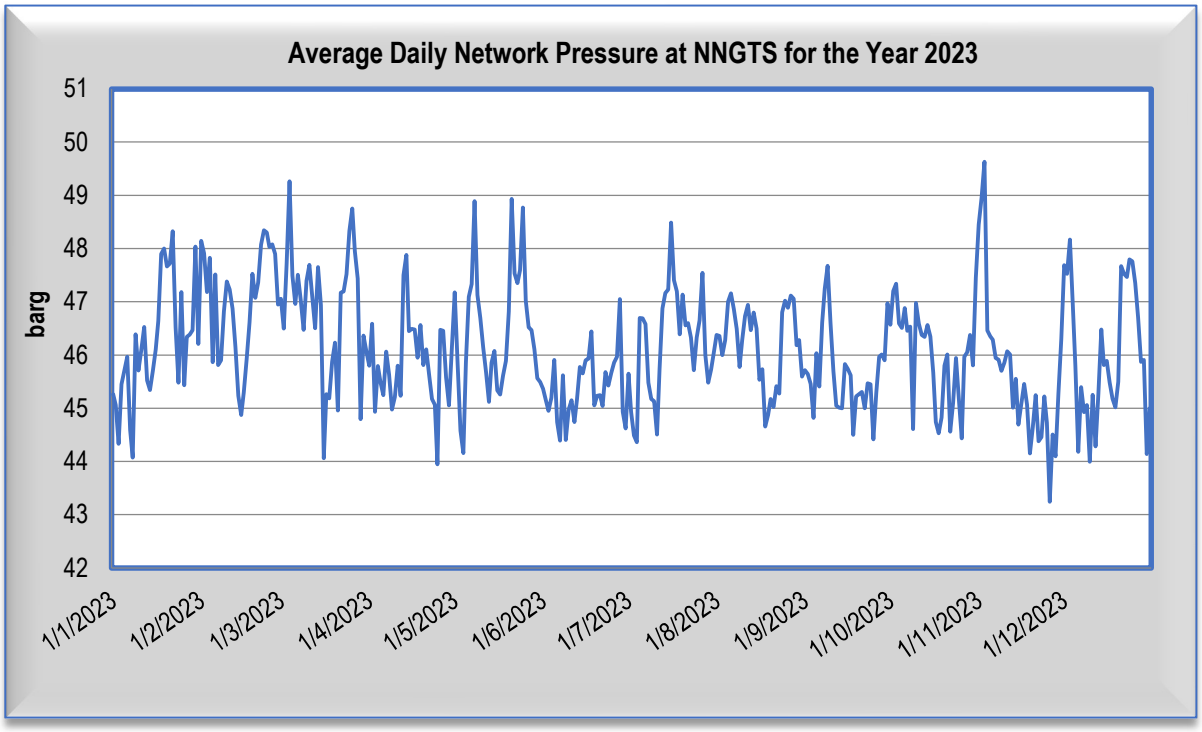

Diagram 4

2.9 Natural Gas Quantities historical data

2.9.1 Daily Natural Gas physical Deliveries/Off-takes

During the Year 2023 the total Natural Gas physical Off-takes at the NNGTS Exit/ Reverse Flow Exit Points was 53,822 mil. kWh (compared to 61,967 mil. kWh during the Year 2022). Diagram 5 shows the Daily Natural Gas physical Off-Takes at the NNGTS Exit/Reverse Flow Exit Points, as a sum, for the Year 2023. It is worth mentioning that the maximum amount of the Natural Gas Off-Takes at the NNGTS Exit/Reverse Flow Exit Points for the Year 2023 was recorded on the Day 26.01.2023, i.e. 219,225,842 kWh.

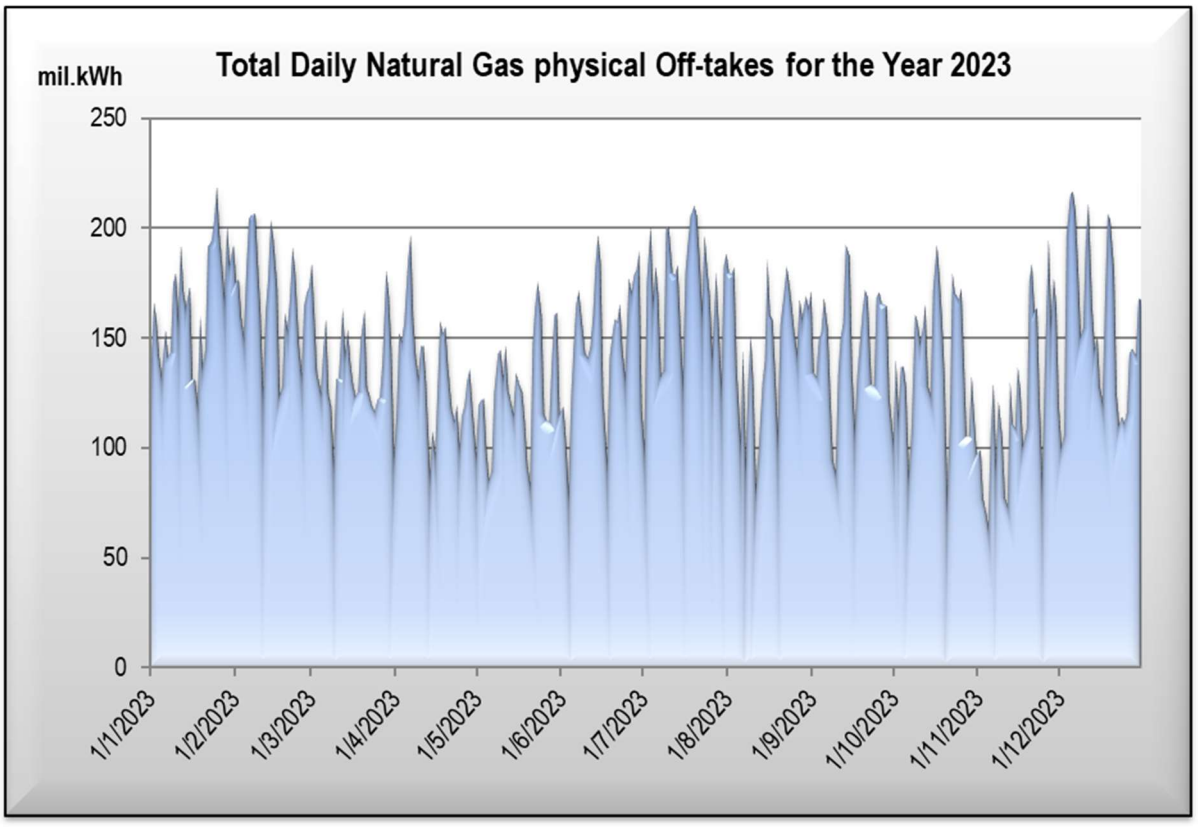

Diagram 5

During the Year 2023 the total Natural Gas physical Deliveries at the NNGTS Entry Points was 53,942 mil. kWh (compared to 61,946 mil. kWh during the Year 2022). Diagram 6 below shows the shares of Natural Gas physical Delivery quantities per NNGTS Entry Point for the Year 2023.

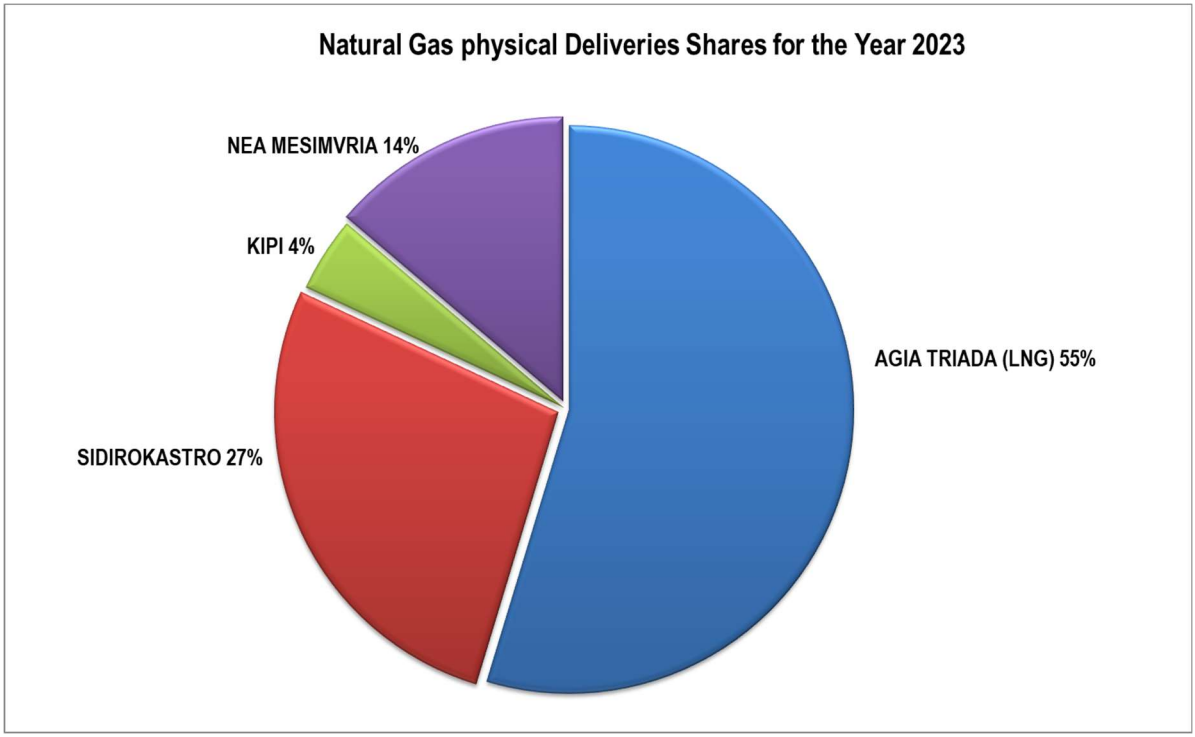

Diagram 6

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 21,860,533 Nm^3 (Day 27.11.2023) to 25,282,065 Nm^3 (Day 04.11.2023). Diagram 7 below shows the Daily variation of the NNGTS Line Pack, as well as the delimitation of the Line Pack for the Year 2023, according to which the Operator performs Balancing Actions so that at the end of a Day, the Line Pack is aimed within the range [22.3 - 24.3] million Nm3, in order to ensure the cost-effective and efficient operation of the NNGTS during the Day without violating the functional limits of the NNGTS within the Day.

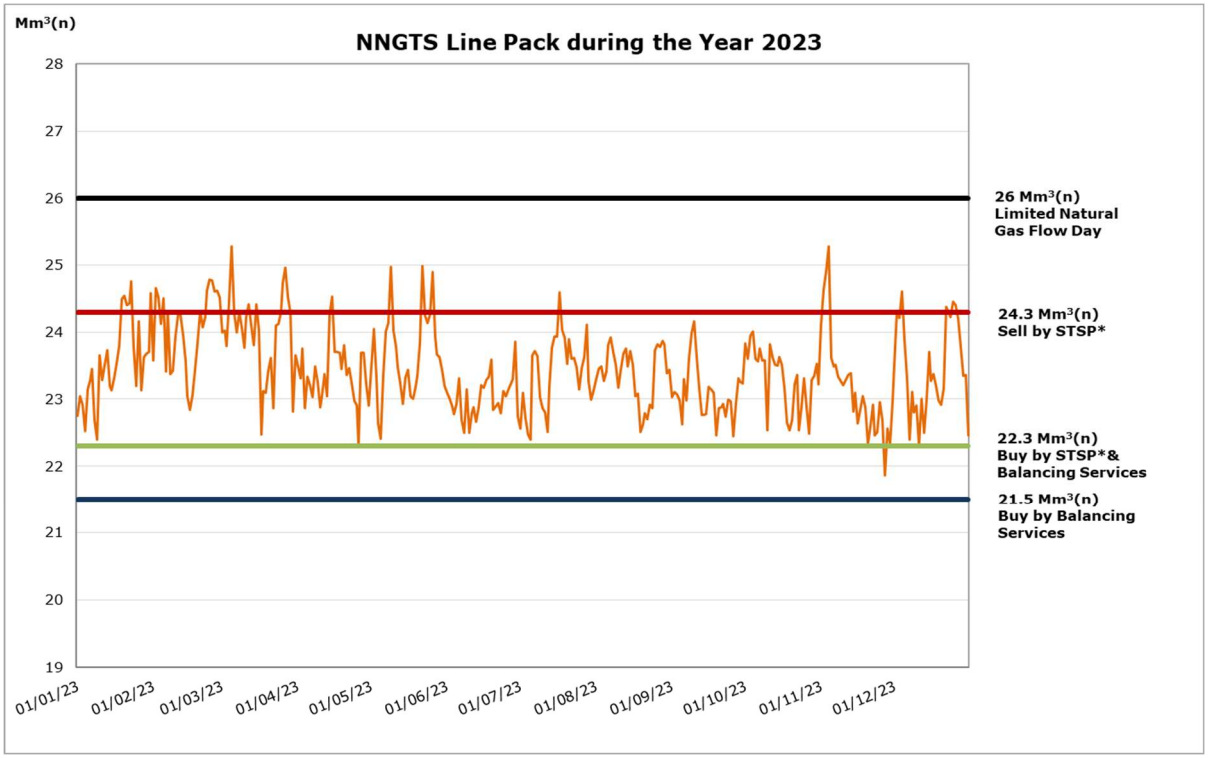

Diagram 7

2.9.3 Total Daily LNG Stock

Through the Entry Point 'AGIA TRIADA' 29,494 mil. kWh of Natural Gas were injected into the NNGTS (compared to 38,077 mil. kWh during the Year 2022), while the LNG unloads led to 28,523 mil. kWh (compared to 35,105 mil. kWh during the Year 2022).

Diagram 8 on the next page shows the Daily configuration of the total LNG stock of the LNG Users, including the Balancing Gas that DESFA stored for performing balancing services, during the Year 2023.

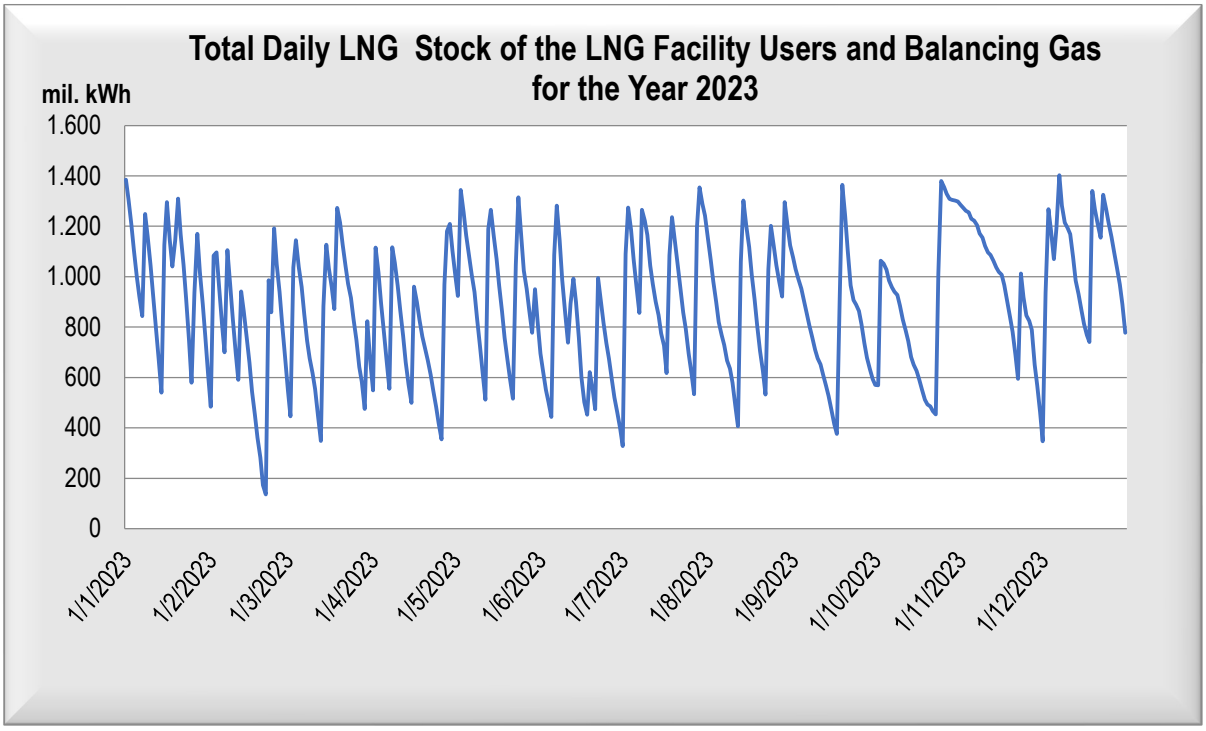

Diagram 8

2.9.4 Historical Operational data of the Compression Station in Nea Mesimvria

The Compression Station in Nea Mesimvria, Thessaloniki, consumed 45,957,228 kWh of Natural Gas as fuel during the Year 2023. The amount corresponds to 87% of the total Operational Gas that was used in the NNGTS during the Year 2023, which amounts to 52,895,390 kWh.

Diagram 9 on the next page shows the Operational Gas used in the NNGTS and the Natural Gas consumed as fuel for the operation of the Compression Station on a Monthly basis during the Year 2023.

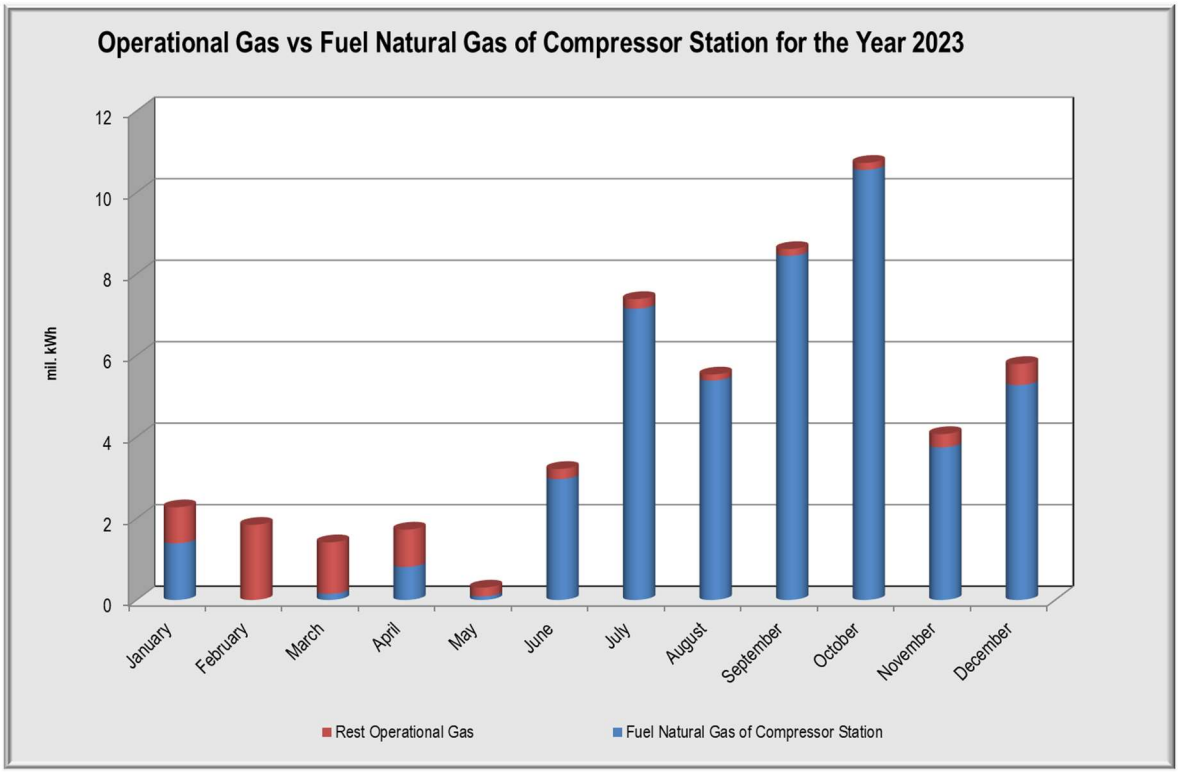

Diagram 9

Diagram 10 below shows the Natural Gas quantity that was handled by the Compression Station on a Monthly basis during the Year 2023.

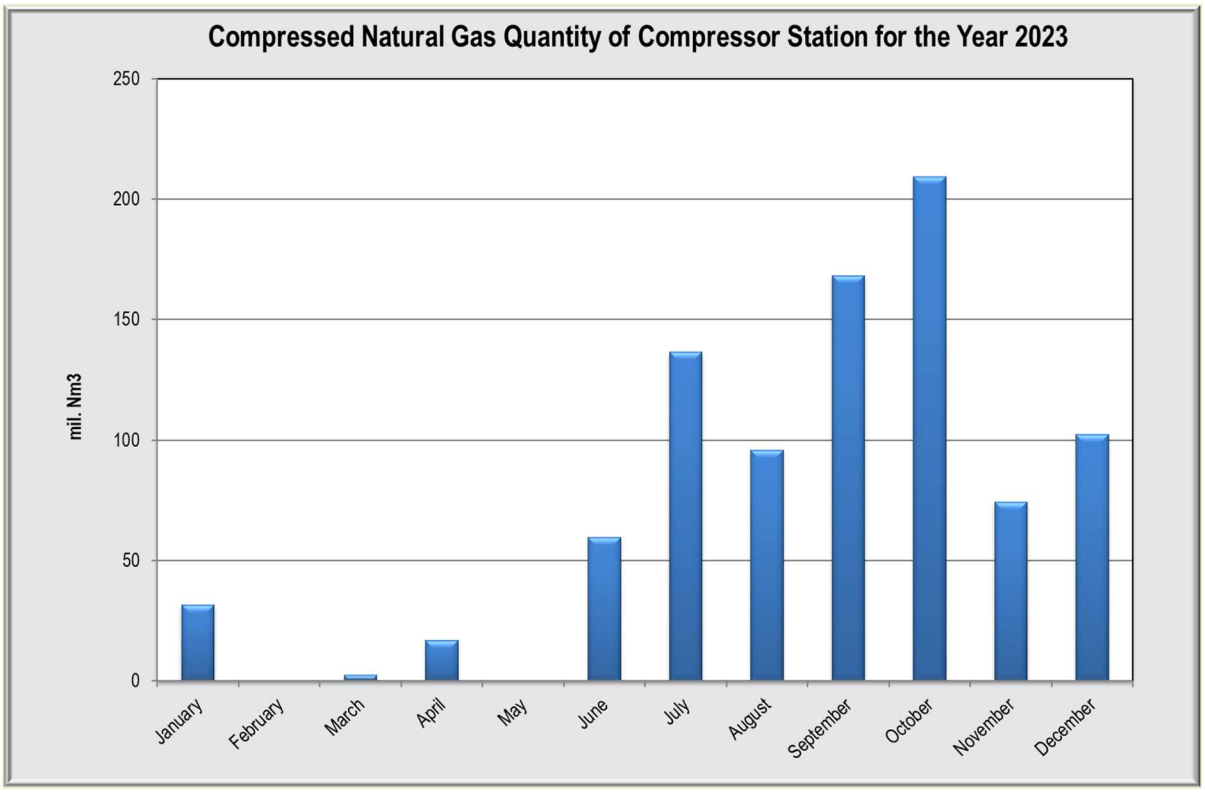

Diagram 10

2.9.5 Natural Gas out of specifications during the Year 2023

During the Year 2023, the average Daily Delivery Pressure at the Entry Point 'SIDIROKASTRO' was lower than the Minimum Entry Pressure (47.75 barg) for ten (10) Days, while there was no average Daily Delivery Pressure lower than the Minimum Entry Pressure (50 barg) at the Entry Points 'KIPI' and 'NEA MESIMVRIA'.

Finally, during the Year 2023, one incident occurred where the Natural Gas was out of the quality specifications, as these are specified in Annex I of the NNGS Network Code, referring to the Natural Gas temperature off-taken at the Exit Point 'MEGALOPOLI' for one (1) Day.