Halandri, Attica

Operation Report of the NNGS for the Year 2022

(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-seven (47) 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; and
- LNG gasification installations of sustained maximum sendout rate 1,400 m^3 LNG/h.

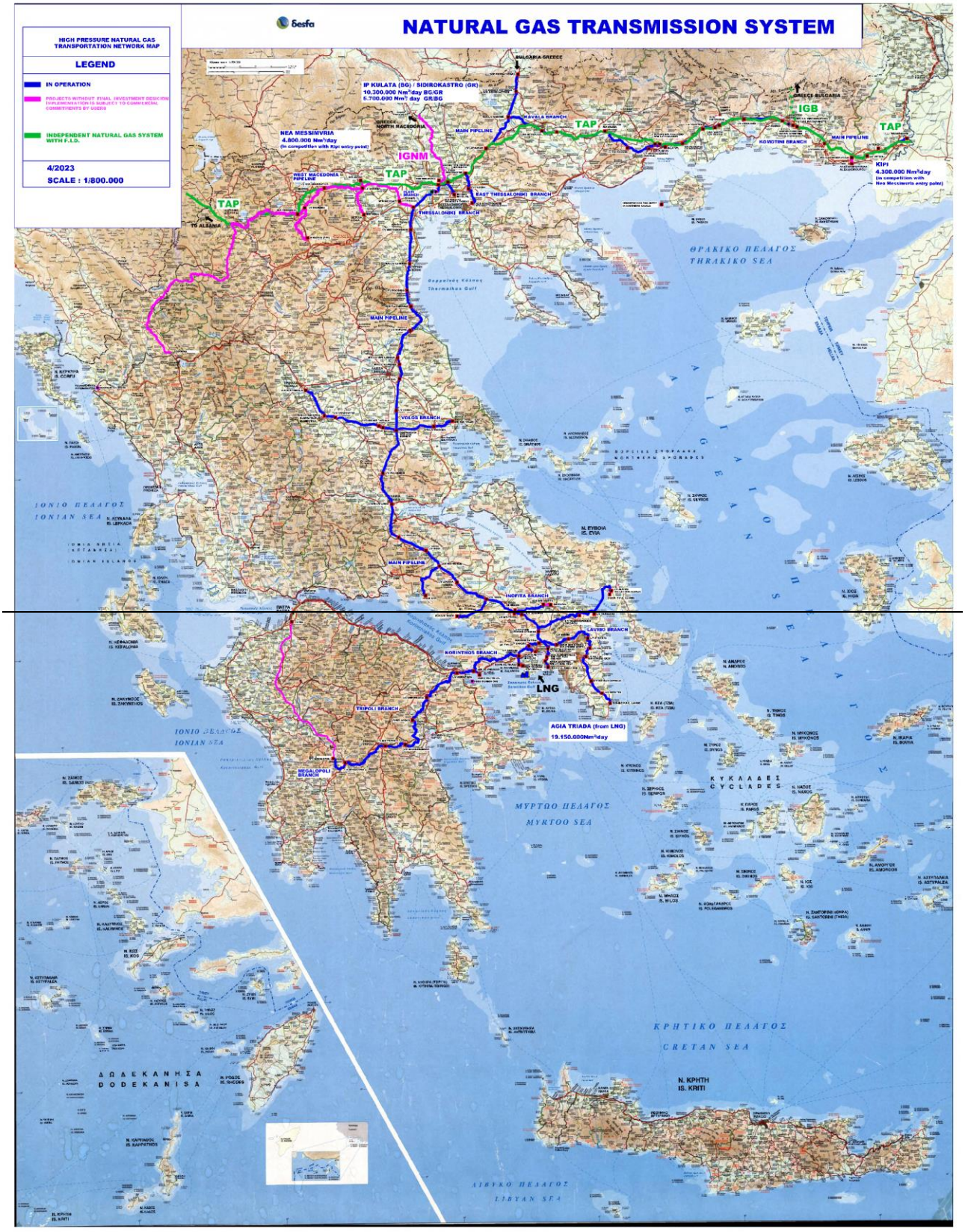

Diagram 1: NNGS Geographical Depiction

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 2022, the technical characteristics of the NGTS were changed as follows:

1. on the 13th.04.2022 the Metering/Regulating Station 'MEGALOPOLI' (TM-6) was put into operation at the new NNGTS Exit Point 'MEGALOPOLI' with Technical Capacity 3,314,880 kWh/Day;
2. on the 20th.04.2022 the Exit Point 'ALOYMINION IV' was added in the NNGTS with Technical Capacity 34,250,997 kWh/Day;
3. on the 01st.06.2022 the sustained maximum send-out capacity rate of the LNG Terminal was increased from 1.250 m^3 LNG per hour to 1.400 m^3 LNG per hour and consequently the Technical Capacity of the NNGTS Entry Point 'AGIA TRIADA' was changed from 201,654,253 kWh/Day to 224,592,985 kWh/Day;
4. on the 30th.11.2022, the Metering/Regulating Station 'TRIPOLI' (U-7270) was put into operation at the new NNGTS Exit Point 'TRIPOLI' with Technical Capacity 5,565,600 kWh/Day;
5. in January 2022, the upgraded real-time hydraulic simulation system of the NNGTS was put into operation for use by the NNGTS Control & Dispatching Center in Patima Elefsina; and
6. in October 2022, the new Supervisory Control and Data Collection (SCADA) system was put into operation at the upgraded NNGTS Control & Dispatching Center in Patima Elefsina.

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)	117,493,289	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	6,678,585	M AdG III (U-TM1/TM5)	6,678,585
4	ALOYMINION IV	34,250,997	M AdG IV (U-2850) (4)	
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	KARDITSA	5,342,868	M/R KARDITSA (U-6240)	5,342,868
25	KATERINI	7,480,015	M/R KATERINI (U-2340)	7,480,015
26	KERATSINI (PPC)	27,289,500	M PPC KERATSINI (U-3090)	27,289,500
27	KILKIS	11,754,309	M/R KILKIS (U-2060)	11,754,309
28	KOKKINA	2,671,434	M/R KOKKINA (U-2670)	2,671,434
29	KOMOTINI (PPC)	28,851,488	M/R PPC KOMOTINI (U-3570)	28,851,488
30	KOMOTINI	5,342,868	M/R KOMOTINI (U-3580)	5,342,868
31	KOSMIO	12,159,840	M/R KOSMIO (U-2550)	12,159,840
32	LAMIA	7,480,015	M/R LAMIA (U-2620)	7,480,015
33	LARISSA	13,843,371	M/R NORTH LARISSA (U-2520)	6,921,685
			M/R SOUTH LARISSA (U-2530)	6,921,685
34	LAVRIO (PPC)	64,114,418	M PPC LAVRIO (U-3430)	64,114,418
35	MEGALOPOLI	3,314,880	M/R MEGALOPOLI (TM-6)	3,314,880
36	MEGALOPOLIS (PPC)	42,742,945	M PPC MEGALOPOLIS (U-7320)	42,742,945
37	SPATA	3,072,149	M/R MARKOPOULO (U-3460)	3,072,149
38	XANTHI	11,754,309	M/R XANTHI (U-3530)	11,754,309
39	OINOFYTA	11,836,679	M/R THIVA (U-2740)	4,755,242
			M/R INOFYTA (U-2880)	7,081,437

40	PLATY	5,740,377	M/R PLATY (U-2410)	5,740,377
41	SALFA ANO LIOSSIA	2,671,434	M STATION ANO LIOSSIA (U-5010) (2)	
42	SALFA ANTHOUSSA	1,371,600	M STATION ANTHOUSA (U-5210)	1,371,600
43	SERRES	11,754,309	M/R SERRES (U-2110)	11,754,309
44	TRIKALA	5,342,868	M/R TRIKALA (U-6260)	5,342,868
45	TRIPOLI	5,565,600	M/R TRIPOLI (U-7270)	5,565,600
46	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)	66,285,300	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 01.10.2022 the Technical Capacity of the Entry Point "SIDIROKASTRO" was 117,265,409 kWh/Day and the Technical Capacity of the Reverse Flow Exit Point "SIDIROKASTRO" was 64,529,700 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 2022.

Annual profile of physical Natural Gas Deliveries/Off-takes and Daily peaks at the NNGTS Entry/Exit Points					
Year 2022					
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	104,320,083	208,640,256	46.4	92.9
KIPI	48,592,292	6,650,380	20,909,225	13.7	43.0
NEA MESIMVRIA	53,368,256	34,510,555	70,526,774	64.7	132.2
SIDIROKASTRO (1)	117,493,289	24,233,278	99,359,432	20.6	84.6
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	118,091	232,683	3.9	7.8
ATHENS	101,876,740	11,299,792	46,874,022	11.1	46.0
ALEXANDROUPOLIS	7,480,015	99,432	202,790	1.3	2.7
ALIVERI (PPC)	21,371,472	10,669,538	19,451,406	49.9	91.0
ALOYMINION	26,714,340	11,429,208	20,153,720	42.8	75.4
ALOYMINION II	20,723,593	8,148,636	18,712,616	39.3	90.3
ALOYMINION III	6,678,585	1,204,959	2,352,279	18.0	35.2
ALOYMINION IV	34,250,997	234,391	20,091,035	0.7	58.7
VIPE LARISSA	2,671,434	193,564	370,551	7.2	13.9
VOLOS	13,796,086	1,923,990	7,144,727	13.9	51.8
VFL	6,493,989	4,281,997	5,100,063	65.9	78.5
DRAMA	7,480,015	798,858	1,575,771	10.7	21.1
ELPE	4,815,794	147,024	1,973,350	3.1	41.0
ELPE-VEE	12,756,552	665,309	9,116,657	5.2	71.5
ELPE-HAR	8,014,302	265,109	3,585,404	3.3	44.7
ENERGIAKI THESS. (ELPE)	26,714,340	9,182,347	18,063,153	34.4	67.6
HERON II	22,441,482	11,970,066	18,713,189	53.3	83.4
HERONAS	10,685,736	63,691	2,298,804	0.6	21.5
THESSALONIKI	77,501,024	8,938,626	38,236,234	11.5	49.3

THISVI	23,738,101	9,015,431	18,184,321	38.0	76.6
KAVALA	2,671,434	4,341	17,681	0.2	0.7
KARDITSA	5,342,868	516,746	2,067,115	9.7	38.7
KATERINI	7,480,015	468,044	547,472	6.3	7.3
KERATSINI (PPC)	27,289,500	0	0	0.0	0.0
KILKIS	11,754,309	1,130,927	2,167,112	9.6	18.4
KOMOTINI (PPC)	28,851,488	8,448,666	22,677,081	29.3	78.6
KOMOTINI	5,342,868	176,259	250,937	3.3	4.7
KOKKINA	2,671,434	201,455	342,059	7.5	12.8
KOSMIO	12,159,840	511	39,220	0.0	0.3
LAMIA	7,480,015	162,290	288,533	2.2	3.9
LARISSA	13,843,371	2,172,405	8,369,948	15.7	60.5
LAVRIO (PPC)	64,114,418	16,339,604	41,266,821	25.5	64.4
MEGALOPOLIS (PPC)	42,742,945	16,764,182	32,323,269	39.2	75.6
MEGALOPOLI	3,314,880	1,466	19,807	0.0	0.6
MOTOR OIL	26,714,340	795,183	8,013,058	3.0	30.0
MOTOR OIL II	21,371,472	11,867,862	19,076,508	55.5	89.3
XANTHI	11,754,309	143,442	312,639	1.2	2.7
OINOFYTA	11,836,679	3,407,391	4,545,350	28.8	38.4
PLATY	5,740,377	3,579	39,623	0.1	0.7
SALFA ANTHOUSSA	1,371,600	134,867	232,766	9.8	17.0
SALFA ANO LIOSSIA	2,671,434	191,209	260,065	7.2	9.7
SERRES	11,754,309	695,648	1,711,301	5.9	14.6
SPATA	3,072,149	323,605	680,466	10.5	22.1
TRIKALA	5,342,868	515,509	2,146,963	9.6	40.2
TRIPOLI	5,565,600	95	26,046	0.0	0.5
FARSALA	1,870,003	62,471	304,828	3.3	16.3
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)	66,285,300	14,594,906	79,315,848	22.0	119.7

Table 3

Comments on Table 3:

1. Until 01.10.2022 the Technical Capacity of the Entry Point "SIDIROKASTRO" was 117,265,409 kWh/Day and the Technical Capacity of the Reverse Flow Exit Point "SIDIROKASTRO" was 64,529,700 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 2022 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 2022.

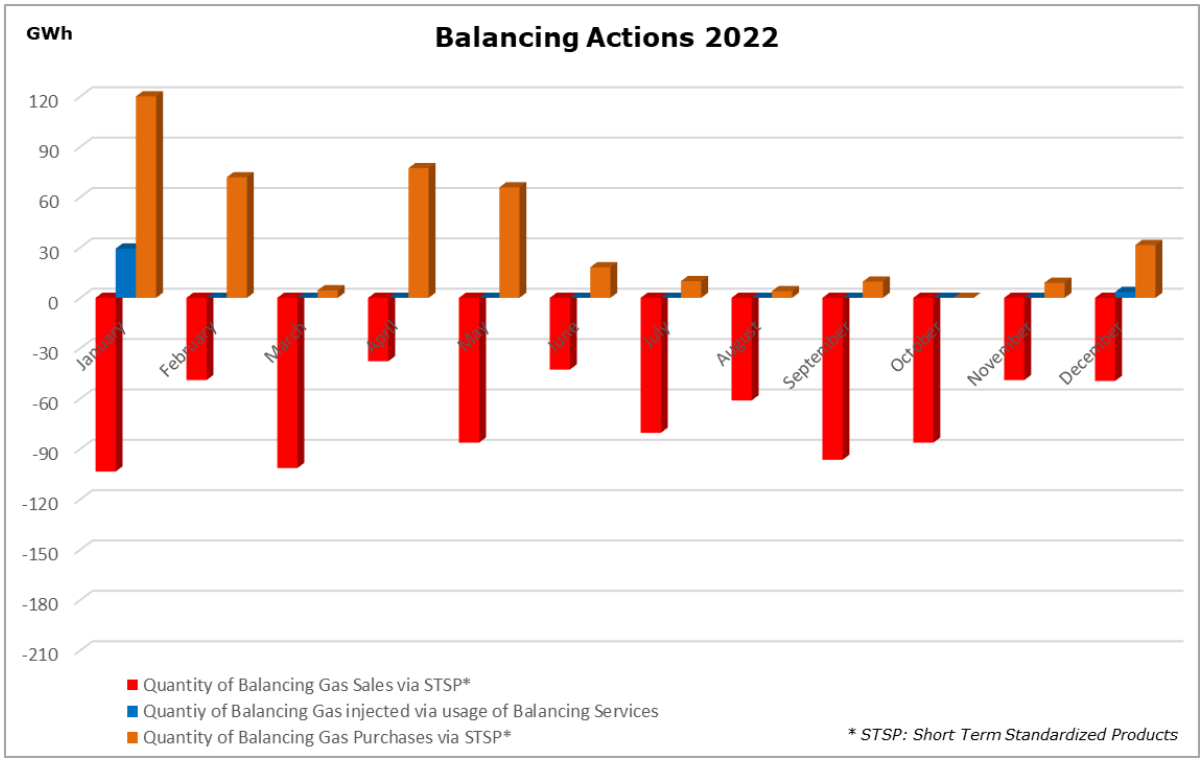

Diagram 2

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 2022, in accordance with the provisions of paragraph 7 of Article 44[A] of the NNGS Network Code.

2022	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	29,352,825	3,483,000.00 €	7	186,110,000	20,651,622.93 €	20	103,450,000	4,344,291.88 €	6
FEBRUARY	0	0	0	71,850,000	6,530,652.75 €	14	49,000,000	3,205,468.40 €	9
MARCH	0	0	0	4,490,000	570,813.50 €	4	101,400,000	10,169,200.86 €	15
APRIL	0	0	0	77,250,000	9,655,601.00 €	9	37,750,000	3,317,163.79 €	7
MAY	0	0	0	65,800,000	6,228,600.00 €	11	86,237,000	5,050,850.00 €	13
JUNE	0	0	0	18,200,000	2,584,520.00 €	4	42,700,000	3,563,569.50 €	8
JULY	0	0	0	10,000,000	1,644,556.00 €	2	80,400,000	8,785,026.50 €	17
AUGUST	0	0	0	4,000,000	622,500.00 €	2	61,100,000	11,028,165.00 €	15
SEPTEMBER	0	0	0	9,650,000	1,822,050.00 €	2	96,500,000	9,491,766.00 €	13
OCTOBER	0	0	0	0	0.00 €	0	86,250,000	4,352,809.00 €	12
NOVEMBER	0	0	0	9,000,000	1,020,710.00 €	4	49,000,000	3,672,209.73 €	18
DECEMBER	3,519,953	0	1	31,500,000	3,822,296.00 €	6	49,500,000	4,410,303.00 €	12
YEARLY SUM	**32,872,778**	**3,483,000.00 €**	**8**	**487,850,000**	**55,153,922.18 €**	**78**	**843,287,000**	**71,390,823.66 €**	**145**

Table 4

2.5 Maintenance Standard and Quality

Table 5 shows (a) the Maintenance Program of NNGS for the Year 2022, 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 2022 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 2022 / NON-SCHEDULED MAINTENANCE					
No.	**DESCRIPTION OF WORKS**	**IMPLICATIONS**	**PERIOD OF WORKS**	**MAINTENANCE DAYS**	**REMARKS**
1	Hot tapping works in the 'Alouminion Branch' of the NNGTS	Transmission Capacity for Reception at Exit Point 'ALOYMINION II': 0 kWh/Day	24.02.2022 07:00 – 27.02.2022 07:00	3	Works were included in the NNGS Maintenance Program for the Year 2022
2	Restoration of buckle and split of the pipeline at a point of the section 'Markopoulo Oropos – Varnavas' of the Aliveri Branch of the NNGTS	Transmission Capacity for Reception at Exit Point 'ALIVERI (PPC)': 0 kWh/Day	24.03.2022 07:00 – 14.05.2022 07:00	51	Works were not included in the NNGS Maintenance Program for the Year 2022
3	Maintenance of the Metering / Regulating Station 'Nea Mesimvria' (U-6930) at the interconnection point of DESFA and TAP networks	Transmission Capacity for Delivery at Entry Point 'NEA MESIMVRIA': 0 kWh/Day	11.04.2022 07:00 – 14.04.2022 07:00	3	Works were included in the NNGS Maintenance Program for the Year 2022
4	Maintenance at Nea Mesimvria Compression Station	Transmission Capacity for Delivery at Entry Point 'SIDIROKASTRO': 22,000,000 kWh/Day Transmission Capacity for Delivery at Entry Point 'KIPI': 0 kWh/Day	27.04.2022 07:00 – 30.04.2022 07:00	3	Works were included in the NNGS Maintenance Program for the Year 2022
5	Cleaning works in the 'Nea Mesimvria-Platamonas' pipeline section of the NNGTS	Transmission Capacity for Delivery at Entry Point 'SIDIROKASTRO': 69,000,000 kWh/Day Transmission Capacity for Reception of Reverse Flow at Exit Point 'SIDIROKASTRO': 0 kWh/Day	16.05.2022 07:00 – 17.05.2022 07:00	1	Works were included in the NNGS Maintenance Program for the Year 2022
6	Maintenance at Nea Mesimvria Compression Station	Transmission Capacity for Delivery at Entry Point 'SIDIROKASTRO': 0 kWh/Day Transmission Capacity at Entry Point 'KIPI': 22,013,955 kWh/Day	21.06.2022 07:00 – 25.06.2022 07:00	4	Works were included in the NNGS Maintenance Program for the Year 2022

7	- Maintenance at Border Metering Station (BMS) Sidirokastro [two (2) Days] - Maintenance at Nea Mesimvria Compression Station [three (3) Days]	Transmission Capacity for Delivery at Entry Point 'SIDIROKASTRO': 33,000,000 kWh/Day Transmission Capacity for Delivery at Entry Point 'KIPI': 0 kWh/Day Transmission Capacity for Reception of Reverse Flow at Exit Point 'SIDIROKASTRO': 0 kWh/Day [for the Days September 26 and 27]	26.09.2022 07:00 – 29.09.2022 07:00	3	Works were included in the NNGS Maintenance Program for the Year 2022
8	Technical retaining work in the area of the NNGTS Tripoli valve station	Transmission Capacity for Reception at Exit Point 'TRIPOLI': (A) 0 kWh/Day [for the Days December 02 to 04] (B) 3,710,400 kWh/Day [for the Day December 05]	02.12.2022 07:00 – 05.12.2022 15:00	4	Works were not included in the NNGS Maintenance Program for the Year 2022

Table 5

CALIBRATIONS – YEAR 2022

ENTRY POINT STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SIDIROKASTRO / U – 2010				13, 15, 18, 19, 20						18-27		
AGIA TRIADA / U – 3020				18-19						26		
KIPI / U – 3900				18-20						11-13		
NEA MESIMVRIA / U-6910				22-24, 28						5-6, 10		
EXIT POINT STATION	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
PPC LAVRIO / U – 3430			14-18				11 - 15				14 - 18	
THRIASSIO / U – 2960					6						29	
PPC ALIVERI PPC / U – 6370	11						4					
ATHENS WEST / U – 2990						16-17						13
ATHENS NORTH / U – 2910				6-7						10-11		
ATHENS EAST / U – 2940				11-12						13		
STATION ANTHOUSA / U-5210				12						14		
ATHENS HAR / U-2970		17						22				
INOFYTA / U – 2880						8-9						14-15
HERONAS / U – 6020			8						13			
HERON B / U – 6030			9						14			

MARKOPOULO / U-3460					10						10	
PP THISVI / U-6650	10						6					
AdG / U – 2820						27						7
AdG B / U-2830						29						8
AdG III / TM1/TM5						28						6
THIVA / U-2740	19						1					
ELPE ELEFSINAS / U-7420				5						12		
MOTOR OIL / U – 7130	19						4					
MOTOR OIL B / U – 7140	24 & 27						6					
PPC MEGALOPOLI / U – 7320			8-9					29 - 30				
MEGALOPOLI / U–TM06											10	
AG. THEODOROI / U – 7045				15						14-15		
VOLOS / U – 2680					16-17						21-22	
LARISSA NORTH / U – 2520					18-19						23-24	
LARISSA SOUTH / U – 2530					23-24						28-29	
VIPE LARISSA / U – 2515					5						7-8	
LAMIA / U–2620					11-12						16-17	
KARDITSA / U–6240					9-10						10 & 15	
TRIKALA / U-6260						2-3						5 - 6
FARSALA / U-6280					3-4						2	7

KOKKINA / U-2670					25						30	1
THESSALONIKI NORTH / U–2240				14-15						14-15		
THESSALONIKI EAST / U-2220				12-13						12-13		
ELPE DIAVATA / U-2270				19						20		
PLATY / U–2410					5					24		
EKO / U–2250				28						18-19		
KILKIS / U–2060					9-10						2-3	
KATERINI / U–2340					3					27		
PPC KOMOTINI / U–3570			9-14				13-15 & 21				15-18	
KOMOTINI / U-3580				14-15						18-19		
KAVALA / TM4-A					15					19		
VFL / U–2170						2 & 4						7-8
XANTHI / U–3530			23-24						13-14			
ALEXANDROUPOLIS / U–3630					9-10						24-25	
KOSMIO / U-2550			24						12			
DRAMA / U–2140			16-17						21-22			
SERRES / U–2110			14-15						19			

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 2022, 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	22,013,955	45%
NEA MESIMVRIA	53,368,256	40,298,901	76%
SIDIROKASTRO(1)	117,493,289	134,183,905	114%
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	210,000	7%
ATHENS	101,876,740	42,671,543	42%
ALEXANDROUPOLIS	7,480,015	141,767	2%
ALIVERI (PPC)	21,371,472	18,864,000	88%
ALOYMINION	26,714,340	20,000,000	75%
ALOYMINION II	20,723,593	18,300,000	88%
ALOYMINION III	6,678,585	2,227,013	33%
ALOYMINION IV	34,250,997	27,000,001	79%
VIPE LARISSA	2,671,434	321,902	12%
VOLOS	13,796,086	8,666,290	63%
VFL	6,493,989	5,150,000	79%
DRAMA	7,480,015	1,569,774	21%
ELPE	4,815,794	1,800,000	37%

ELPE-VEE	12,756,552	10,050,000	79%
ELPE-HAR	8,014,302	3,600,000	45%
ENERGIAKI THESS. (ELPE)	26,714,340	16,654,028	62%
HERON II	22,441,482	19,399,999	86%
HERONAS	10,685,736	2,500,001	23%
THESSALONIKI	77,501,024	36,840,669	48%
THISVI	23,738,101	17,826,758	75%
KAVALA	2,671,434	16,003	1%
KARDITSA	5,342,868	1,980,529	37%
KATERINI	7,480,015	532,796	7%
KERATSINI (PPC)	27,289,500	0	0%
KILKIS	11,754,309	2,877,188	24%
KOMOTINI (PPC)	28,851,488	21,841,000	76%
KOMOTINI	5,342,868	279,333	5%
KOKKINA	2,671,434	283,677	11%
KOSMIO	12,159,840	8,904	0%
LAMIA	7,480,015	237,530	3%
LARISSA	13,843,371	7,391,447	53%
LAVRIO (PPC)	64,114,418	41,660,000	65%
MEGALOPOLIS (PPC)	42,742,945	31,655,000	74%
MEGALOPOLI	3,314,880	26,322	1%
MOTOR OIL	26,714,340	8,000,000	30%
MOTOR OIL II	21,371,472	18,000,000	84%
XANTHI	11,754,309	262,702	2%
OINOFYTA	11,836,679	4,337,572	37%
PLATY	5,740,377	25,005	0%
SALFA ANTHOUSSA	1,371,600	139,000	10%
SALFA ANO LIOSSIA	2,671,434	310,000	12%
SERRES	11,754,309	1,560,918	13%
SPATA	3,072,149	605,098	20%
TRIKALA	5,342,868	1,877,275	35%
TRIPOLI	5,565,600	20,520	0%
FARSALA	1,870,003	246,097	13%

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	66,285,300	66,285,300	100%

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 2022.

2.7 Emergencies and Dealing with Emergencies

During the Year 2022 there was no Crisis in the National Natural Gas System, as defined in the current Emergency Plan (Government Gazette 201/B/19.01.2023), 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 2022.

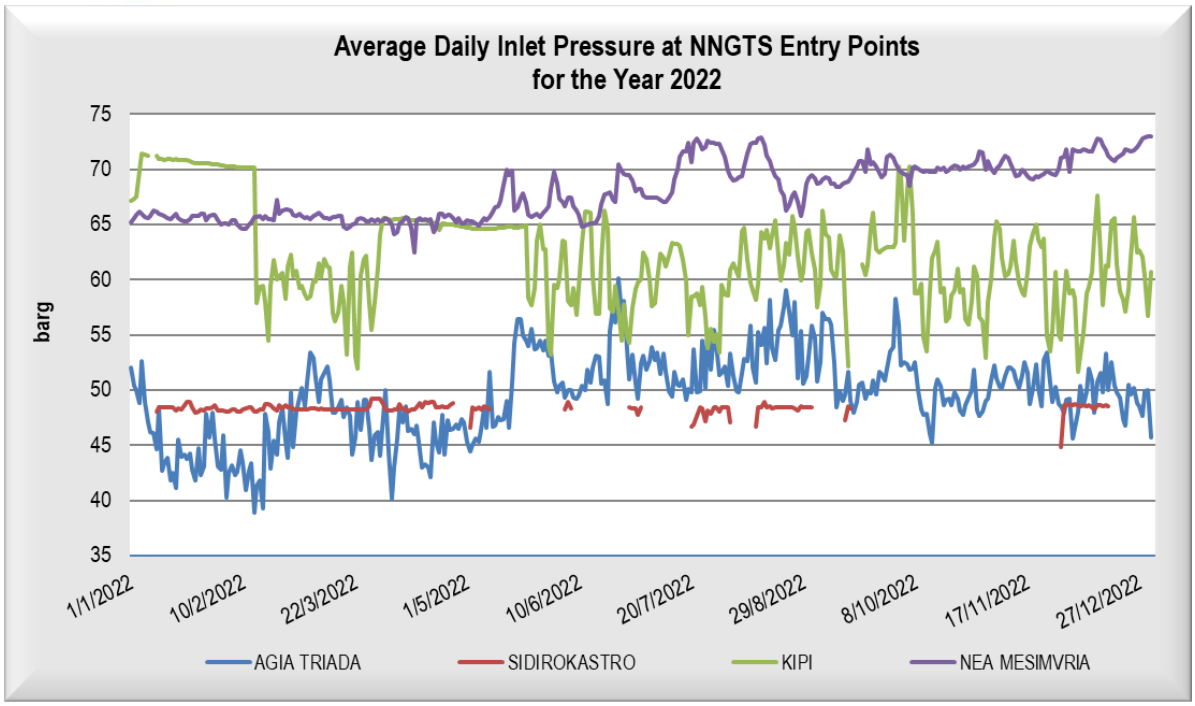

Diagram 3

Furthermore, Diagram 4 shows the average Daily Network Pressure of the NNGTS for the Year 2022, as calculated by data recorded by the NNGTS SCADA system.

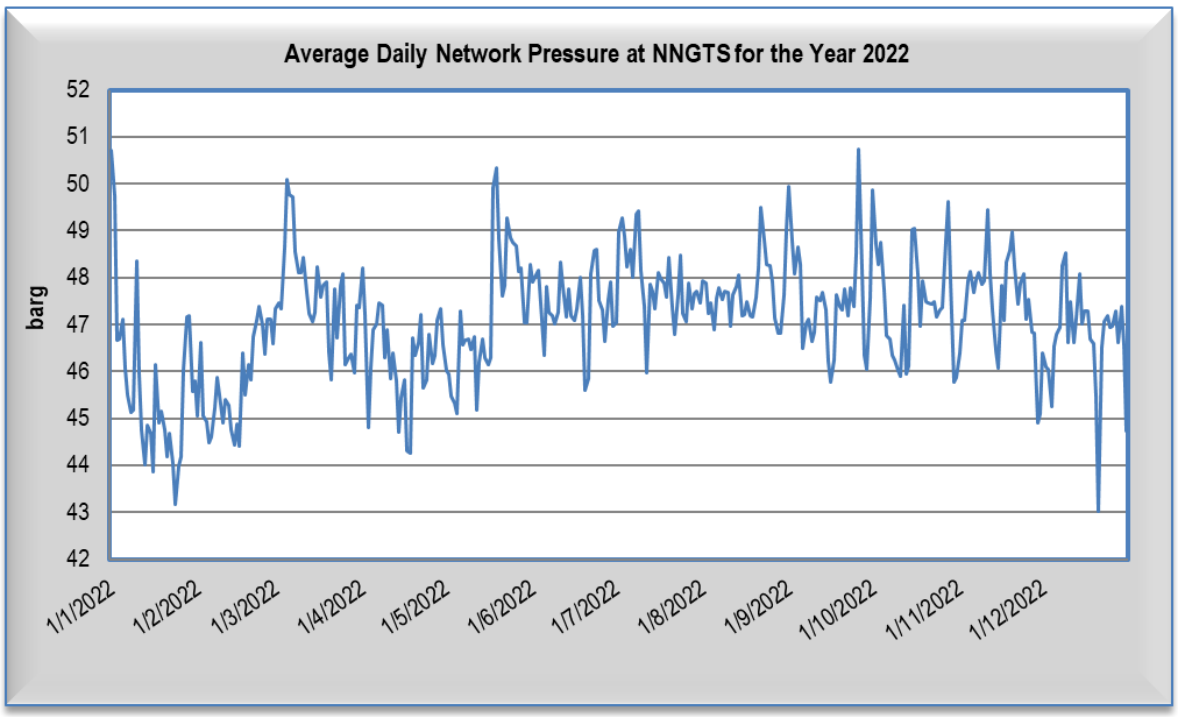

Diagram 4

2.9 Natural Gas Quantities historical data

2.9.1 Daily Natural Gas physical Deliveries/Off-takes

During the Year 2022 the total Natural Gas physical Off-takes at the NNGTS Exit/ Reverse Flow Exit Points was 61,967 mil. kWh (compared to 70,133 mil. kWh during the Year 2021). Diagram 5 shows the Daily Natural Gas physical Off-Takes at the NNGTS Exit/Reverse Flow Exit Points, as a sum, for the Year 2022. 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 2022 was recorded on the Day 27.01.2022, i.e. 304,671,447 kWh.

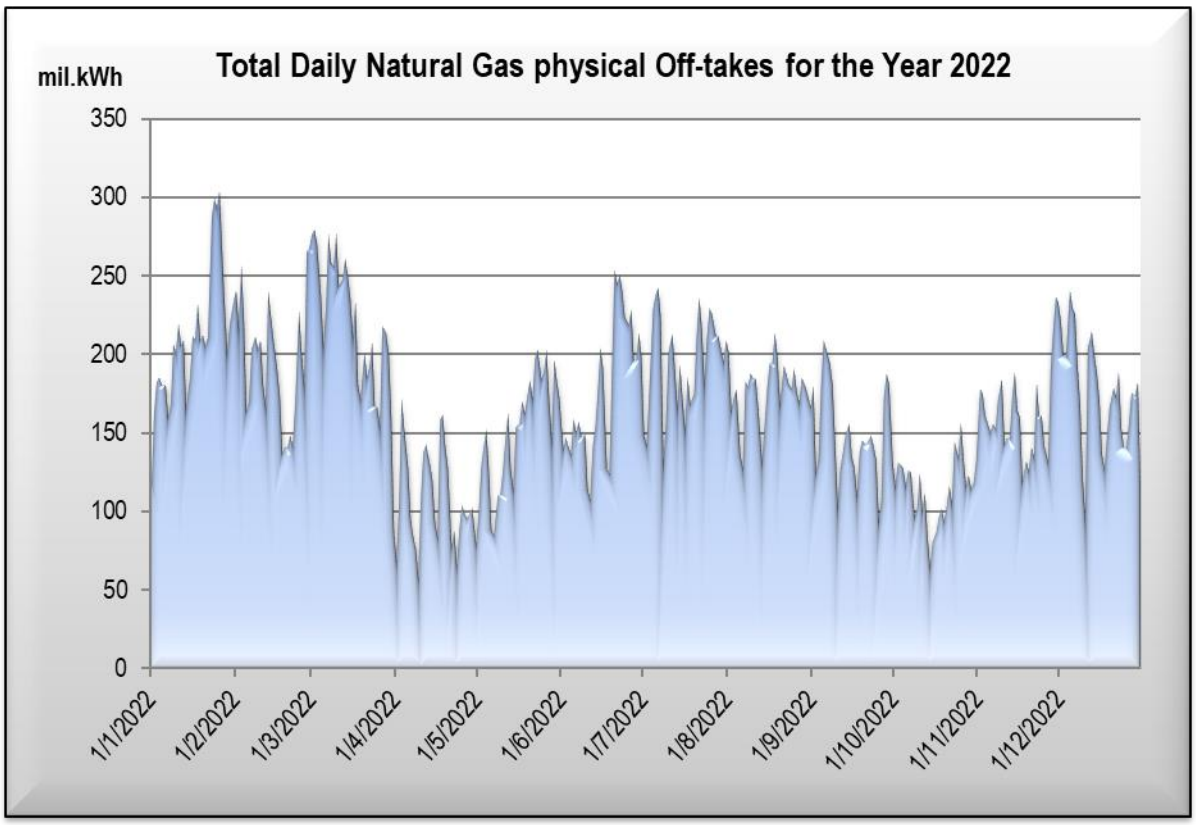

Diagram 5

During the Year 2022 the total Natural Gas physical Deliveries at the NNGTS Entry Points was 61,946 mil. kWh (compared to 70,307 mil. kWh during the Year 2021). Diagram 6 below shows the shares of Natural Gas physical Delivery quantities per NNGTS Entry Point for the Year 2022.

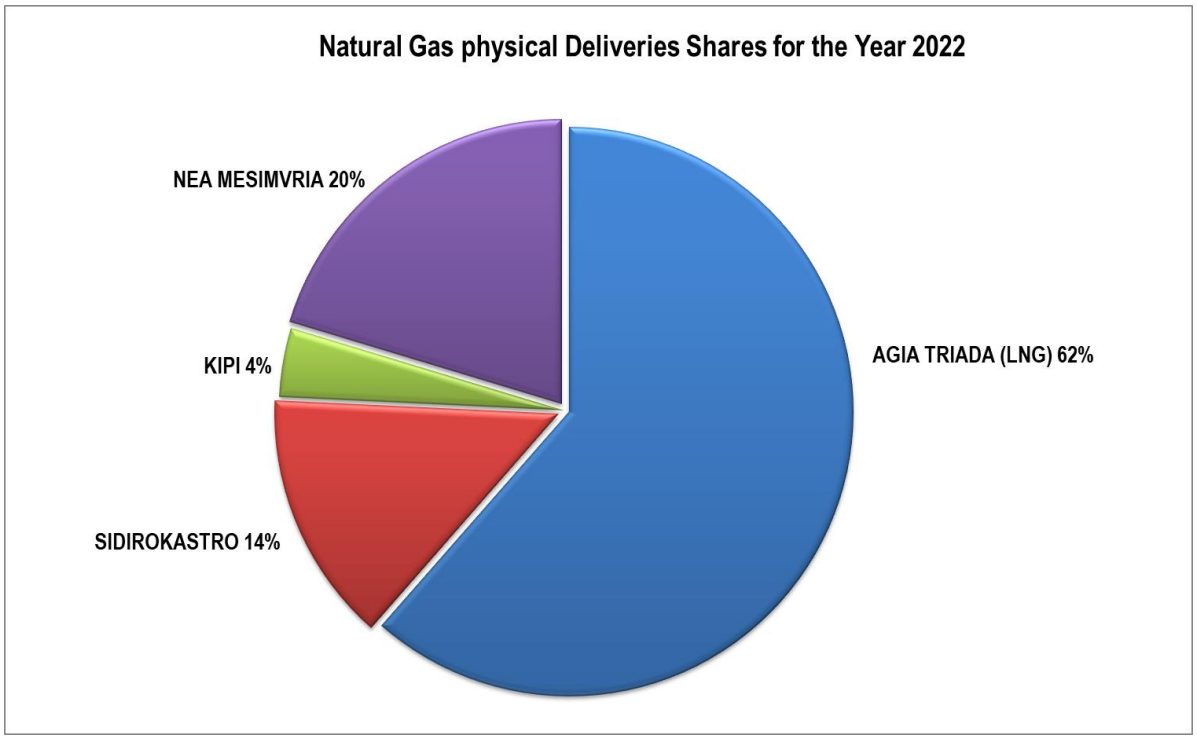

Diagram 6

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 21,816,379 Nm^3 (Day 22.12.2022) to 26,058,932 Nm^3 (Day 02.01.2022). Diagram 7 below shows the Daily variation of the NNGTS Line Pack, as well as the delimitation of the Line Pack for the Year 2022, 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.

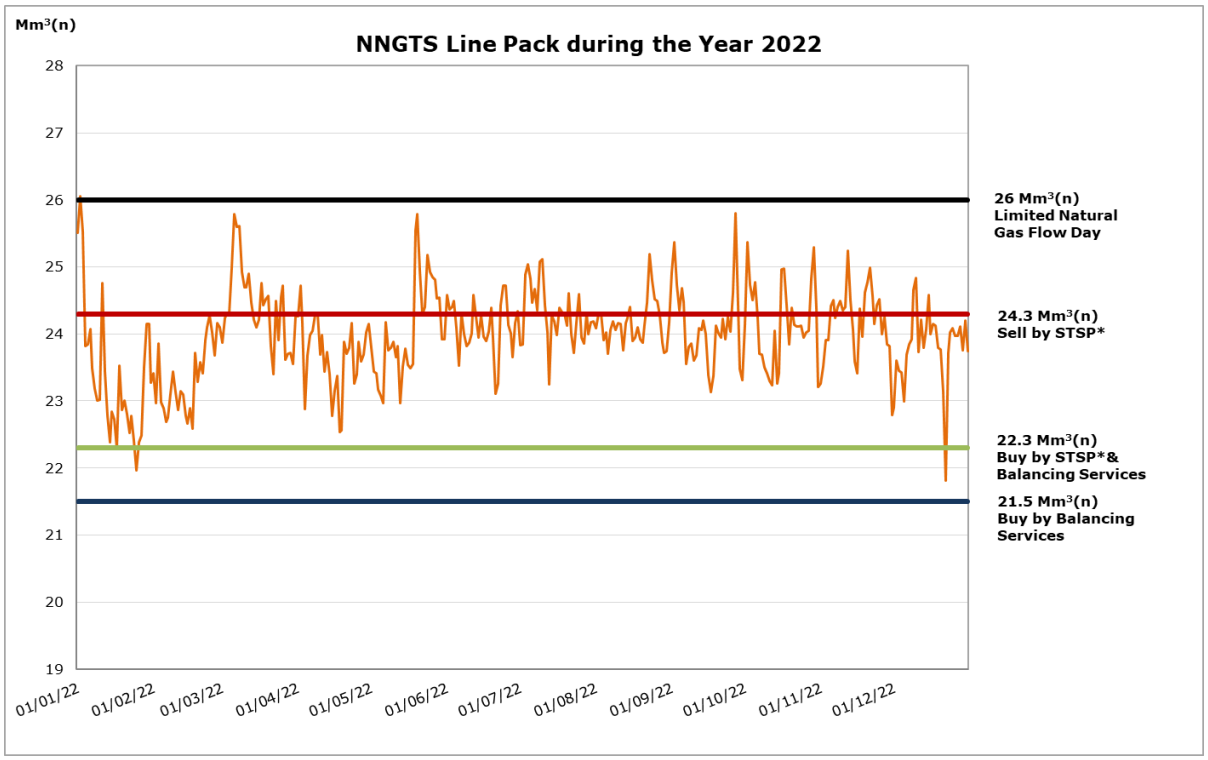

Diagram 7

2.9.3 Total Daily LNG Stock

Through the Entry Point 'AGIA TRIADA' 38,077 mil. kWh of Natural Gas were injected into the NNGTS (compared to 24,722 mil. kWh during the Year 2021), while the LNG unloads led to 35,105 mil. kWh (compared to 24,515 mil. kWh during the Year 2021).

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 2022.

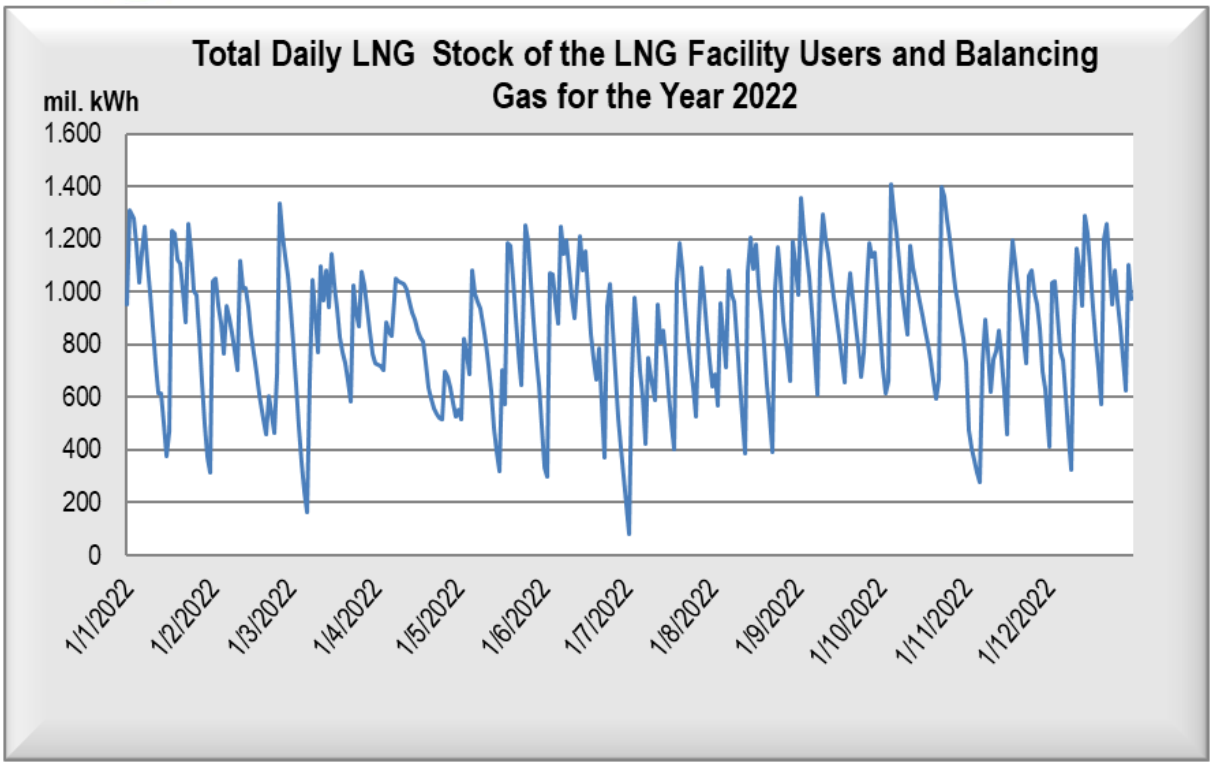

Diagram 8

2.9.4 Historical Operational data of the Compression Station in Nea Mesimvria

The Compression Station in Nea Mesimvria, Thessaloniki, consumed 17,152,615 kWh of Natural Gas as fuel during the Year 2022. The amount corresponds to 62% of the total Operational Gas that was used in the NNGTS during the Year 2022, which amounts to 27,583,301 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 2022.

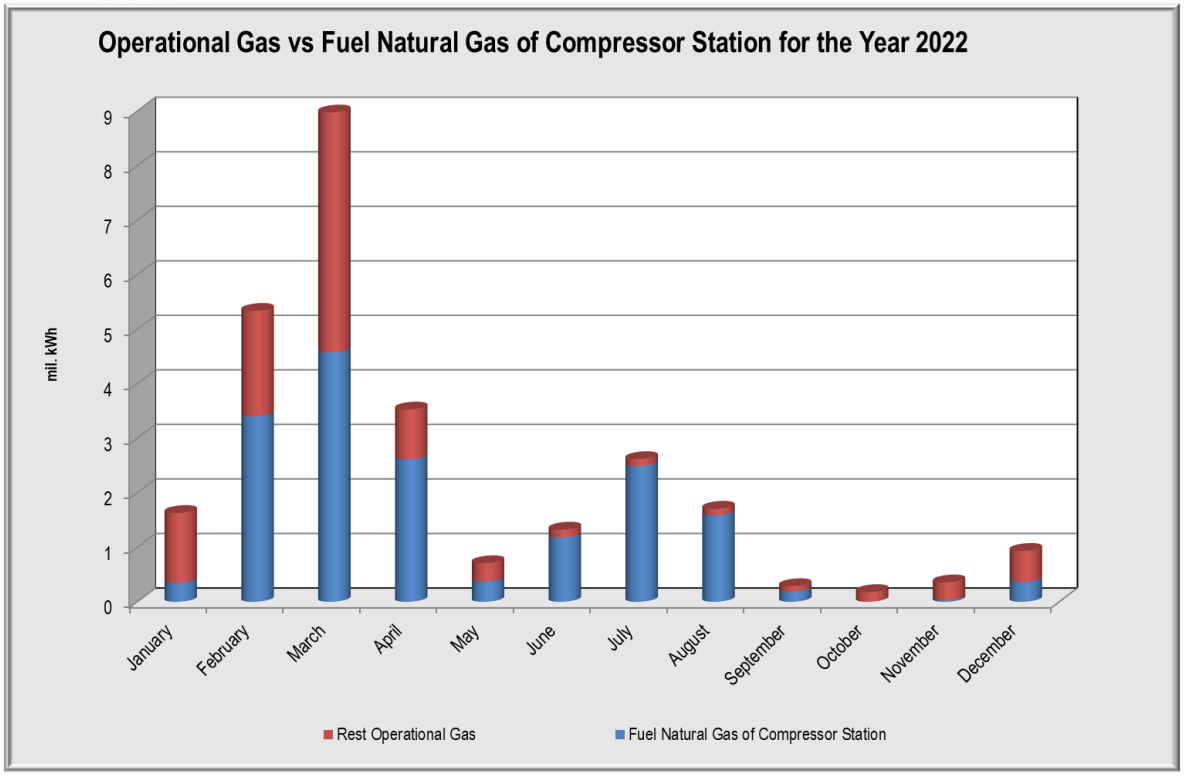

Diagram 9

Diagram 10 below shows the Natural Gas quantity that was handled by the Compression Station on a Monthly basis during the Year 2022.

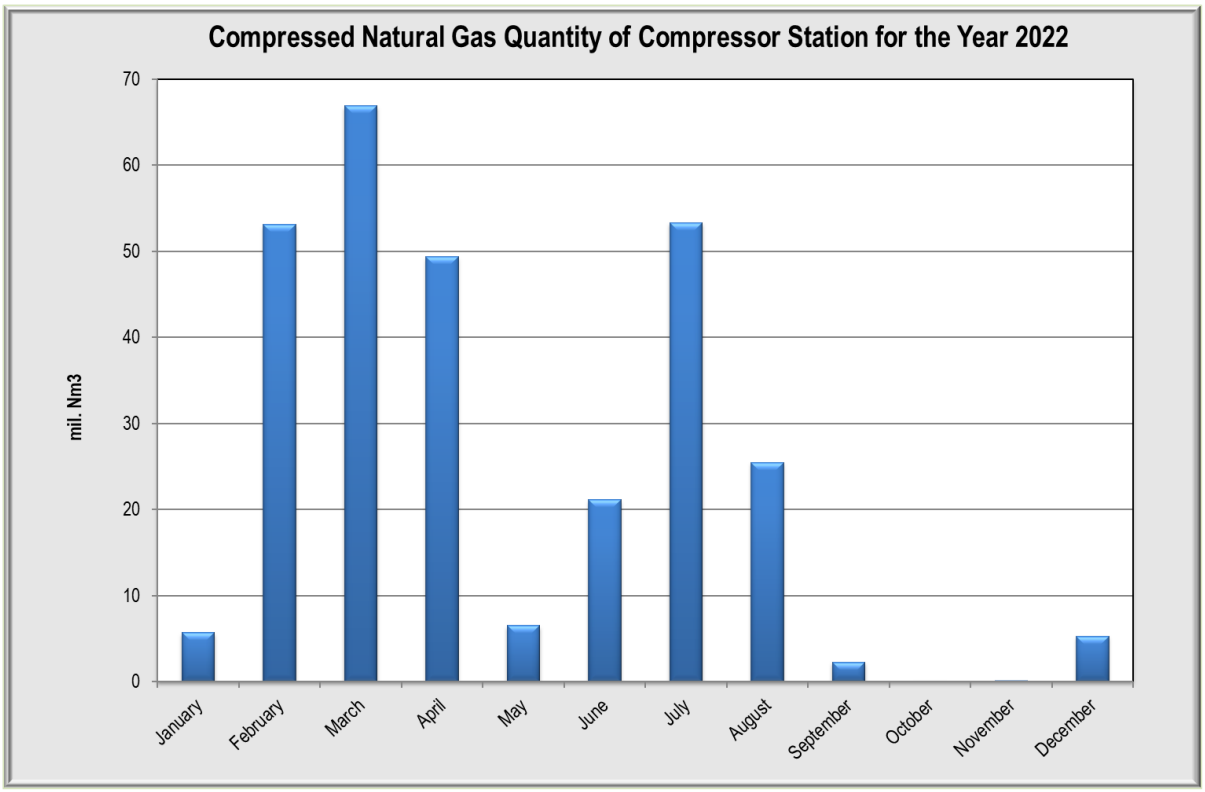

Diagram 10

2.9.5 Natural Gas out of specifications during the Year 2022

During the Year 2022, the average Daily Delivery Pressure at the Entry Point 'SIDIROKASTRO' was lower than the Minimum Entry Pressure (47.75 barg) for thirteen (13) 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 2022, the following incidents occurred where the Natural Gas was out of the quality specifications, as these are specified in Annex I of the NNGS Network Code:

1. The Natural Gas temperature off-taken at the Exit Point 'ALOYMINION III' was for two (2) Days lower than the minimum limit (-5 ^{o}C).

2. The Natural Gas temperature off-taken at the Exit Point 'MEGALOPOLI' was for one (1) Day lower than the minimum limit (-5 ^{o}C).