

MONTHLY DAS TRADING SYSTEM REPORT

MAY 2019

TABLE OF CONTENTS

Monthly Report Highlights	2
1. Participation in DAS	4
1.1 Participants Register	4
1.2 Generation Units in Interconnected System	6
2. System Marginal Price (SMP) and Reserves Prices.....	10
3. DAS Energy Balance	16
4. Domestic Power Generation	18
4.1 Production and Credit per fuel type	18
4.2 Production and Credits per Participant.....	22
4.3 Production per Participant, fuel type and operation status	25
4.4 Production and Credits per Unit.....	26
5. Supply of Electricity	28
5.1 Load Declarations and Debits	28
5.2 Analysis on Supply per Participant, Load Zone and Voltage Level	30
6. Electricity Trading.....	32
6.1 Imports.....	32
6.2 Exports	33
6.3 Electricity Transit	34
6.4 Net Position of Interconnections Balance	35
6.5 Analysis on Trading per Participant and Interconnection.....	36
6.6 Wrong Direction Energy Flows	37

Monthly Report Highlights

Participation in DAS

- In Participants' Register for month May 2019, there were: **65** Participants from which **52** were active during the month: **7** Producers, **32** Suppliers and **16** Traders.

System Marginal Price (SMP) and Reserves Prices

- The average SMP for May was 3,51 €/MWh **higher** than the SMP of the previous month, 0,79 €/MWh **lower** than the average of the last twelve months but significantly **higher** (+9,59 €/MWh) comparing to the same month of the previous year.
- The clearing price of the Secondary Up Reserve exceeded 10 €/MW for 5 hours.
- Natural Gas Units defined the SMP for the **60,22%** of total hours in May.

DAS Energy Balance

- For month May, Domestic Demand constitutes the **94,5%** of total monthly Load, Exports the **5,3%** and Pumping the **0,2%**. Injections from Imports covered **30,4%** of the monthly Load, Generation from Natural Gas Units the **26,3%**, Lignite Units the **18,3%**, RES the **20,1%** and Hydro Production the **4,9%**.
- In May 2019, the **higher** -in the last 3 years- monthly amount of imports from the Interconnection with FYROM were scheduled.
- Comparing to May 2018, *Imports* increased by **47%** while *Lignite* and *Hydro Generation* decreased significantly (**-34%** and **-38%** respectively). *RES* and *Natural Gas Units Generation* decreased slightly (**-6%** and **-1%** respectively).
- Electricity demand decreased by **3%** relatively to May 2018 demand. The highest load appeared at 13:00 28/05/2019 (**6403** MW / SMP 71,916 €/MWh) while the lowest load was **3156** MW (SMP 63,121 €/MWh) at 05:00 01/05/2019.
- The monthly DAS value for May reached **262,6 MEUR** while the daily average DAS value was **8,4 MEUR**.

Domestic Power Generation

- *Monthly Production Shares per fuel type* for May were: *Natural Gas Units* **37,74%**, *RES* **28,85%** and *Lignite Units* **26,30%**. Concerning Market Participants, the respective shares were: *PPC* **39,14%**, *DAPEEP* **28,85%** and *KORINTHOS POWER* **9,03%**.

Supply of Electricity

- The daily average load for May was **120.747 MWh**.
- The monthly consumption share of PPC in May was **73,90%** (High Voltage: 13,50%, Medium Voltage: 11,28%, Low Voltage: 49,12%). The second higher consumption share belongs to *MYTILINEOS* **5,20%** (HV: 0,01%, MV: 3,09%, LV: 2,10%) and the third to *HERON* **5,18%** (HV: 0,00%, MV: 2,66%, LV: 2,52%). The relevant numbers for the previous month were *PPC*: 75,82%, *MYTILINEOS*: 4,82% and *HERON*: 4,79%.

Electricity Trading

- Total energy injections from Imports amounted **1.201 GWh** while Exports reached **210 GWh**. The 60% of total Exports were scheduled from the Interconnection with Italy.

- For the Interconnection with Italy, wrong direction energy flows were scheduled for **590 hours** (79% of total month hours) while for the Interconnection with Bulgaria wrong direction energy flows were scheduled for **107 hours** (14% of total month hours).

1. Participation in DAS

1.1 Participants Register

The following tables present the registered Participants from the Participants' Register at the end of the month. Participants who participated in DAS during the month with the specific Participant Type which is stated at the top of each table are indicated with blue color.

Producers

S/N	PARTICIPANT NAME	ABBREVIATION
1	ELPEDISON ΠΑΡΑΓΩΓΗ ΗΛΕΚΤΡΙΚΗΣ ΕΝΕΡΓΕΙΑΣ Α.Ε.	ELPEDISON
2	ΔΗΜΟΣΙΑ ΕΠΙΧΕΙΡΗΣΗ ΗΛΕΚΤΡΙΣΜΟΥ Α.Ε.	PPC
3	ΗΡΩΝ II ΒΟΙΩΤΙΑΣ Α.Ε.	HERON_II_VIOTIAS
4	ΗΡΩΝ ΘΕΡΜΟΗΛΕΚΤΡΙΚΗ Α.Ε.	HERON
5	ΚΟΡΙΝΘΟΣ POWER Α.Ε.	KORINTHOS_POWER
6*	ΛΙΓΝΙΤΙΚΗ ΜΕΓΑΛΟΠΟΛΗΣ Α.Ε.	LIG_MEGALOPOLIS
7	ΛΙΓΝΙΤΙΚΗ ΜΕΛΙΤΗΣ Α.Ε.	LIG_MELITIS
8	ΜΥΤΙΛΗΝΑΙΟΣ ΑΝΩΝΥΜΟΣ ΕΤΑΙΡΕΙΑ – ΟΜΙΛΟΣ ΕΠΙΧΕΙΡΗΣΕΩΝ	MYTILINEOS

* LIG_MEGALOPOLIS, holder of production license, participated also in DAS as Supplier for serving the auxiliary loads of its generation units.

The RES and GOs Operator S.A. (DAPEEP) participated in DAS as a “Producer”, as the credits for the RES production are transferred to the RES Special Account of Article 40 of Law 2773/1999.

Suppliers

S/N	PARTICIPANT NAME	ABBREVIATION
1*	ALPIQ ENERGY SE	ALPIQ_ENERGY
2	ECONOMIC GROWTH A.E.	GROWTH
3	EDELWEISS ENERGIA S.P.A.	EDELWEISS
4*	ELECTRADE S.P.A.	ELECTRADE SPA
5*	ELPEDISON ΠΑΡΑΓΩΓΗ ΗΛΕΚΤΡΙΚΗΣ ΕΝΕΡΓΕΙΑΣ Α.Ε.	ELPEDISON
6	ENEL GREEN POWER HELLAS ΠΡΟΜΗΘΕΙΑ Α.Ε.	EGPH_SUPPLY
7	EUNICE TRADING A.E.	EUNICE_TRADING
8*	EVN TRADING SOUTH EAST EUROPE EAD	EVN_TRADING_SEE
9*	GEN-I ATHENS Μ.Ε.Π.Ε. (SM LLC)	GEN-I-ATHENS
10*	GREEK ENVIRONMENTAL & ENERGY NETWORK A.E.	GREENENV
11	GREENSTEEL-CEDALION COMMODITIES A.E.	GREENSTEEL
12	NOVAERA ENERGY A.E.	NOVAERA_ENERGY
13*	NRG TRADING HOUSE S.A.	NRG_TRADING_HOUS
14	NECO A.E.	NECO_HELLAS
15*	PROTERGIA ΘΕΡΜΟΗΛΕΚΤΡΙΚΗ Α.Ε.	PROTERGIA_THER
16	SOLAR ENERGY	SOLARENERGY
17*	VOLTERRA A.E.	VOLTERRA
18*	VOLTON ΕΛΛΗΝΙΚΗ ΕΝΕΡΓΕΙΑΚΗ Α.Ε.	VOLTON
19*	WATT AND VOLT A.E.	WATT_AND_VOLT
20	ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ ΤΣΙΜΕΝΤΩΝ TITAN	TITAN
21*	BIENER A.E. ΕΝΕΡΓΕΙΑΚΕΣ ΕΠΙΧΕΙΡΗΣΕΙΣ Α.Ε.	VIENER
22	BIOΛAR A.E.	VIOLAR
23*	ΔΗΜΟΣΙΑ ΕΠΙΧΕΙΡΗΣΗ ΗΛΕΚΤΡΙΣΜΟΥ Α.Ε.	PPC
24	ΕΛΙΝΟΙΛ ΕΛΛΗΝΙΚΗ ΕΤΑΙΡΙΑ ΠΕΤΡΕΛΑΙΩΝ Α.Ε.	ELINOIL
25	ΕΛΛΗΝΙΚΑ ΤΑΧΥΔΡΟΜΕΙΑ Α.Ε.	ELTA
26	ZENIO GAS & LIGHT	EPA_THESS
27*	ΗΛΕΚΤΡΟΠΑΡΑΓΩΓΗ ΣΟΥΣΑΚΙΟΥ Α.Ε.	SUSAKI_POWER
28*	ΗΡΩΝ ΘΕΡΜΟΗΛΕΚΤΡΙΚΗ Α.Ε.	HERON
29*	ΙΝΤΕΡΜΠΕΤΟΝ – ΔΟΜΙΚΑ ΥΛΙΚΑ Α.Ε.	INTERBETON
30*	ΚΕΝ ΠΑΡΑΓΩΓΗ ΚΑΙ ΕΜΠΟΡΙΑ ΕΝΕΡΓΕΙΑΚΩΝ ΠΡΟΪΟΝΤΩΝ Α.Ε.	KEN
31	ΚΩΝΣΤΑΝΤΙΝΟΣ Β. ΜΑΡΚΟΥ Α.Β.Ε.Ε.	KVMARKOUSA
32	ΜΟΤΟΡ ΟΙΛ (ΕΛΛΑΣ) ΔΙΥΛΙΣΤΗΡΙΑ ΚΟΡΙΝΘΟΥ ΑΕ	MOH
33*	ΜΥΤΙΛΗΝΑΙΟΣ Α.Ε. – ΟΜΙΛΟΣ ΕΠΙΧΕΙΡΗΣΕΩΝ	MYTILINEOS

34	ΟΤΕ ΑΚΙΝΗΤΑ Α.Ε.	OTEESTATE
35	ΠΕΤΡΟΓΚΑΖ ΕΛΛΗΝΙΚΗ ΕΤΑΙΡΙΑ ΥΓΡΑΕΡΙΩΝ, ΒΙΟΜΗΧΑΝΙΚΩΝ ΠΡΟΪΟΝΤΩΝ & ΓΕΝΙΚΩΝ ΕΠΙΧΕΙΡΗΣΕΩΝ Α.Ε.	PETROGAZSA
36	ΠΡΟΜΗΘΕΥΤΗΣ ΚΑΘΟΛΙΚΗΣ ΥΠΗΡΕΣΙΑΣ	PPC_USS
37	ΠΡΟΜΗΘΕΥΤΗΣ ΤΕΛΕΥΤΑΙΟΥ ΚΑΤΑΦΥΓΙΟΥ	PPC_LRS
38	ΦΥΣΙΚΟ ΑΕΡΙΟ-ΕΛΛΗΝΙΚΗ ΕΤΑΙΡΕΙΑ ΕΝΕΡΓΕΙΑΣ	ATTIKI_GSC

* Participants who are holders of supply license, participated in DAS as Traders.

Traders

S/N	PARTICIPANT NAME	ABBREVIATION
1	ALPIQ ENERGY HELLAS A.E.	ALPIQ_HELLAS
2	AYEN ENERGIJA D.O.O.	AYEN_ENERGIJA
3	AXPO ENERGY ROMANIA S.A.	AXPO_ROMANIA
4	CEZ A.S.	CEZ_A.S.
5	DANSKE COMMODITIES A/S	DANSKECOM
6	DUFERCO ENERGIA S.P.A.	DUFERCO
7	EDISON S.P.A	EDISON_TRADING
8	EDF TRADING LIMITED	EDF_TRADING_LTD
9	ELEKTRICNI FINANCNI TIM D.O.O.	EFT_SLOVENIA
10	ENEL TRADE S.P.A.	ENEL_TRADE
11	ENERGY MT EAD	ENERGY_MT_EAD
12	ENSCO S.A.	ENSCO_ENERGY
13	EZPADA S.R.O.	EZPADA
14	GAZPROM MARKETING & TRADING LIMITED	GAZPROM
15	GROUP TRANS ENERGY OOD	GT_ENERGY
16	HSE D.O.O.	HSE
17	INTERENERGO D.O.O.	INTERENERGO
18	LE TRADING A.S.	LE TRADING
19	NVALUE A.G.	NVALUE
20	SENTRADE A.E.	SENTRADE
21	VITOL GAS AND POWER B.V.	VITOL
22	ΣΟΛΑΡΙΣ ΕΝΕΡΓΕΙΑΚΗ Α.Ε.	SOLARIS
23	ΤΕΡΝΑ ΕΝΕΡΓΕΙΑΚΗ ΑΒΕΤΕ	TERNA_ENERGY

1.2 Generation Units in Interconnected System

	UNIT	OWNER	INSTALLED CAPACITY (MW)
Lignite Units	AG. DIMITRIOS I	PPC	274.0
	AG. DIMITRIOS II	PPC	274.0
	AG. DIMITRIOS III	PPC	283.0
	AG. DIMITRIOS IV	PPC	283.0
	AG. DIMITRIOS V	PPC	342.0
	AMYNDEO I	PPC	273.0
	AMYNDEO II	PPC	273.0
	MELITI	LIG_MELITIS	289.0
	KARDIA I	PPC	271.1
	KARDIA II	PPC	270.8
	KARDIA III	PPC	280.0
	KARDIA IV	PPC	280.0
	MEGALOPOLI III	LIG_MEGALOPOLIS	255.0
	MEGALOPOLI IV	LIG_MEGALOPOLIS	256.0
	Total of Lignite Units		3,903.9
Natural Gas Units	KOMOTINI	PPC	476.0
	LAVRIO 4	PPC	550.0
	ELPEDISON THESS	ELPEDISON	400.2
	ELPEDISON THISVI	ELPEDISON	410.0
	HERON 1	HERON	49.0
	HERON 2	HERON	49.0
	HERON 3	HERON	49.0
	Subtotal of bi-fuel Natural Gas Units*		1,983.2
	LAVRIO 5	PPC	378.0
	ALIVERI V	PPC	417.0
	MEGALOPOLI V	PPC	500.0
	HERON CC	HERON_II_VIOTIAS	422.0
	PROTERGIA CC	MYTILINEOS	432.7
	KORINTHOS POWER	KORINTHOS POWER	433.4
	ALOUMINIO	MYTILINEOS	334.0
	Total of Natural Gas Units		4,900.3
Hydro Units	AGRAS	PPC	50.0
	ASOMATA	PPC	108.0
	P_AOOU	PPC	210.0
	EDESSAIO	PPC	19.0
	THESAVROS	PPC	384.0
	ILARIONAS	PPC	153.0
	KA STRAKI	PPC	320.0
	KREMASTA	PPC	437.2

MONTHLY DAS TRADING SYSTEM REPORT MAY 2019

	LADONAS	PPC	70.0
	PLASTIRAS	PPC	129.9
	PLATANOVRYSI	PPC	116.0
	POLYFYTO	PPC	375.0
	POURNARI 1	PPC	300.0
	POURNARI 2	PPC	33.6
	STRATOS 1	PPC	150.0
	SFIKIA	PPC	315.0
	Total of Hydro Units		3,170.7
RES	WIND	RES	2,750.5
	PV	RES	2,145.9
	PV ROOFS	RES	351.3
	HYDRO	RES	239.5
	BIOMASS	RES	83.2
	CHP	RES	100.8
	Total of RES Units		5,671.2
	Total of Thermal Units		8,804.2
	Total of RES & Hydro Units		8,841.9
	Total of all Units		17,646.1

Source: DAPEEP, ADMIE

* From Dispatch Day 11/04/2019, Trading System functionalities for the implementation of RAE's Decision 199/2018 were activated. RAE has approved amendments on Power Exchange Code for Electricity (PECE) and System Operation Code regarding the participation of bi-fuel Generation Units in DAS. The bi-fuel Generation Units are the following: KOMOTINI, LAVRIO 4, ELPEDISON THESS, ELPEDISON THISVI, HERON 1, HERON 2, HERON 3.

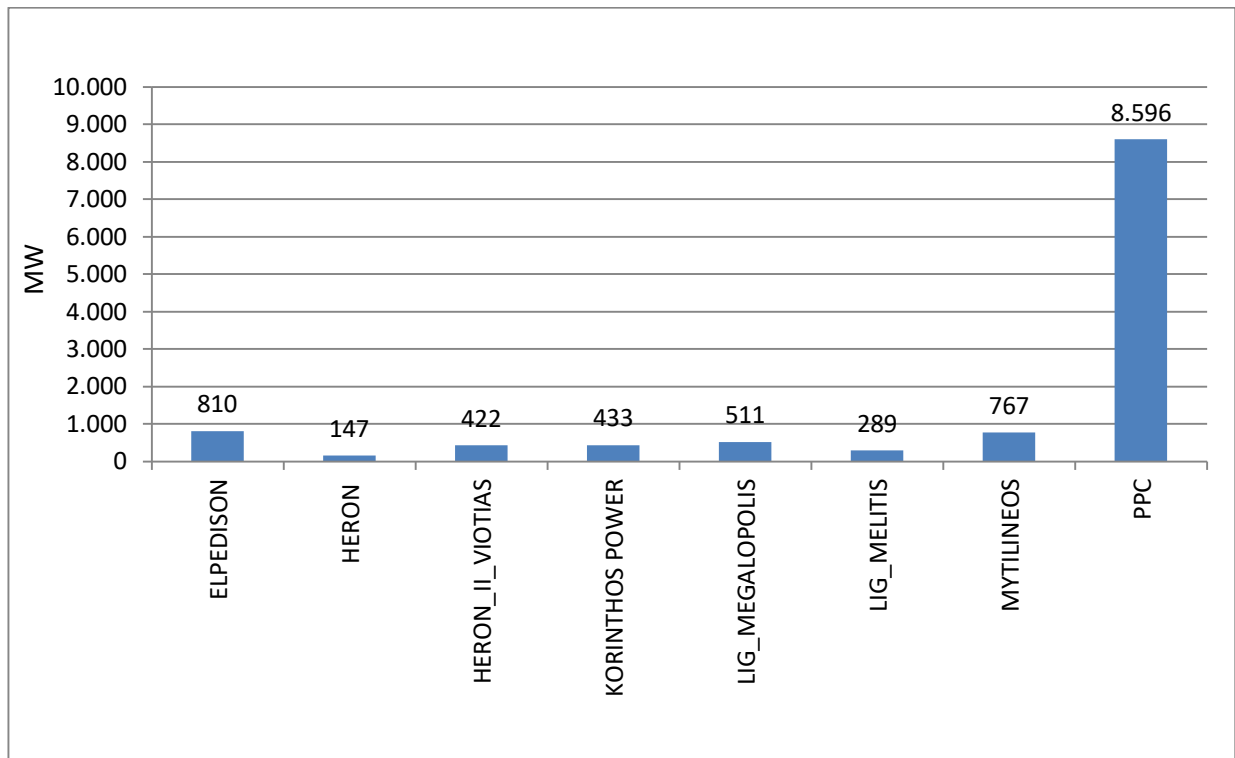


Figure 1: Total Installed Capacity of Units per Producer (RES excluded)

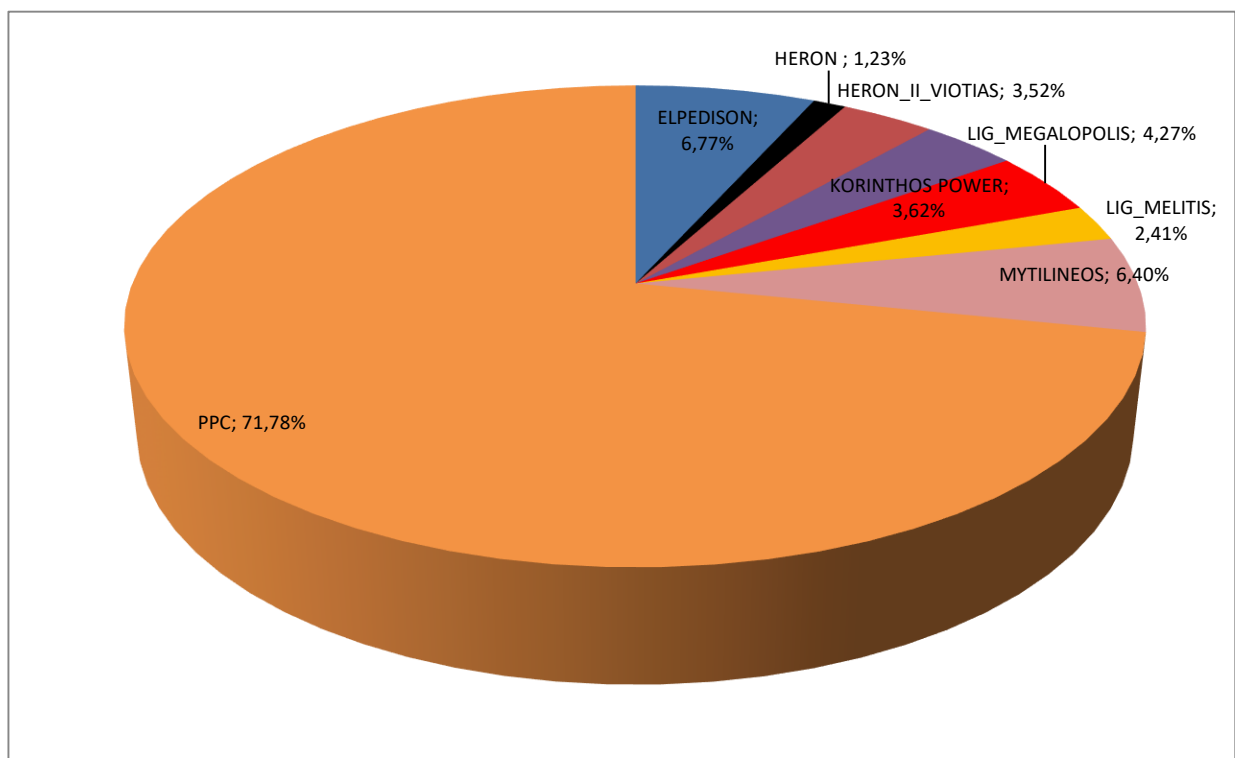


Figure 2: Percentage (%) of Total Installed Capacity per Producer (RES excluded)

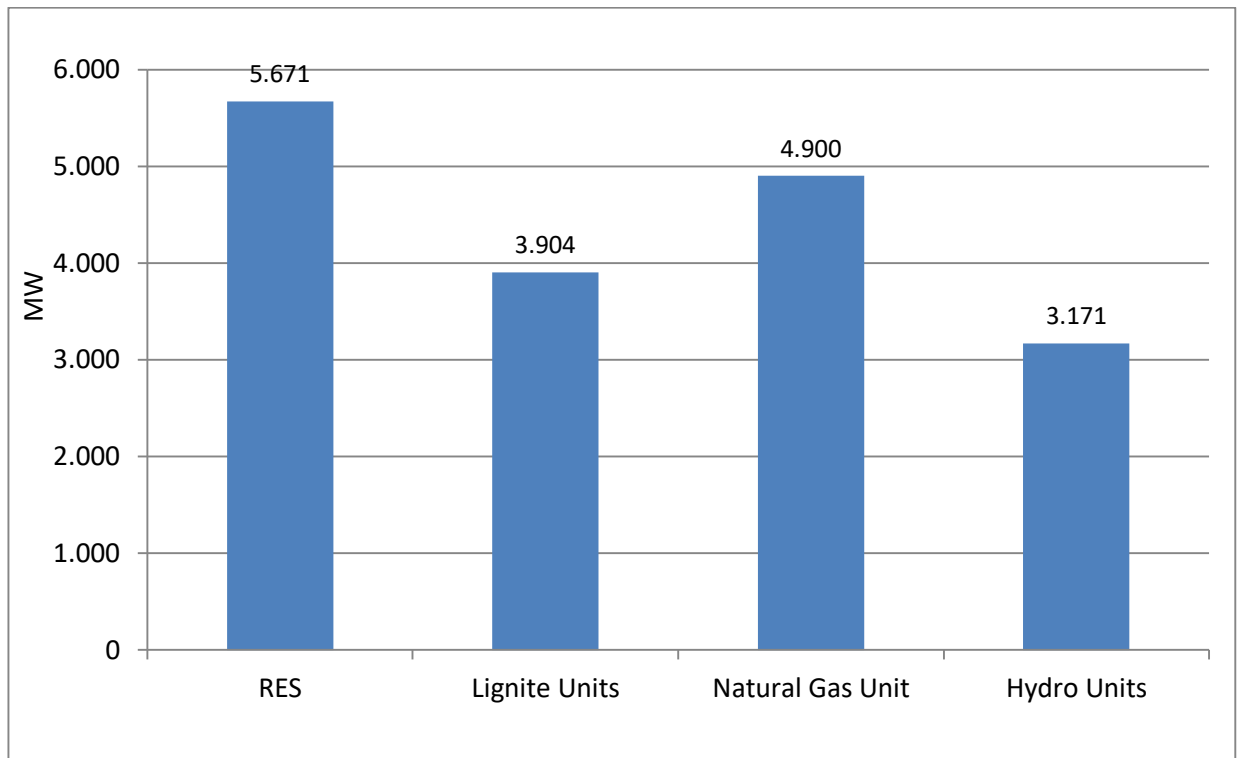


Figure 3: Total Installed Capacity of Units per Fuel type in the Interconnected System

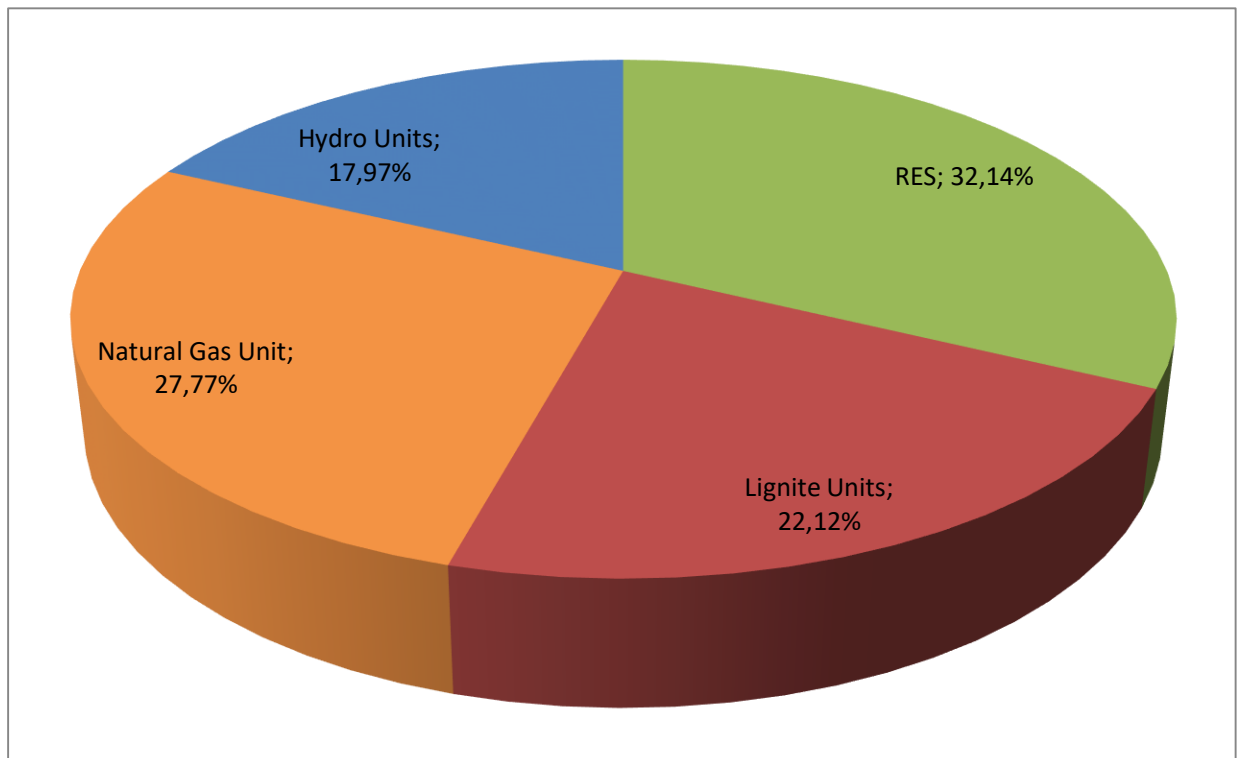


Figure 4: Percentage (%) of total Installed Capacity per Fuel type in the Interconnected System

2. System Marginal Price (SMP) and Reserves Prices

	SMP (€/MWh)	Date	Hour
Minimum	1,000	12/05/2019	16
Maximum	90,040	02/05/2019	11, 14
Average	65,911		

Table 1: SMP data

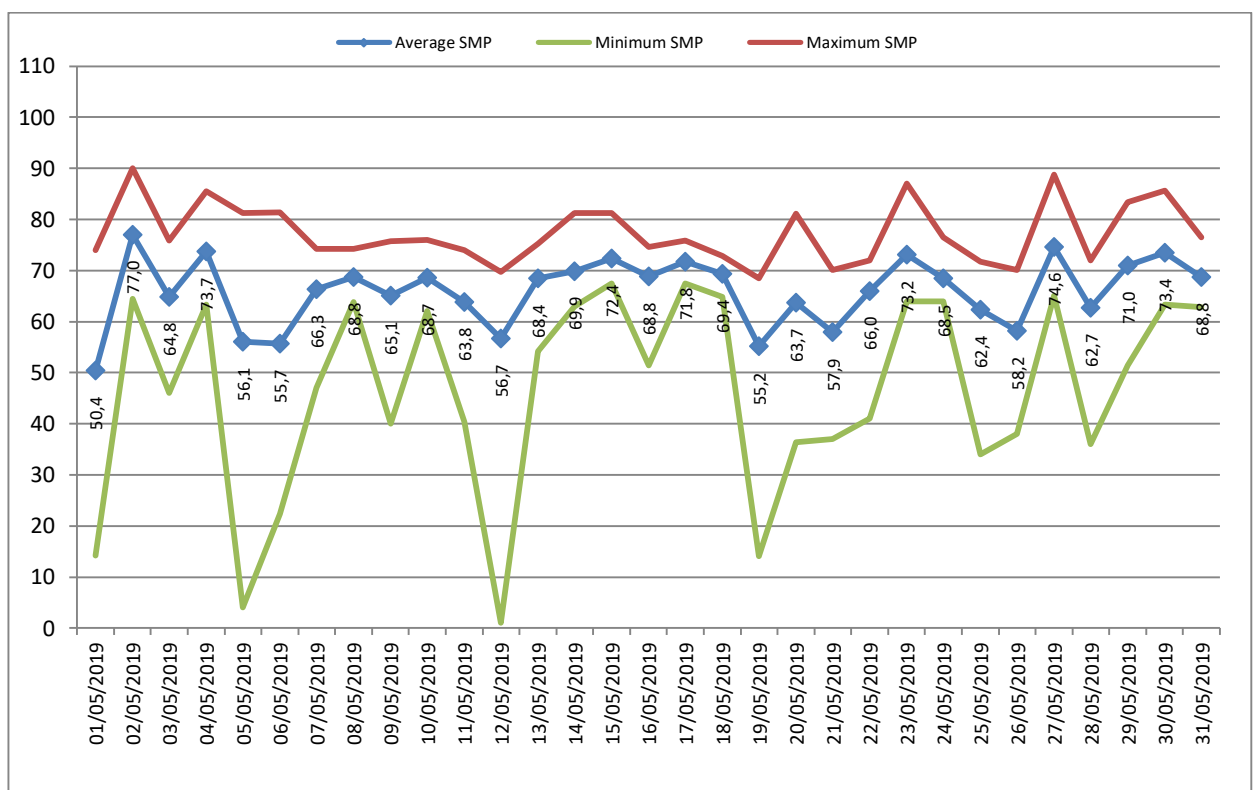


Figure 5: Average, Minimum and Maximum Daily SMP (€/MWh)

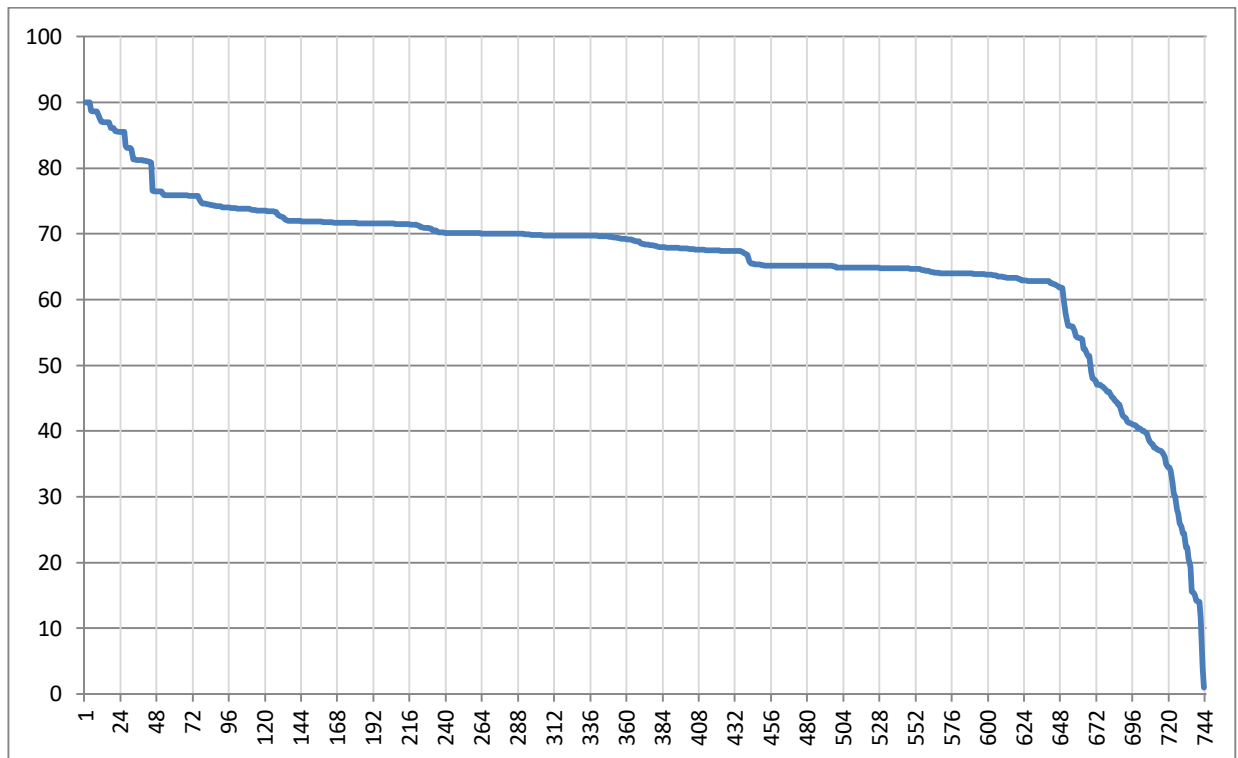


Figure 5a: SMP duration curve (€/MWh)

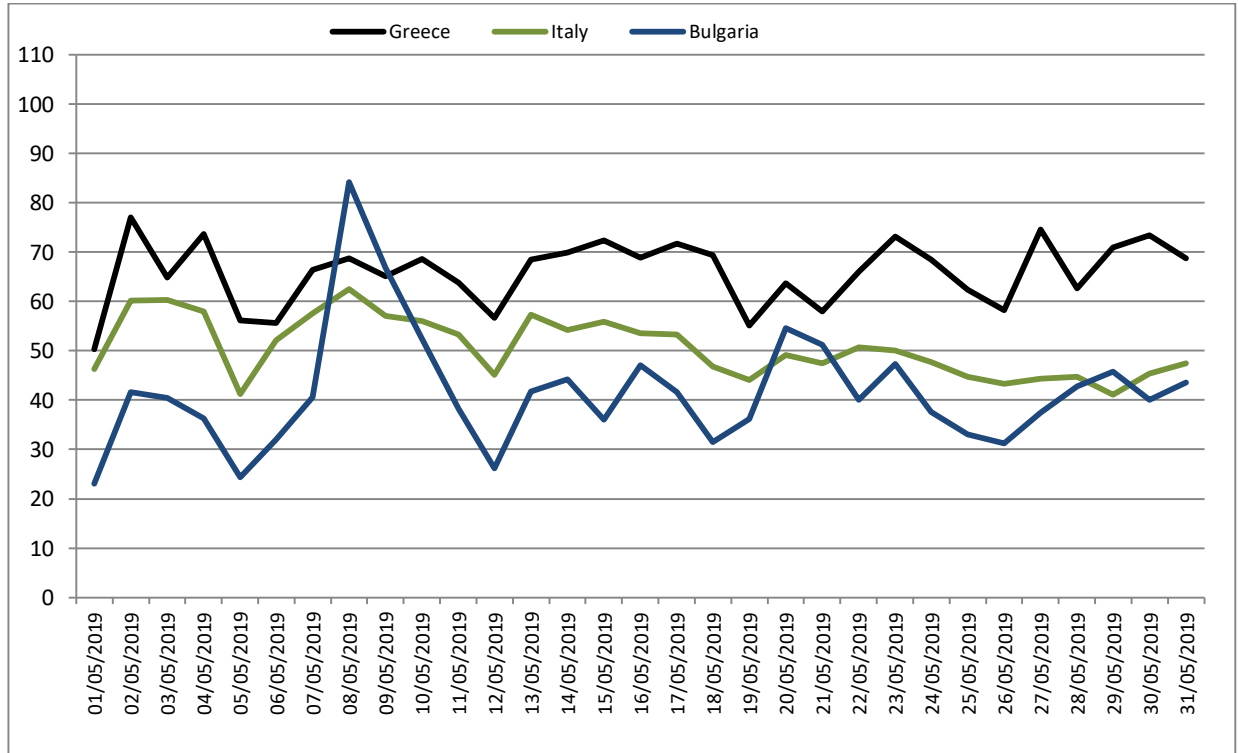


Figure 5b: Daily average marginal energy prices (€/MWh) of Greece, Italy, Bulgaria

MONTHLY DAS TRADING SYSTEM REPORT MAY 2019

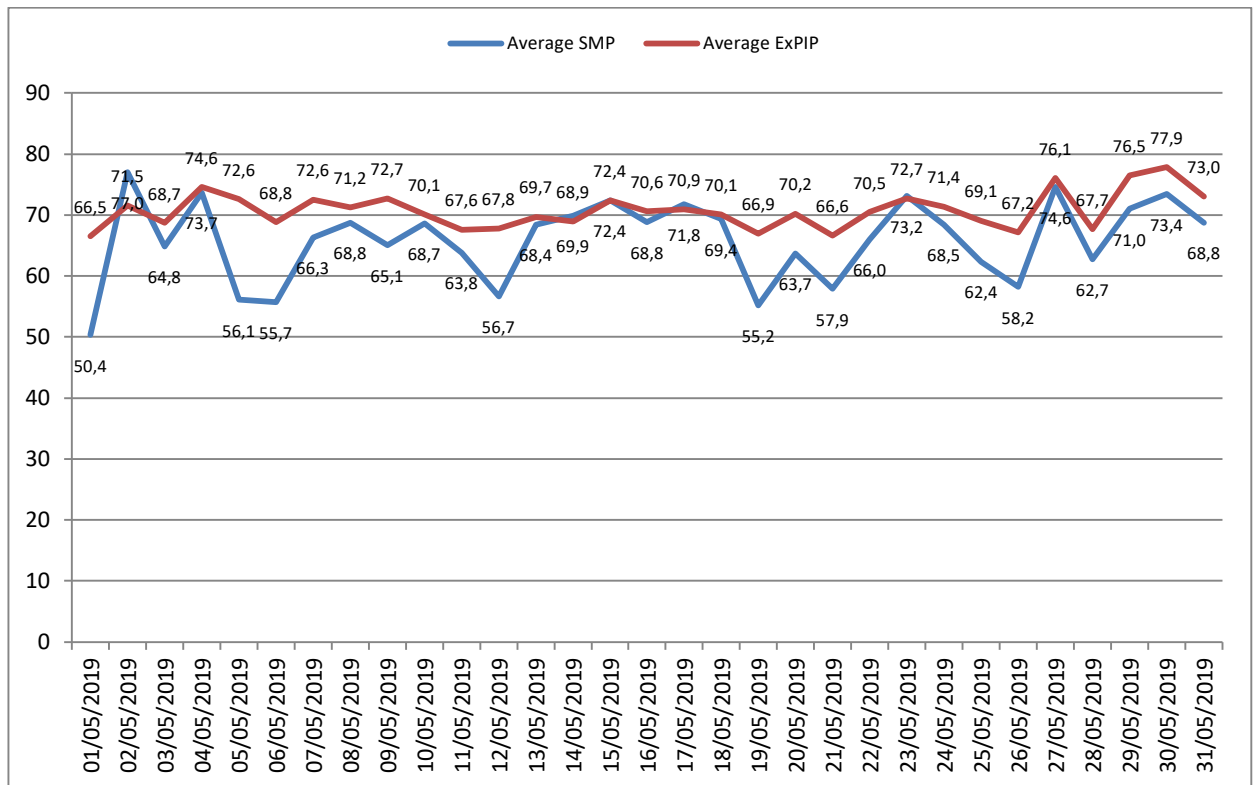


Figure 6: Average Daily SMP and ExPIP

Source: HENEX, ADMIE

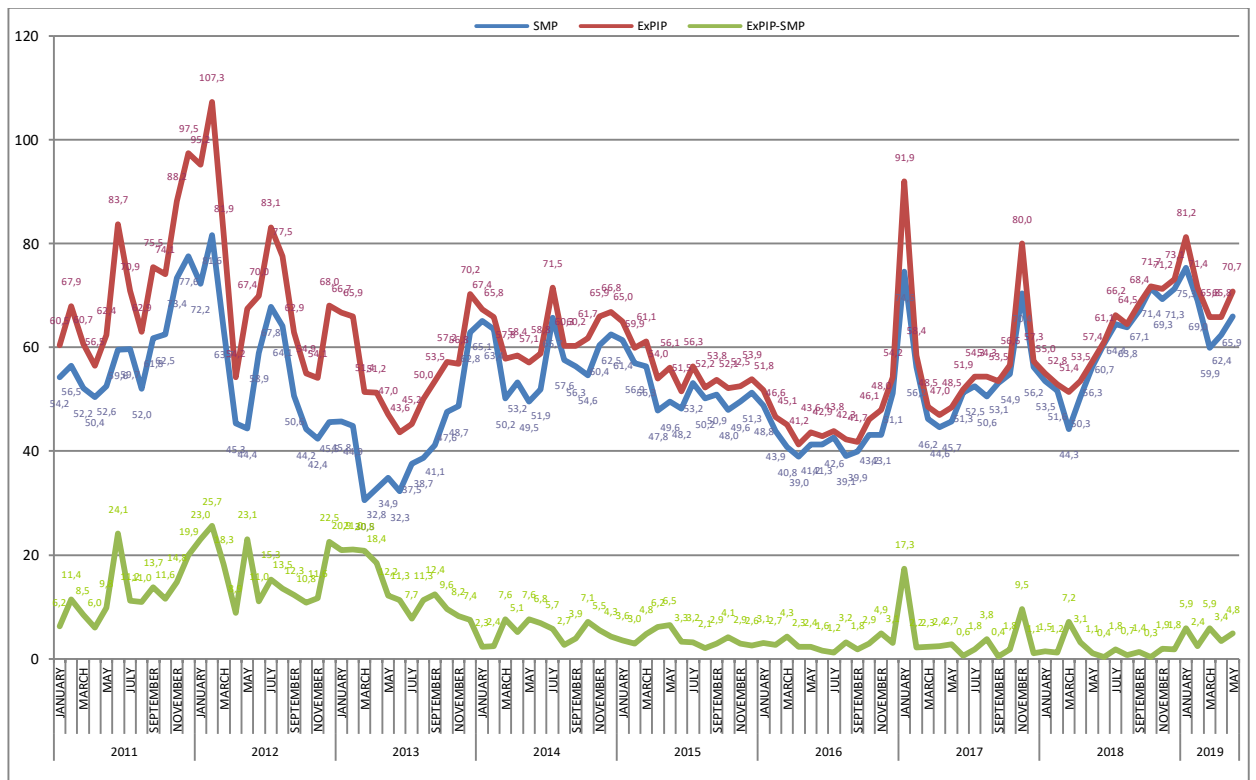


Figure 7: Evolution of average monthly SMP, ExPIP and their difference

Source: HENEX, ADMIE

		Average Monthly SMP		Average Monthly ExPIP		Difference SMP-ExPIP
		€/MWh	% deviation*	€/MWh	% deviation*	€/MWh
2018	January	53,50	-28,28	54,99	-40,17	1,49
	February	51,63	-8,17	52,82	-9,61	1,19
	March	44,28	-4,19	51,44	6,07	7,16
	April	50,35	12,97	53,47	13,81	3,12
	May	56,32	23,15	57,37	18,36	1,05
	June	60,69	18,26	61,07	17,68	0,38
	July	64,42	22,62	66,20	21,87	1,77
	August	63,83	26,23	64,52	18,79	0,69
	September	67,06	26,38	68,43	27,88	1,37
	October	71,40	30,11	71,74	26,68	0,34
	November	69,30	-1,63	71,22	-10,95	1,93
	December	71,25	26,81	73,08	27,48	1,83
2019	January	75,28	40,73	81,21	47,68	5,93
	February	69,01	33,67	71,44	35,26	2,43
	March	59,87	35,19	65,79	27,89	5,93
	April	62,40	23,93	67,29	25,85	4,89
	May	65,91	17,03	70,75	23,31	4,84

Source: HENEX, ADMIE

Table 2: Evolution of average monthly SMP, ExPIP and their difference, as well as the % deviation of average monthly SMP & ExPIP in relation to the same month of the previous year

*The calculation of SMP & ExPIP commenced in the Fifth Reference Day on 30/09/2010

MONTHLY DAS TRADING SYSTEM REPORT MAY 2019

Reserve	Minimum Price (€/MW)	Maximum Price (€/MW)	Date of Maximum Price	Average Price (€/MW)
Primary	0,001	0,003	02/05/2019 04/05/2019	0,001
Secondary Up	0,001	17,000	05/05/2019 31/05/2019	1,736
Secondary Down	0,001	8,020	10/05/2019	1,530

Table 2a: Average, Minimum and Maximum Monthly Reserves Prices

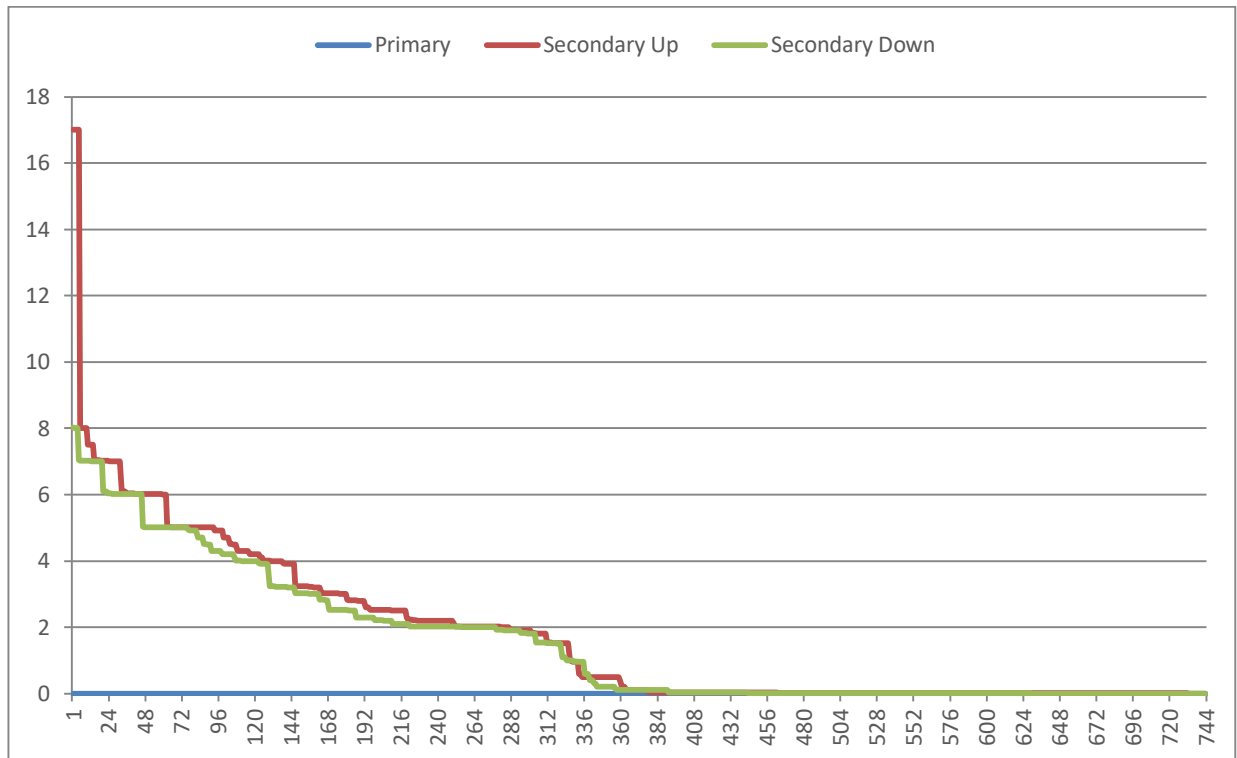


Figure 7a: Duration Curve of Primary, Secondary Up and Secondary Down Reserve Prices (€/MW)

	Lignite	Natural Gas	Hydro	Imports	Exports
Hours/Month	173	448	25	72	26

Table 3: Number of hours for each type of fuel, imports and exports that have defined the SMP

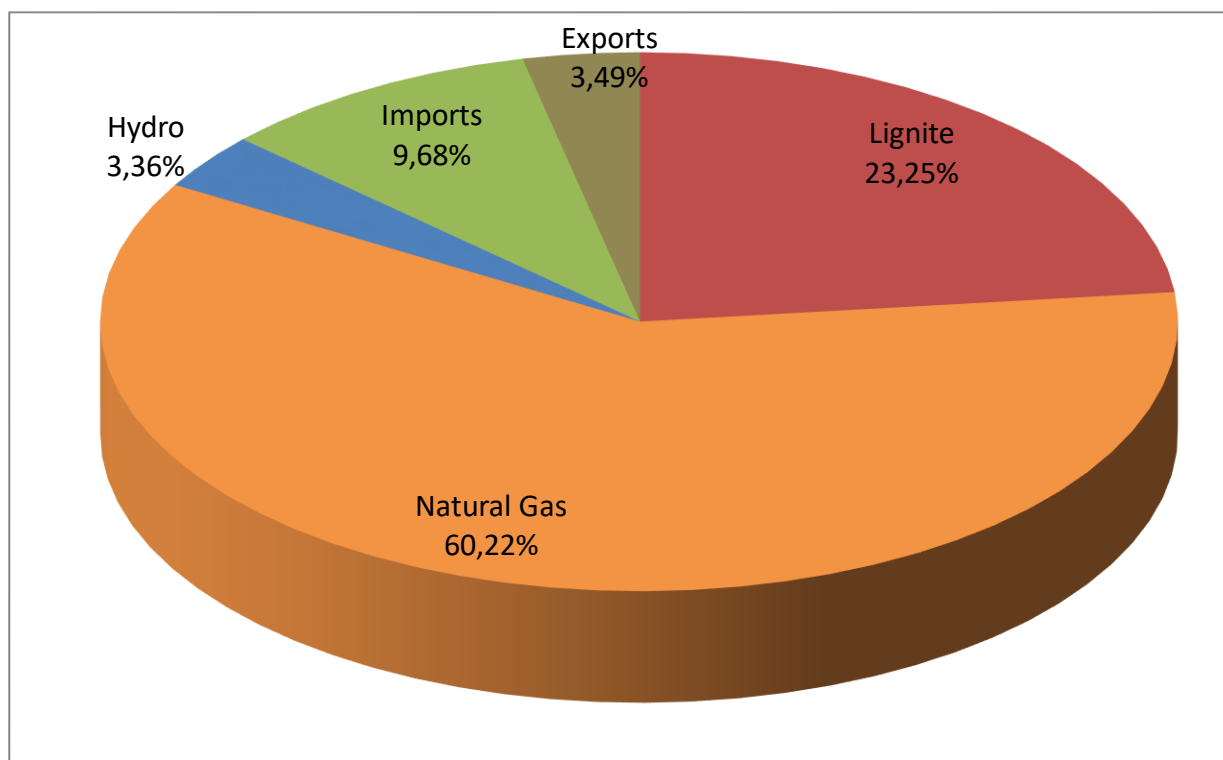


Figure 8: Percentage (%) of total hours per fuel type/imports/exports that have defined the SMP

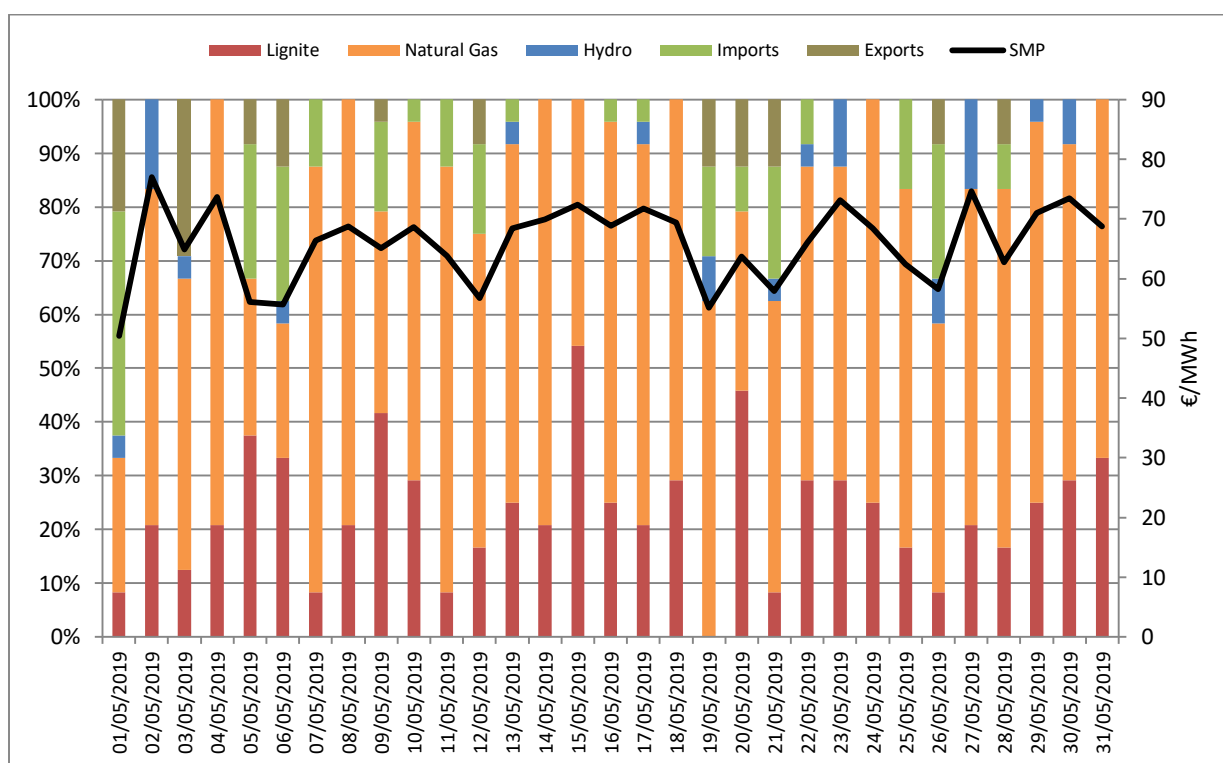


Figure 9: Daily percentage (%) distribution of fuel type/import/export that have defined SMP

3. DAS Energy Balance

	May 2019	% deviation (from 05/2018)	January - May 2019	% deviation (from 01-05/2018)
PRODUCTION AND IMPORTS - EXPORTS BALANCE (MWh)				
TOTAL PRODUCTION & IMPORTS - EXPORTS BALANCE	3,743,159	-3.14	20,869,356	2.06
NET PRODUCTION ANALYSIS				
LIGNITE	723,802	-33.89	4,961,617	-9.42
OIL	0	0.00	0	0.00
NATURAL GAS	1,038,521	-1.41	6,746,267	26.42
HYDRO	195,670	-38.05	945,970	-62.57
RES	793,937	-6.06	4,274,445	2.63
TOTAL NET PRODUCTION	2,751,930	-16.84	16,928,300	-3.30
IMPORTS				
	1,201,753	47.43	5,690,197	29.39
ALBANIA	178,655		786,916	
BULGARIA	292,590		1,381,302	
ITALY	333,767		1,861,159	
F.Y.R.O.M.	323,662		1,330,883	
TURKEY	73,080		329,937	
EXPORTS	210,524	-19.03	1,749,141	20.22
ALBANIA	34,346		362,183	
BULGARIA	759		110,824	
ITALY	126,531		762,751	
F.Y.R.O.M.	48,779		507,883	
TURKEY	110		5,499	
IMPORTS - EXPORTS BALANCE	991,229	78.55	3,941,056	33.93
DEMAND (MWh)				
TOTAL DEMAND	3,743,159	-3.14	20,869,356	2.06
NET DEMAND	3,736,754	-3.27	20,840,291	2.00
PUMPING	6,405	452.18	29,065	63.56
TOTAL DEMAND ANALYSIS				
LOW VOLTAGE CUSTOMERS	2,324,644	-0.05	13,513,955	6.31
MEDIUM VOLTAGE CUSTOMERS	901,262	-10.30	4,806,435	-6.01
HIGH VOLTAGE CUSTOMERS	510,848	-4.08	2,519,901	-3.27
SYSTEM PEAK POWER (MW)				
MAXIMUM HOURLY SYSTEM POWER	6,403	-2.03	8,975	7.22
Date	28/05/2019		07/01/2019	
Hour of maximum	13.00		19:00	

The DAS Energy Balance refers to the Market Point, where the solution of DAS also refers to, in which system losses have already been allocated. According to Chapter 10 of the Power Exchange Code for Electricity, to each Generation Unit Metering point and to each Interconnection Metering point for Import, as well as to each Meter point of the Distribution Network, losses factors are applied, in order to allocate both injected and absorbed power to the Market Points.

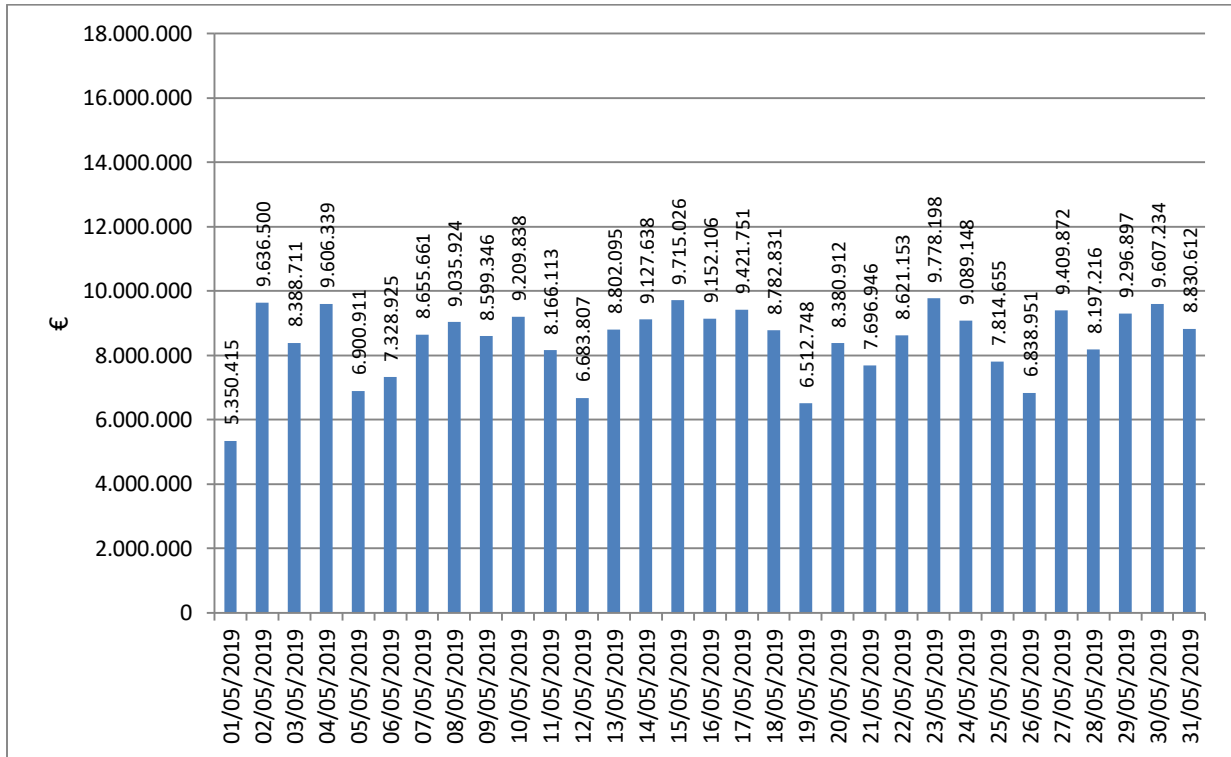


Figure 10: Daily value of DAS

The total value of DAS for May 2019 reached 262,6 M€.

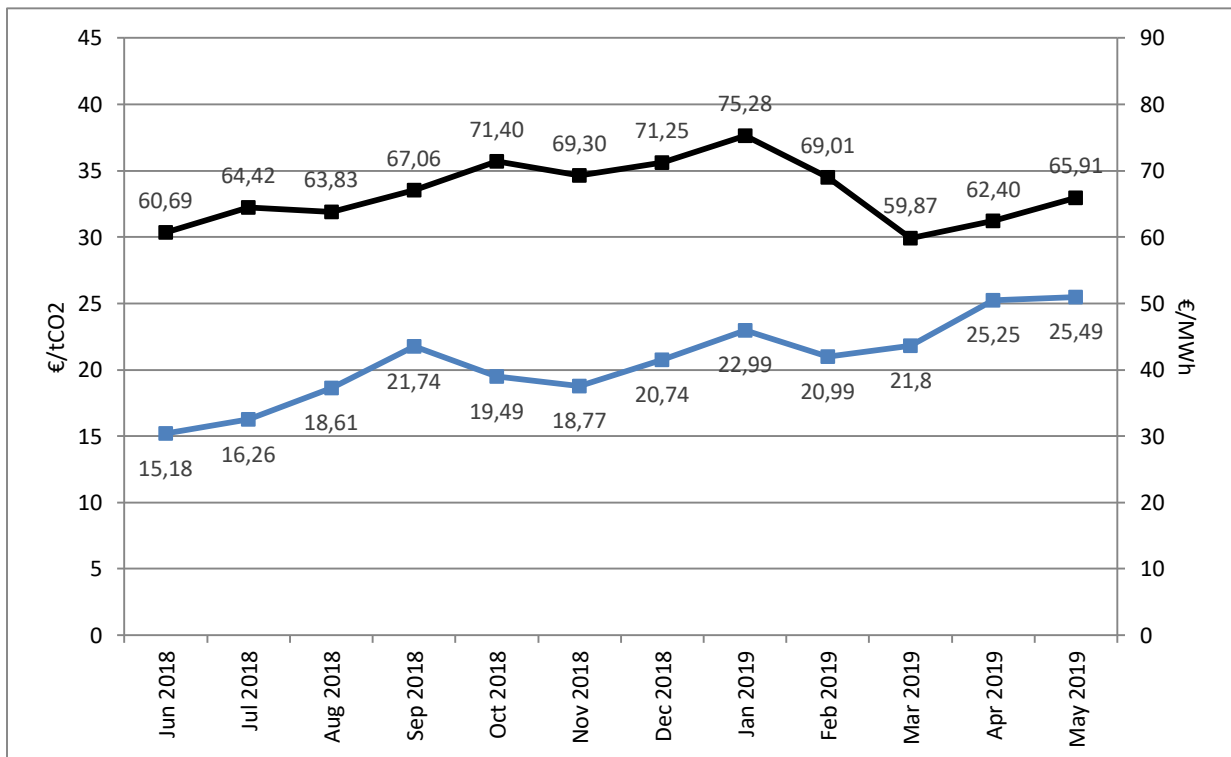


Figure 11: Weighted Average Monthly Prices of CO2 emissions rights (auction T3PA) and SMP (right axis)

Source: DAPEEP

4. Domestic Power Generation

4.1 Production and Credit per fuel type

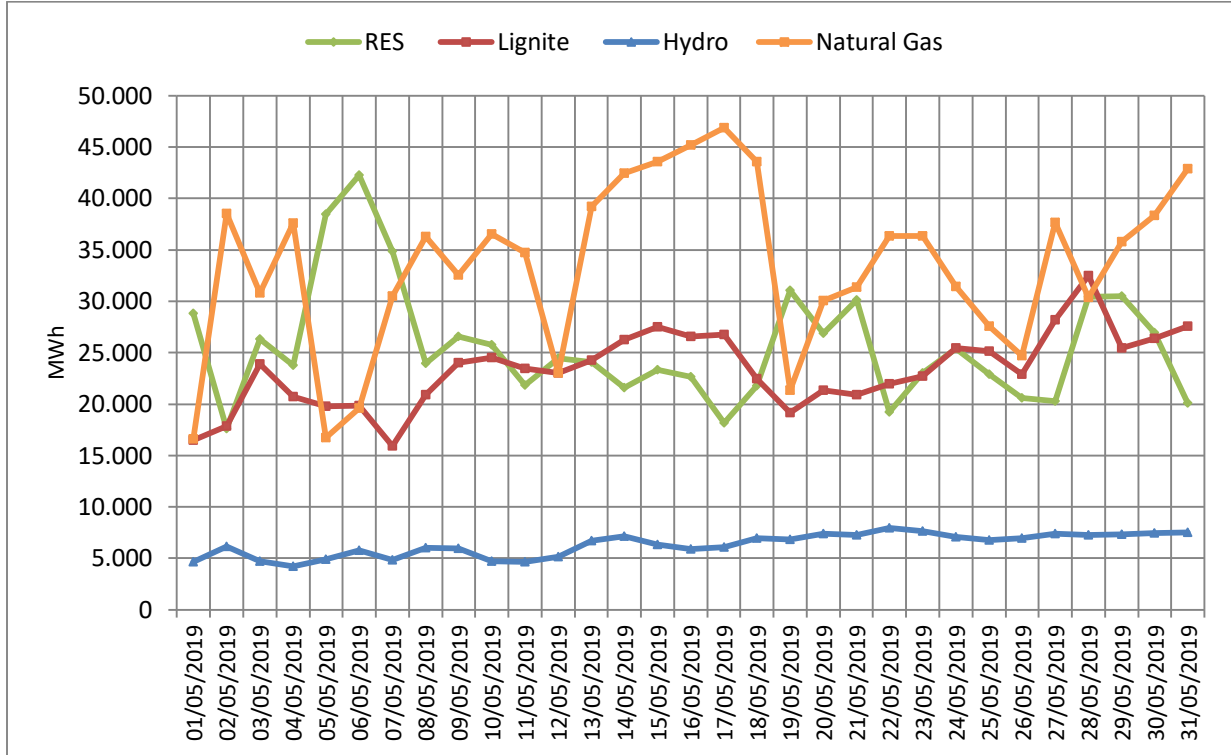


Figure 12: Daily production per fuel type

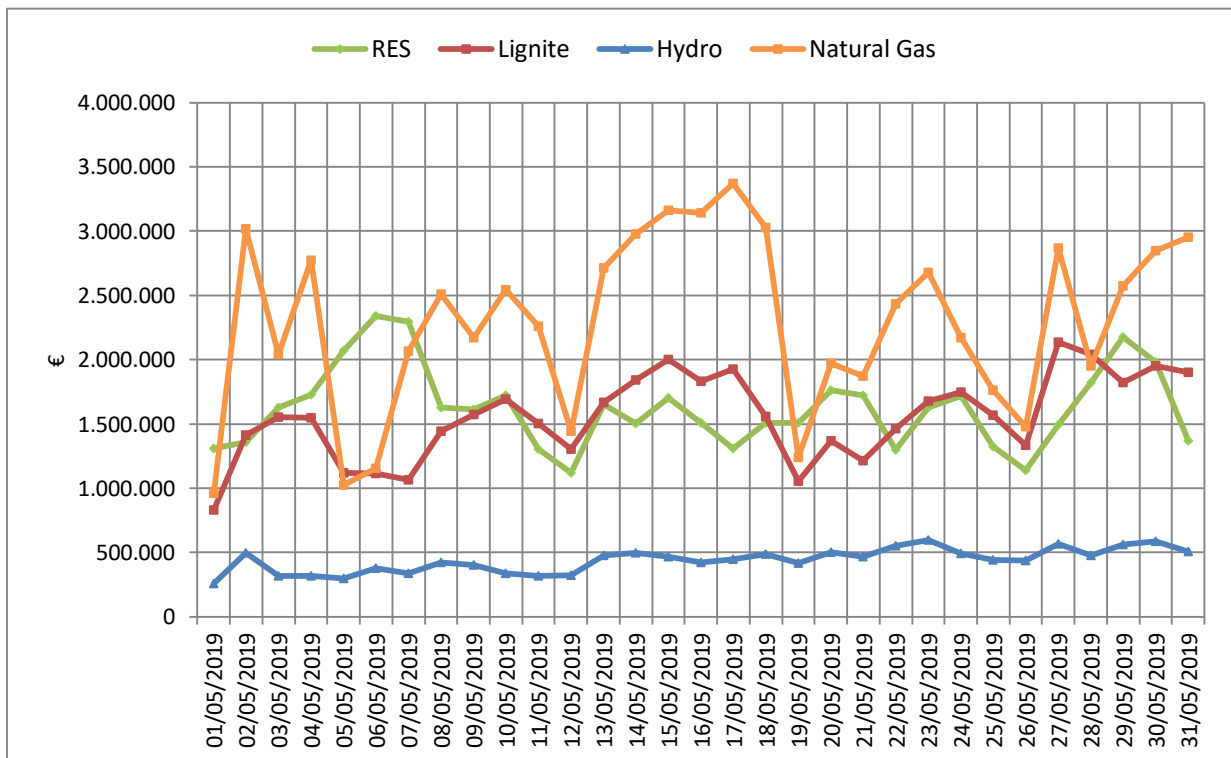


Figure 13: Daily production credit per fuel type

MONTHLY DAS TRADING SYSTEM REPORT MAY 2019

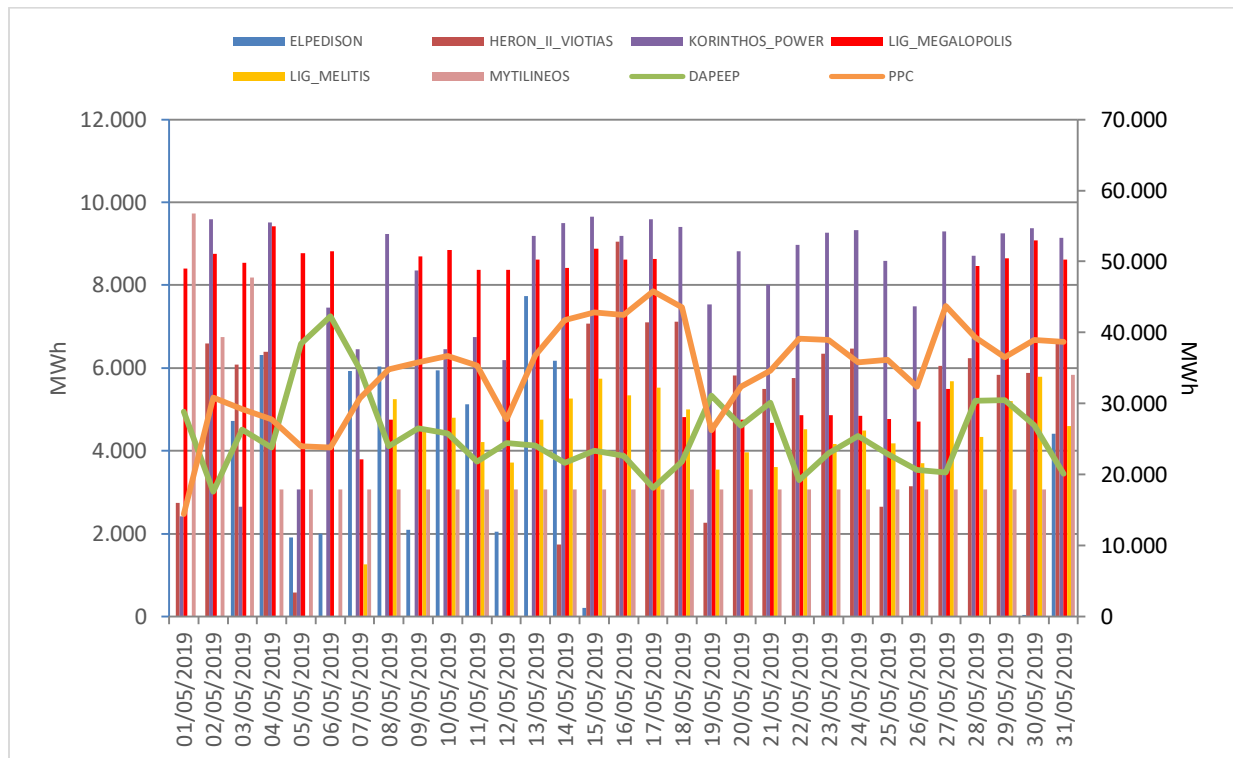


Figure 14: Daily production per Participant (the right axis represents the production of PPC and DAPEEP)

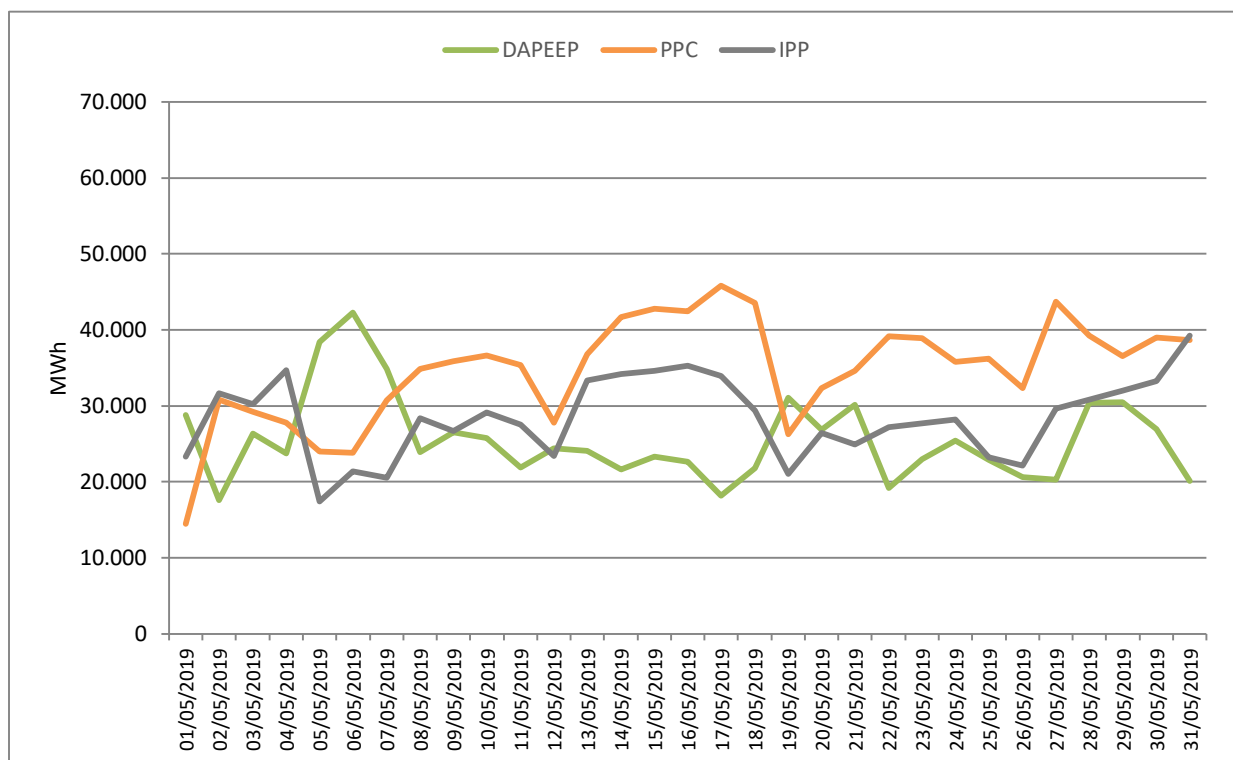


Figure14a: Daily production for PPC, DAPEEP and Independent Power Producers

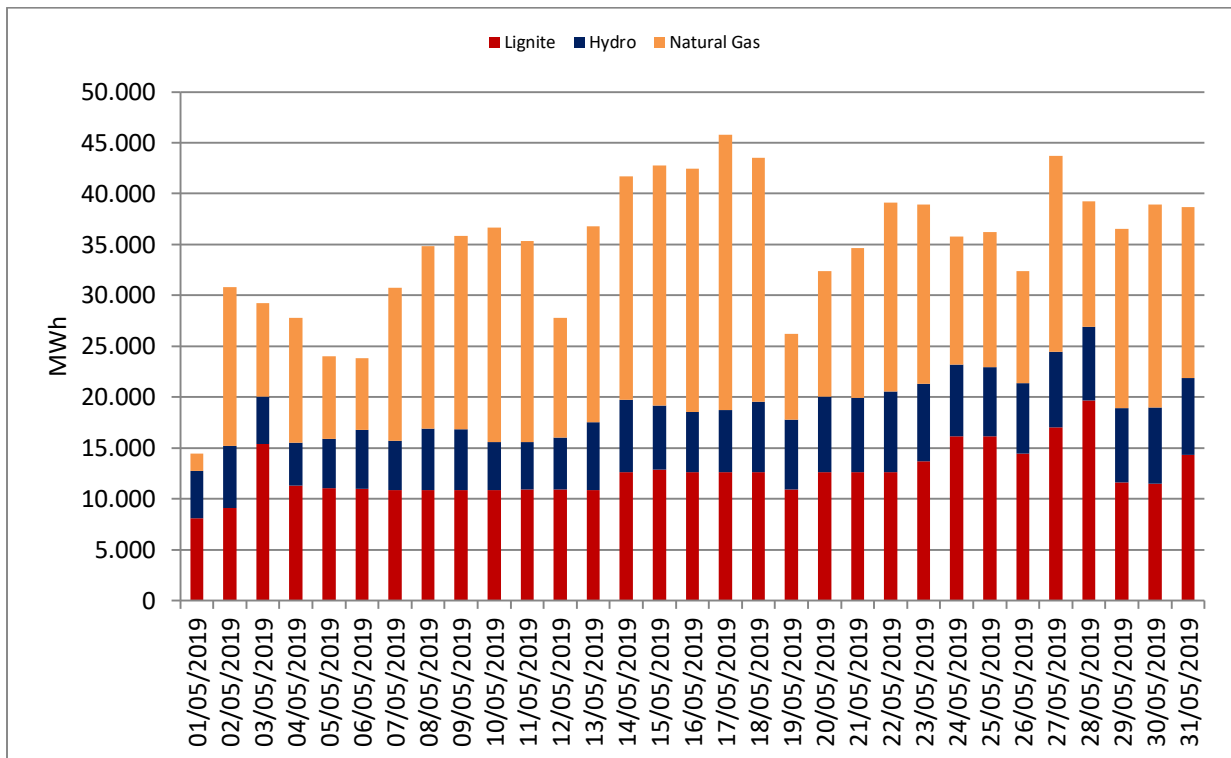


Figure 15: Daily production of PPC units per fuel type

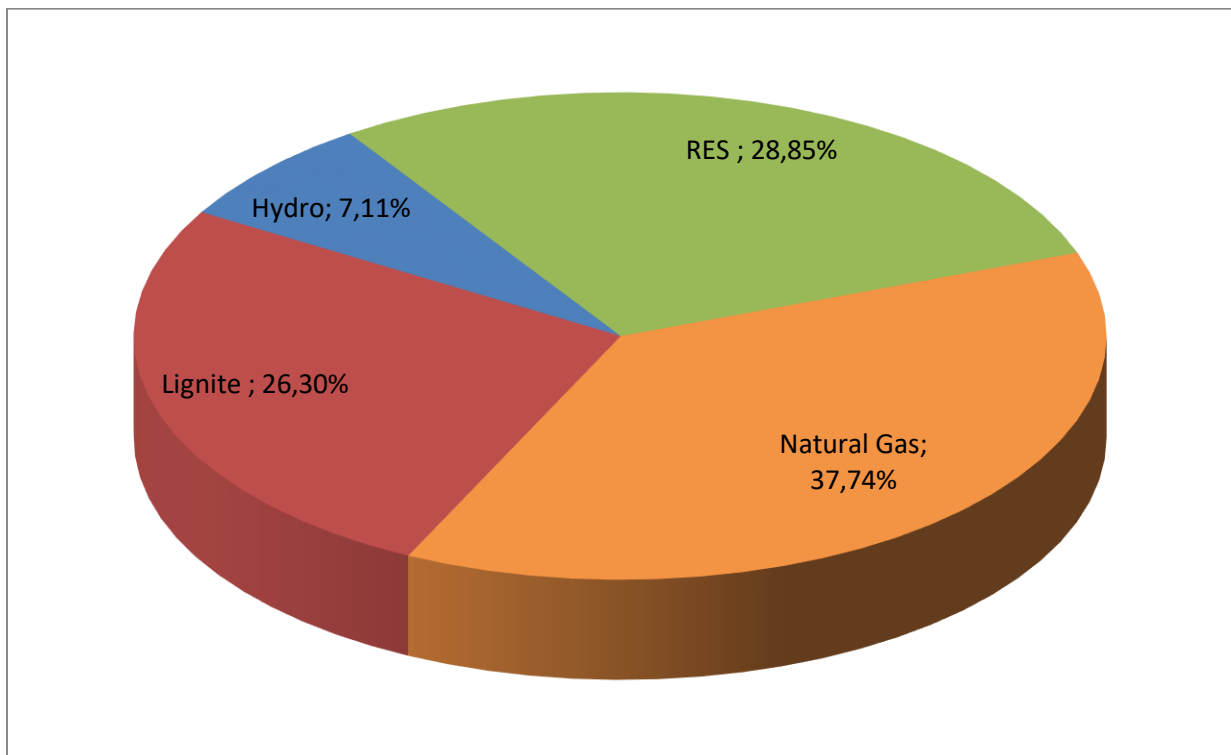


Figure 16: Percentage (%) of total Monthly Production per fuel type

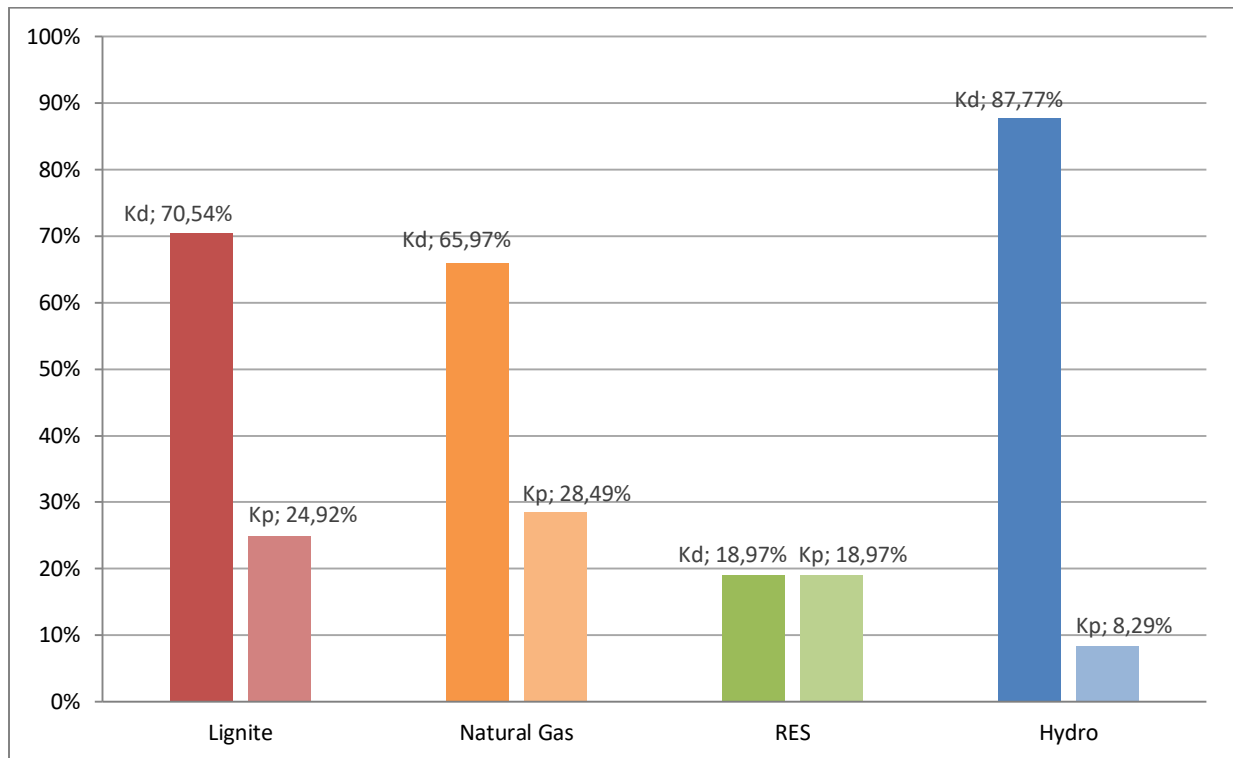


Figure 16a: Availability factor (Kd)* and production factor (Kp)** per fuel type at monthly level

* Availability factor (Kd) per fuel type is defined as the ratio of the energy that could have been produced by the available capacity of all units per fuel type for a period of time to the energy that would have been produced by the same units and same period of time at full capacity.

** Production factor (Kp) per fuel type is defined as the ratio of the energy produced by all units per fuel type during a given period of time to the energy that would have been produced by the same units and same period of time at full capacity.

4.2 Production and Credits per Participant

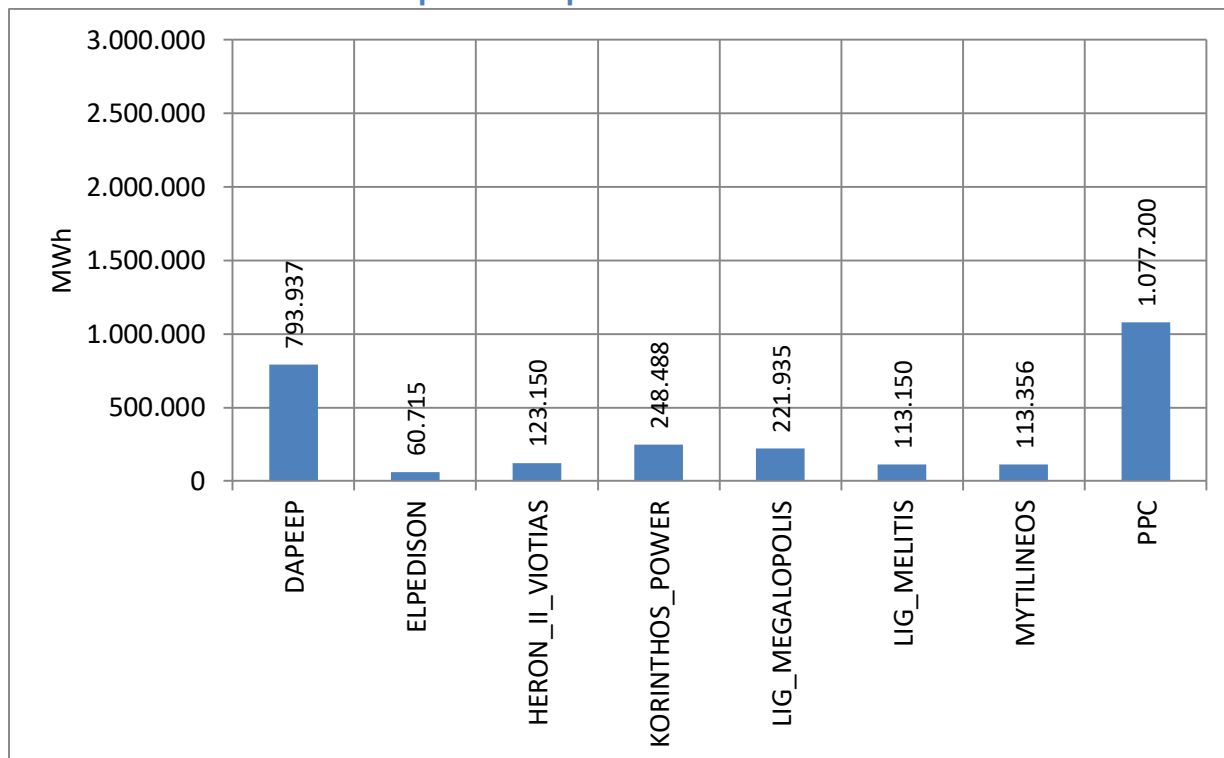


Figure 17: Monthly Production per Participant

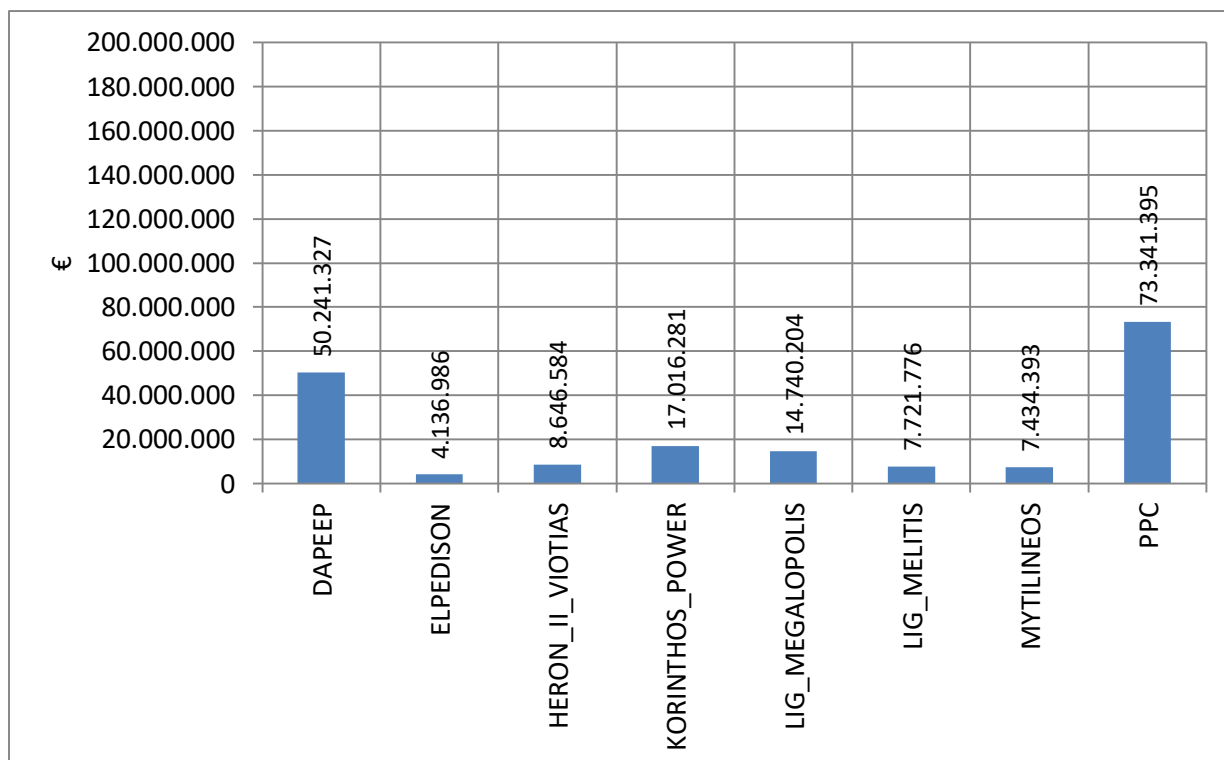


Figure 18: Monthly Production Credits per Participant

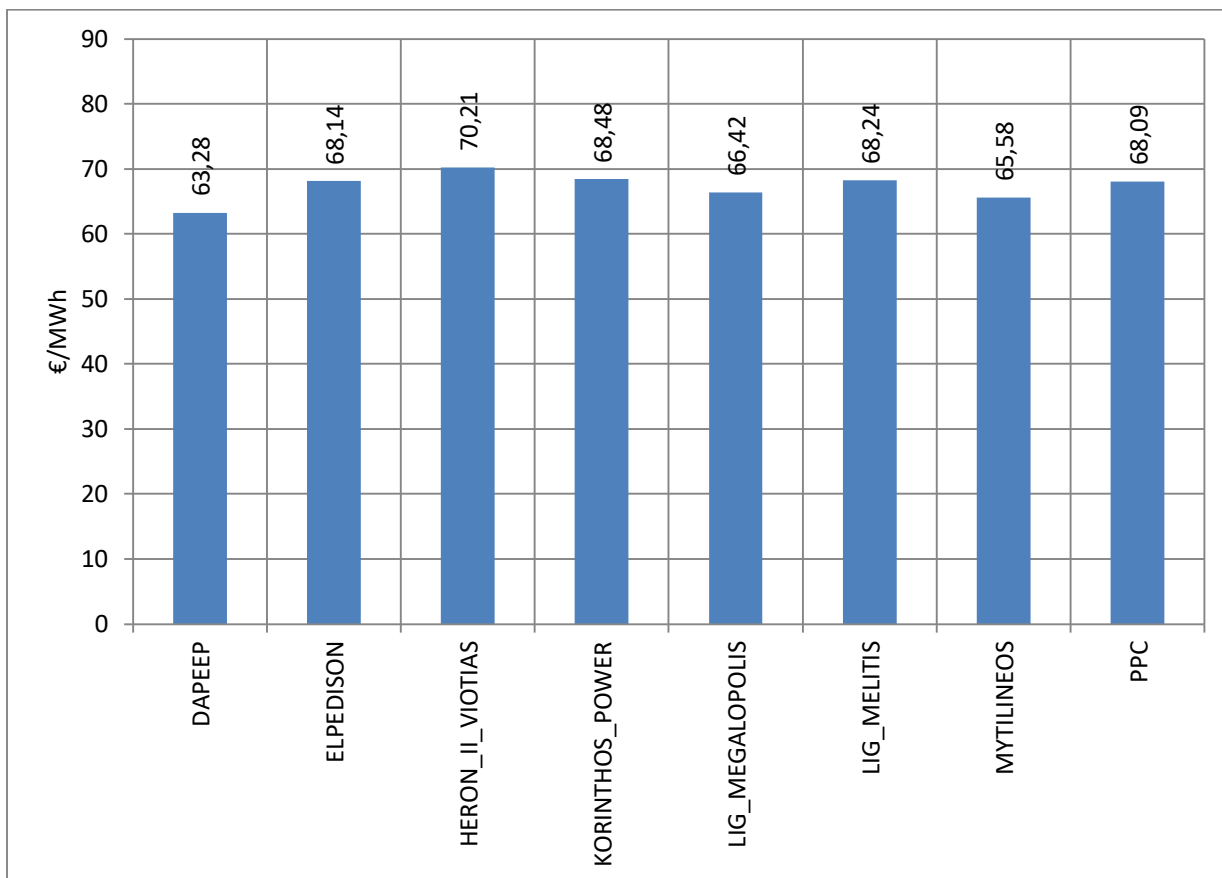


Figure 19: Monthly Credits / Monthly Production in €/MWh per Participant

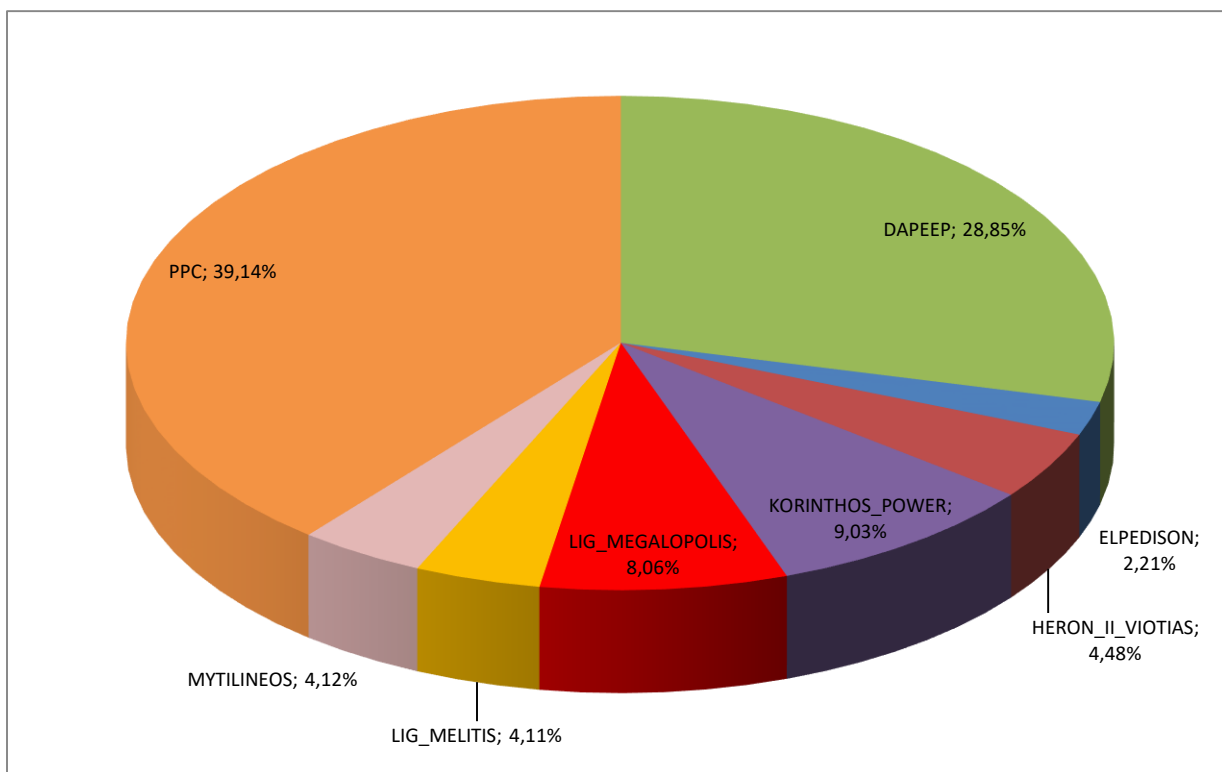


Figure 20: Percentage (%) of Total Monthly Production per Participant

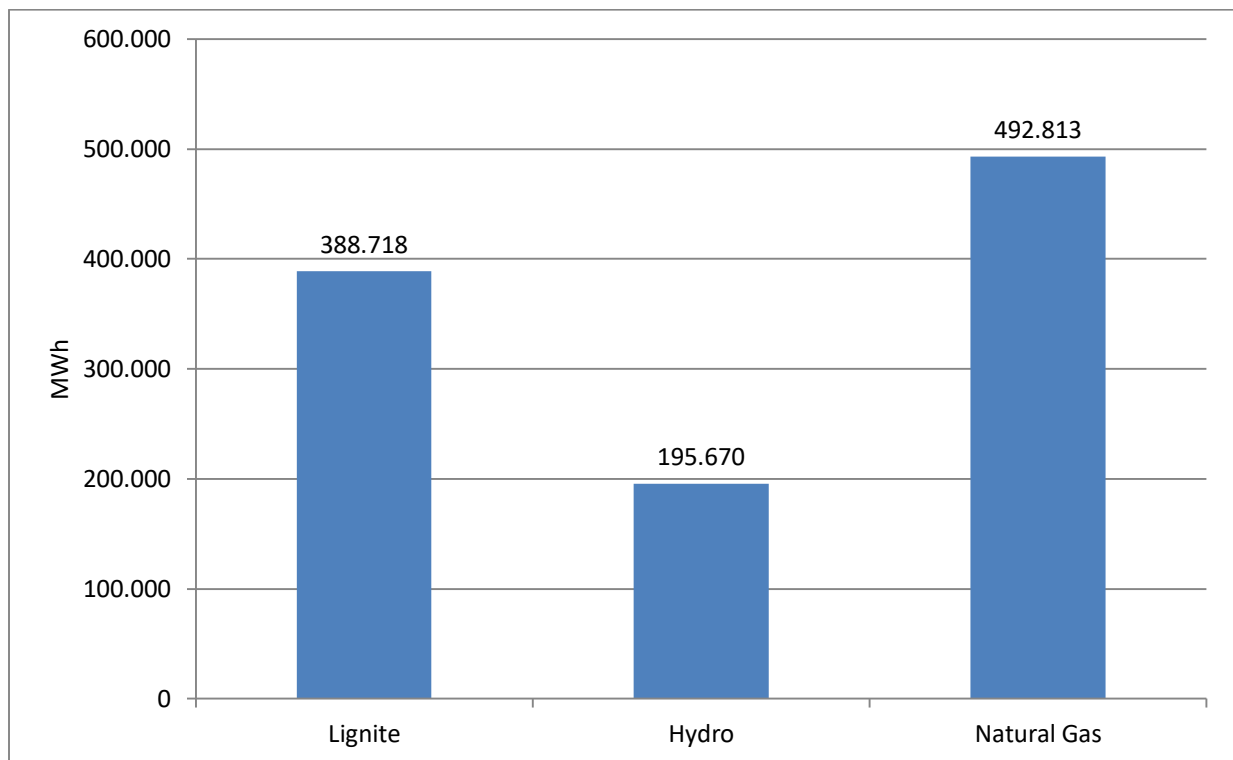


Figure 21: Monthly Production of PPC per fuel type

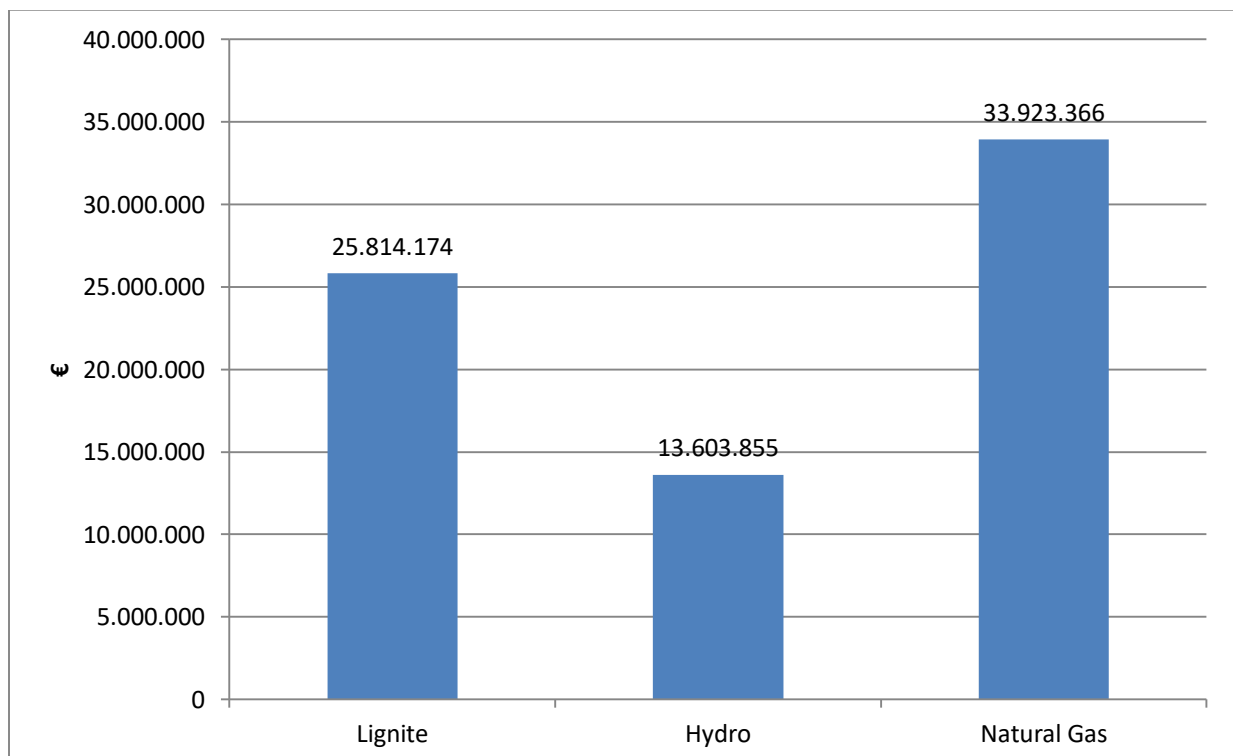


Figure 22: Monthly Credits of PPC per fuel type

4.3 Production per Participant, fuel type and operation status

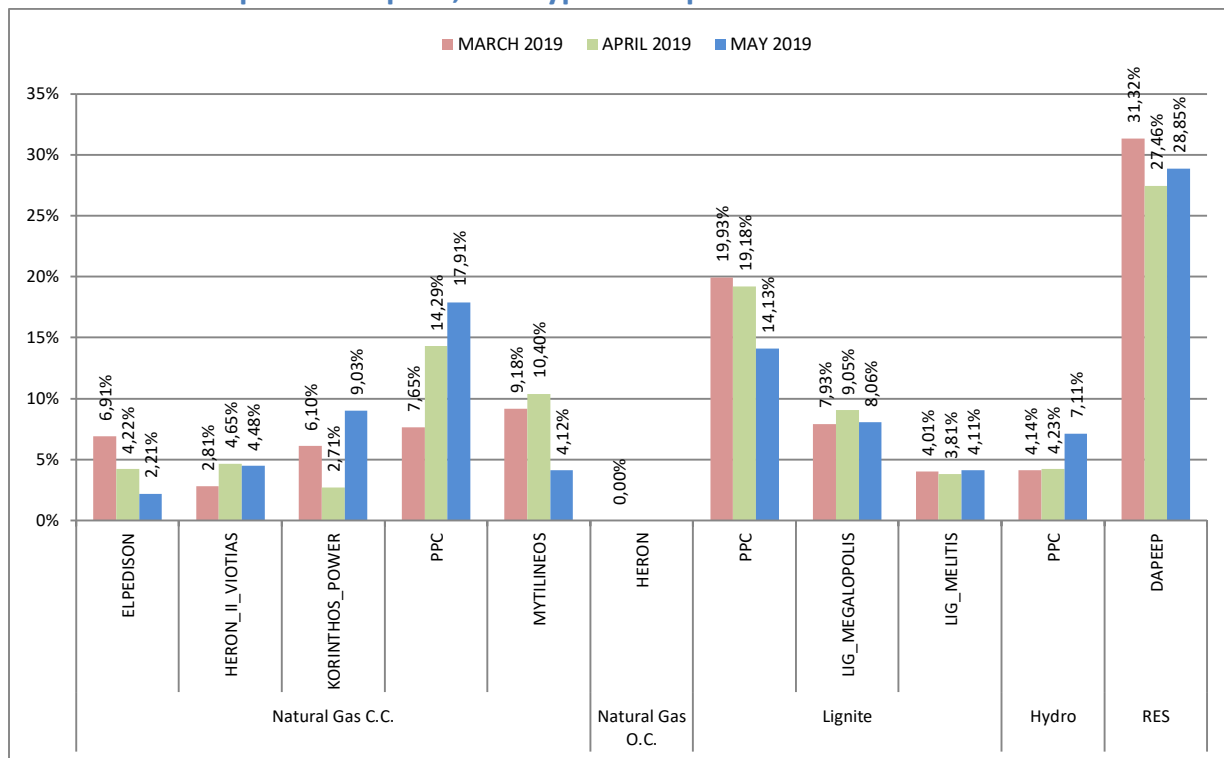


Figure 23: Percentage (%) of total Monthly Production per Participant and fuel type, in comparison to the previous months.

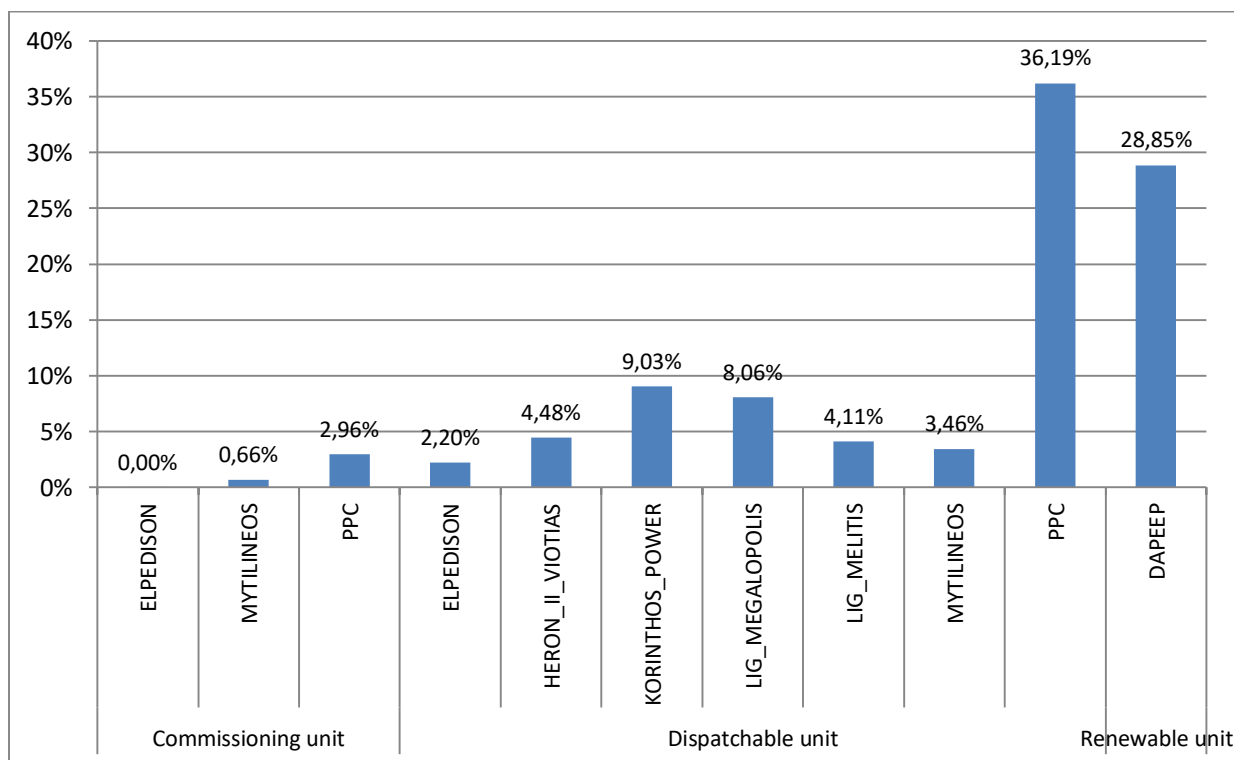


Figure 24: Percentage (%) of Total Production per Participant and operation status (testing operation, dispatchable unit, RES)

4.4 Production and Credits per Unit

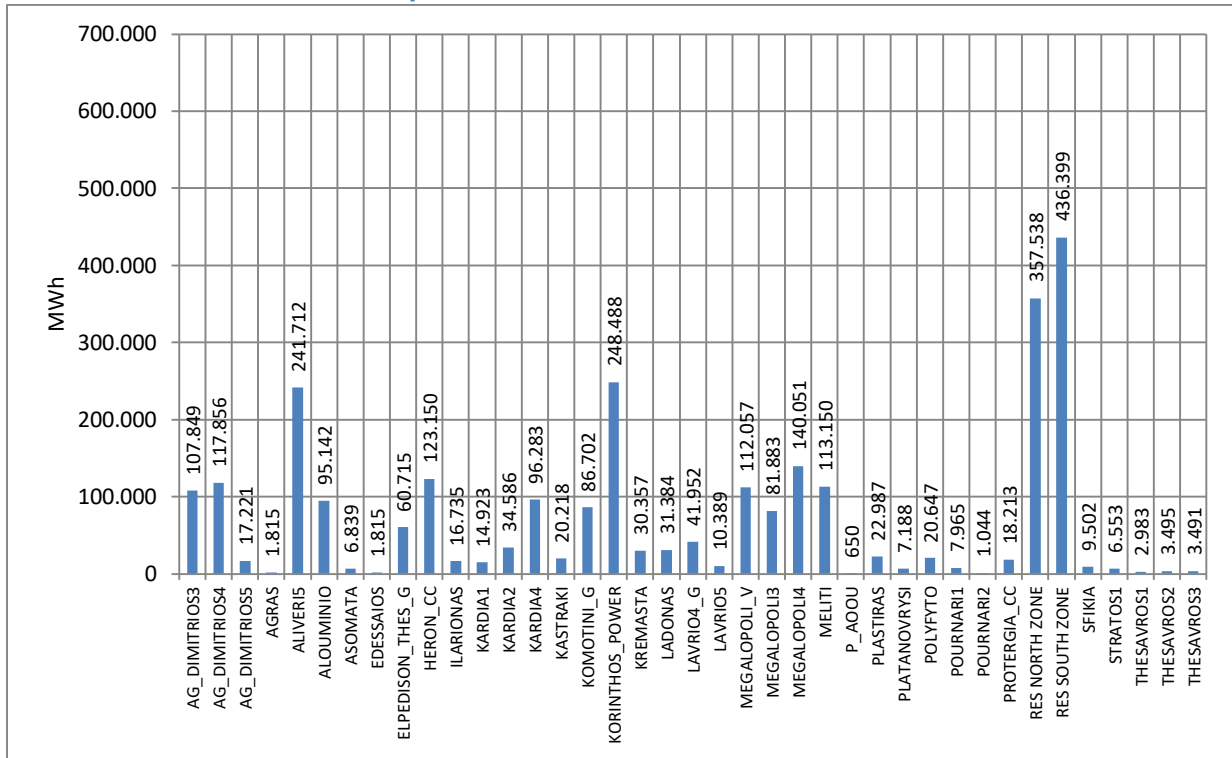


Figure 25: Monthly Energy per Unit

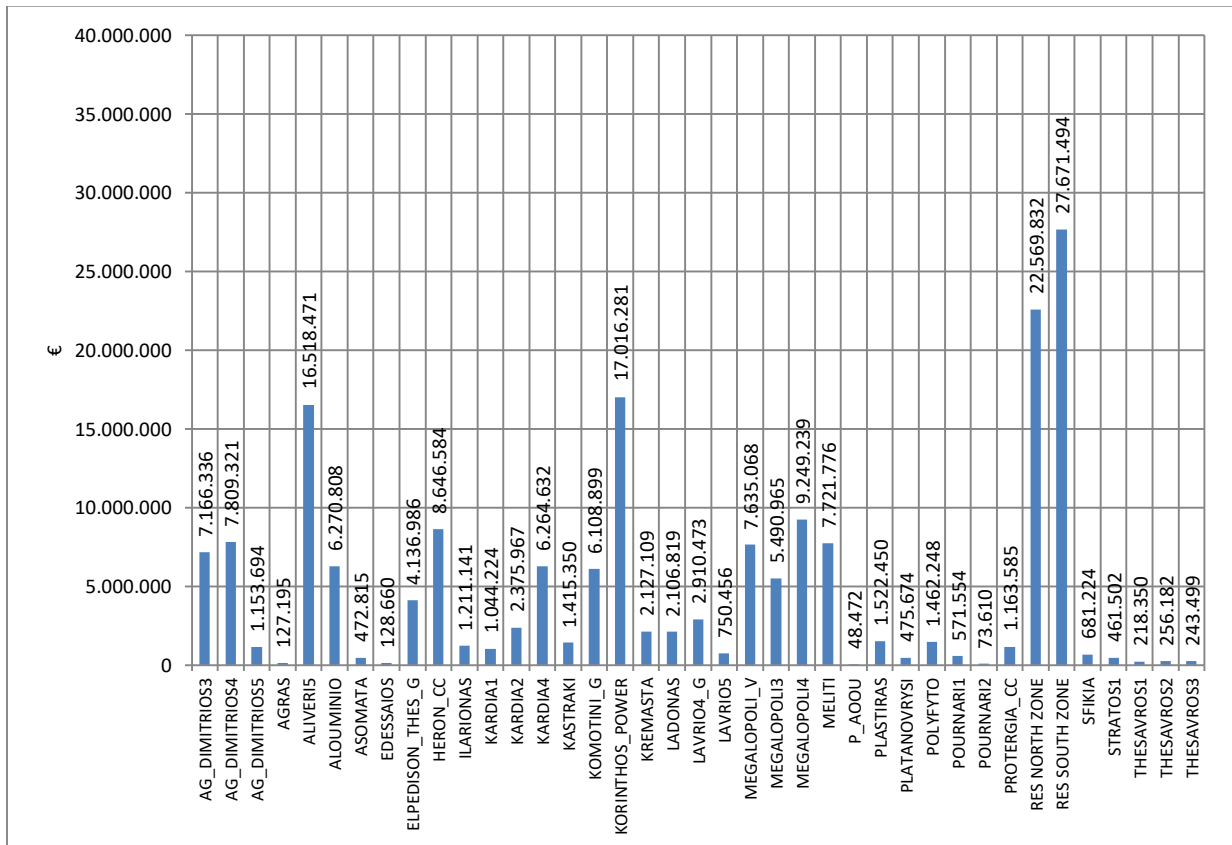


Figure 26: Monthly Credits per Unit

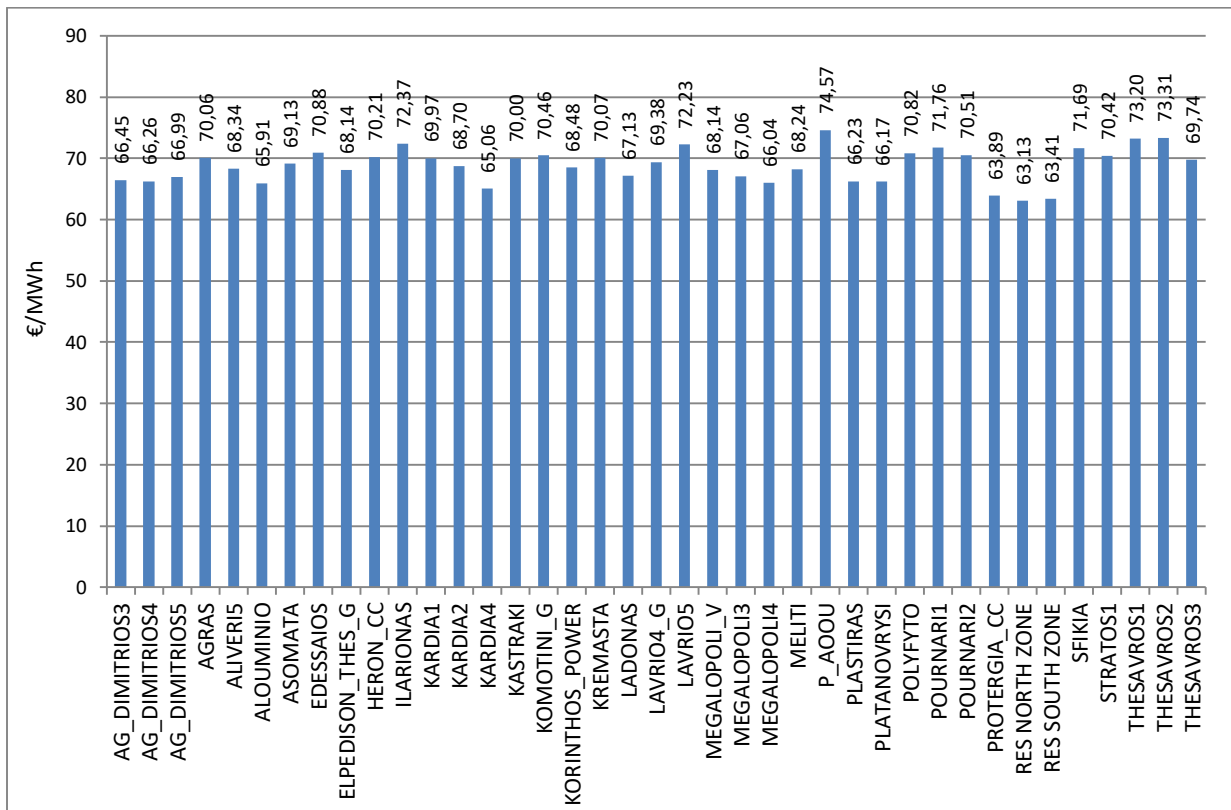


Figure 27: Monthly Credits/Monthly Production in €/MWh per Unit

5. Supply of Electricity

5.1 Load Declarations and Debits

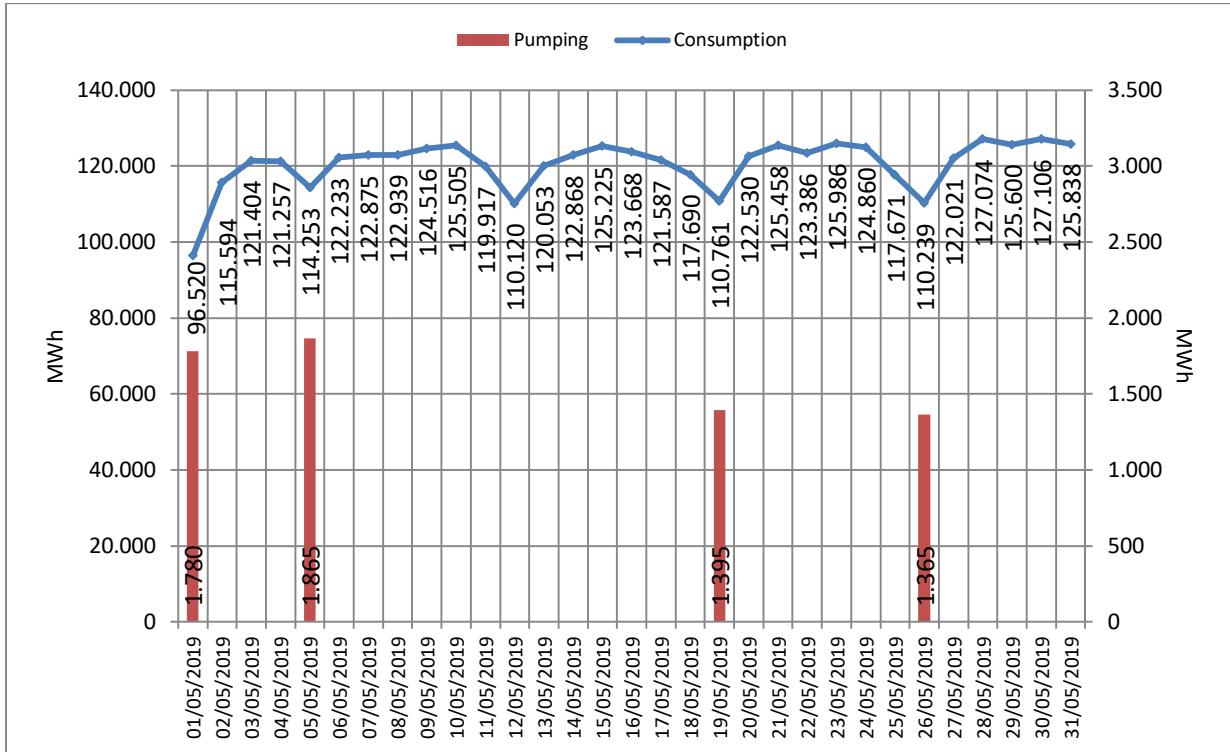


Figure 28: Daily Load Declarations and Pumping (MWh) (right axis represents pumping operation)

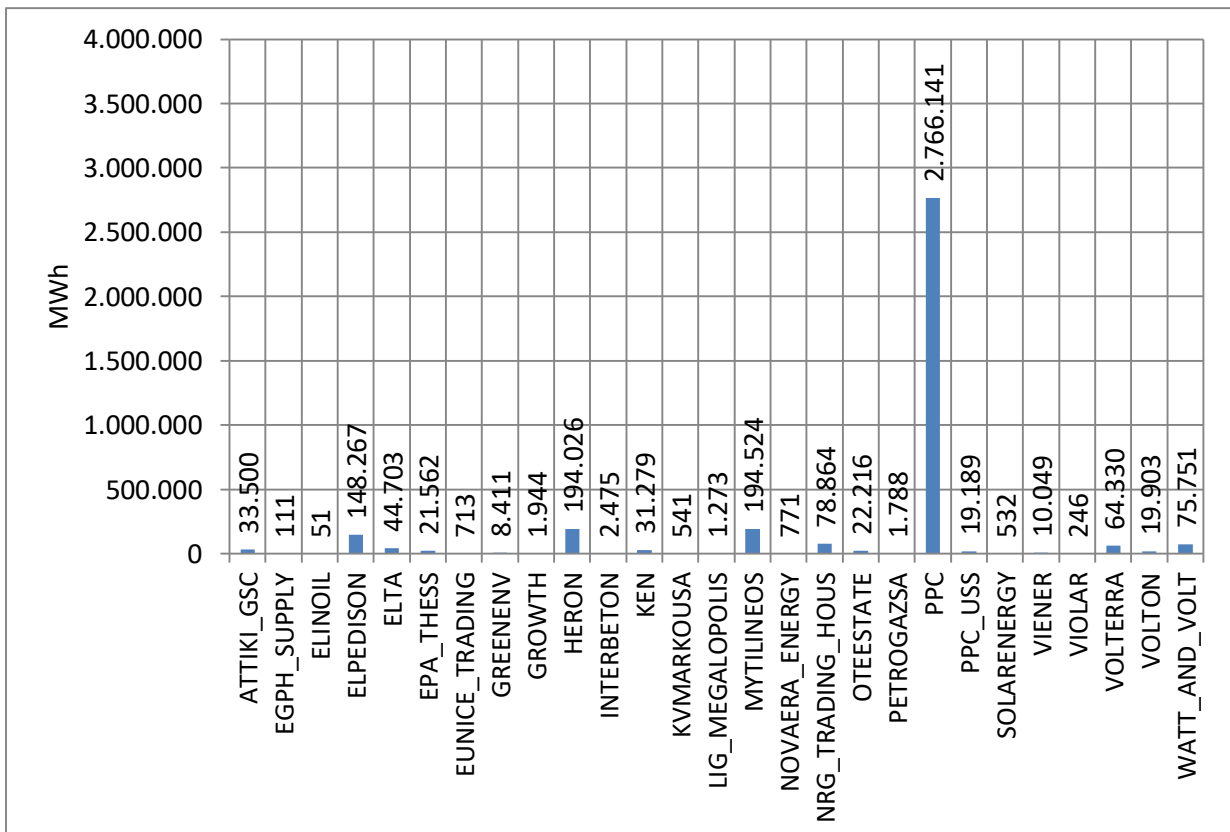


Figure 29: Monthly Supply per Participant

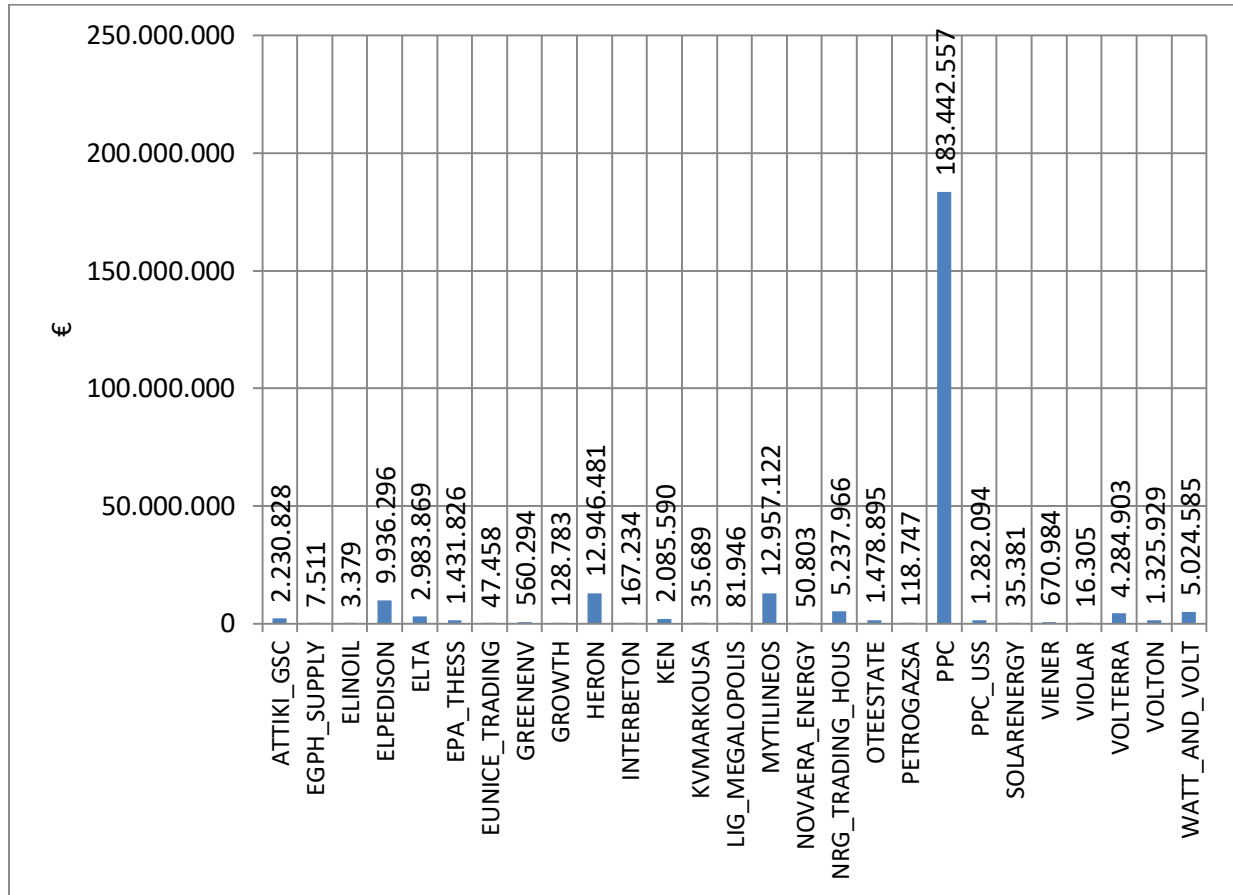


Figure 30: Monthly Supply Debits per Participant

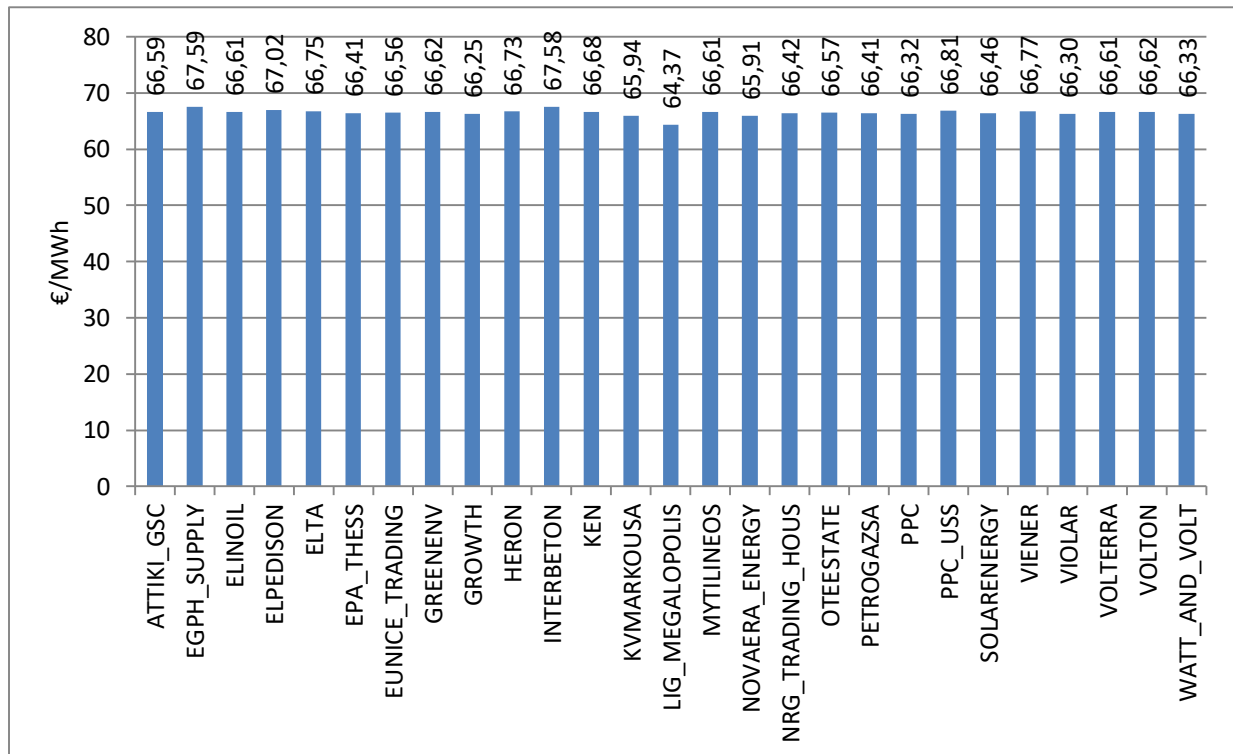


Figure 31: Monthly Debits / Monthly Supply in €/MWh per Participant

5.2 Analysis on Supply per Participant, Load Zone and Voltage Level

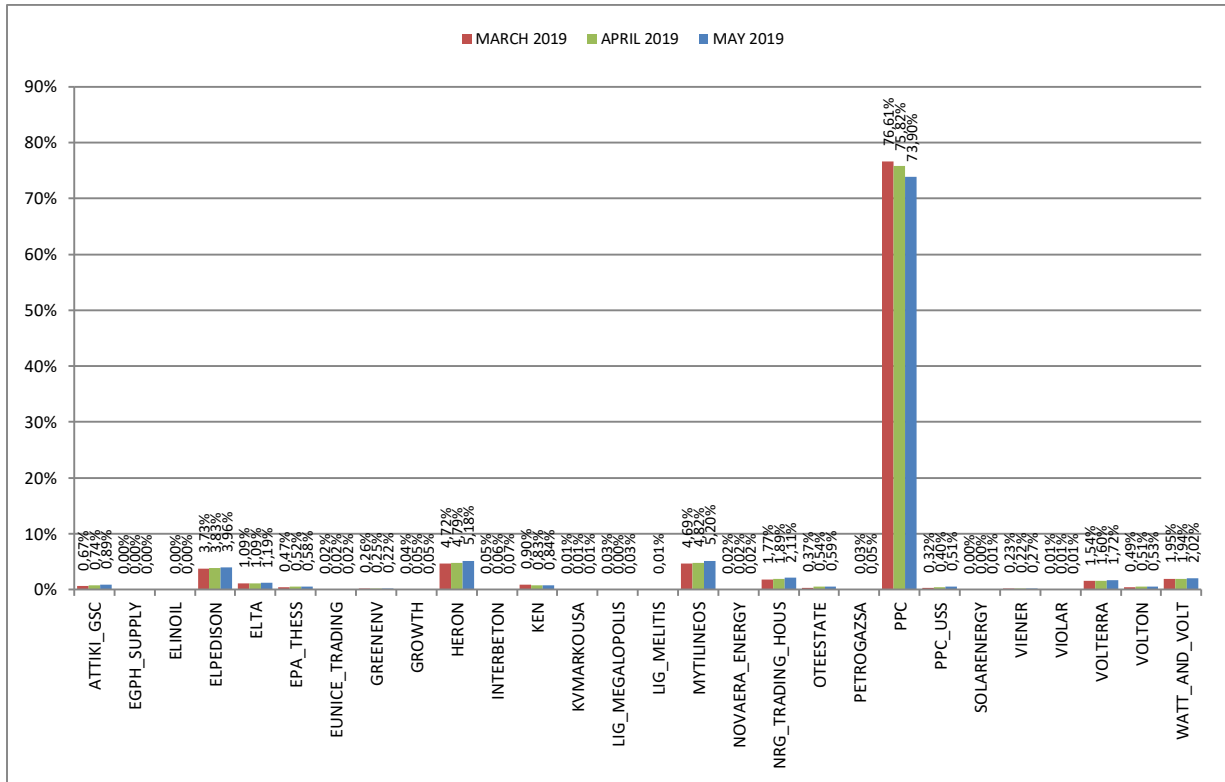


Figure 32: Percentage (%) of Total Monthly Supply per Participant in comparison with the two last months

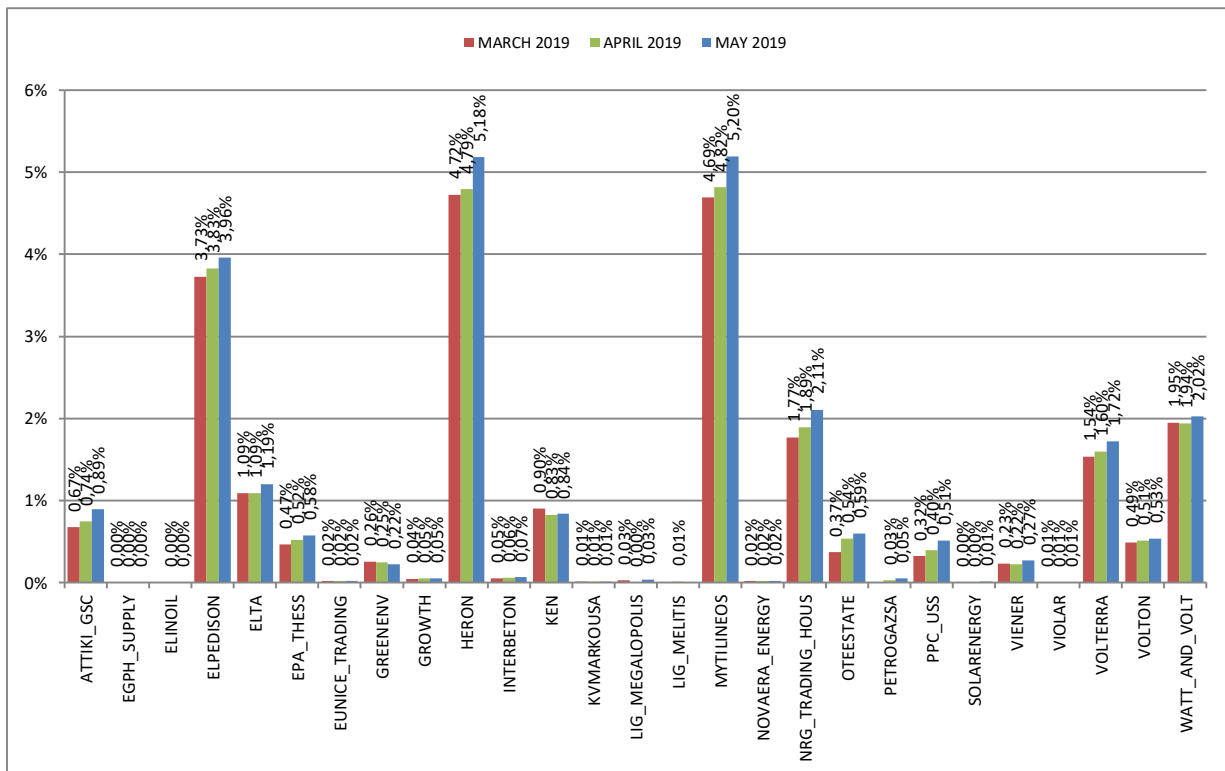


Figure 32a: Percentage (%) of Total Monthly Supply per Participant (without PPC) in comparison with the two last months.

MONTHLY DAS TRADING SYSTEM REPORT MAY 2019

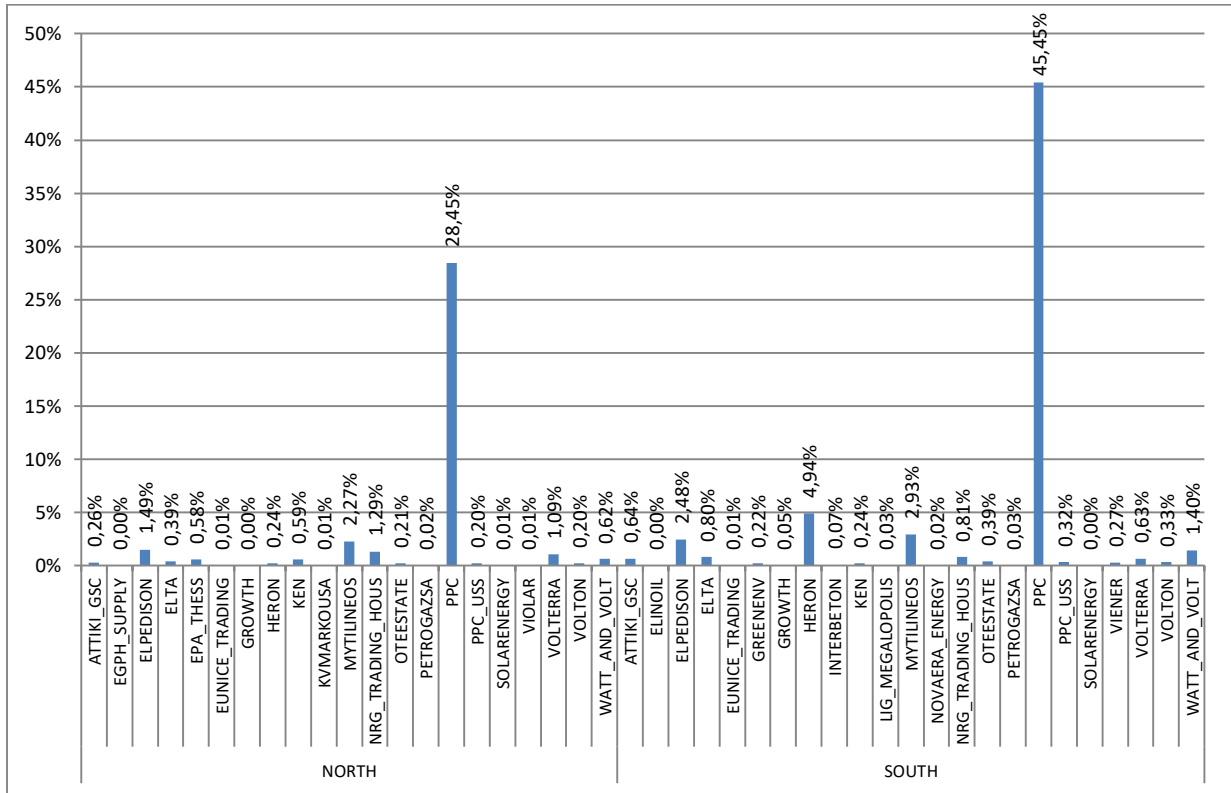


Figure 33: Percentage (%) of Total Monthly Supply per Participant and Zone

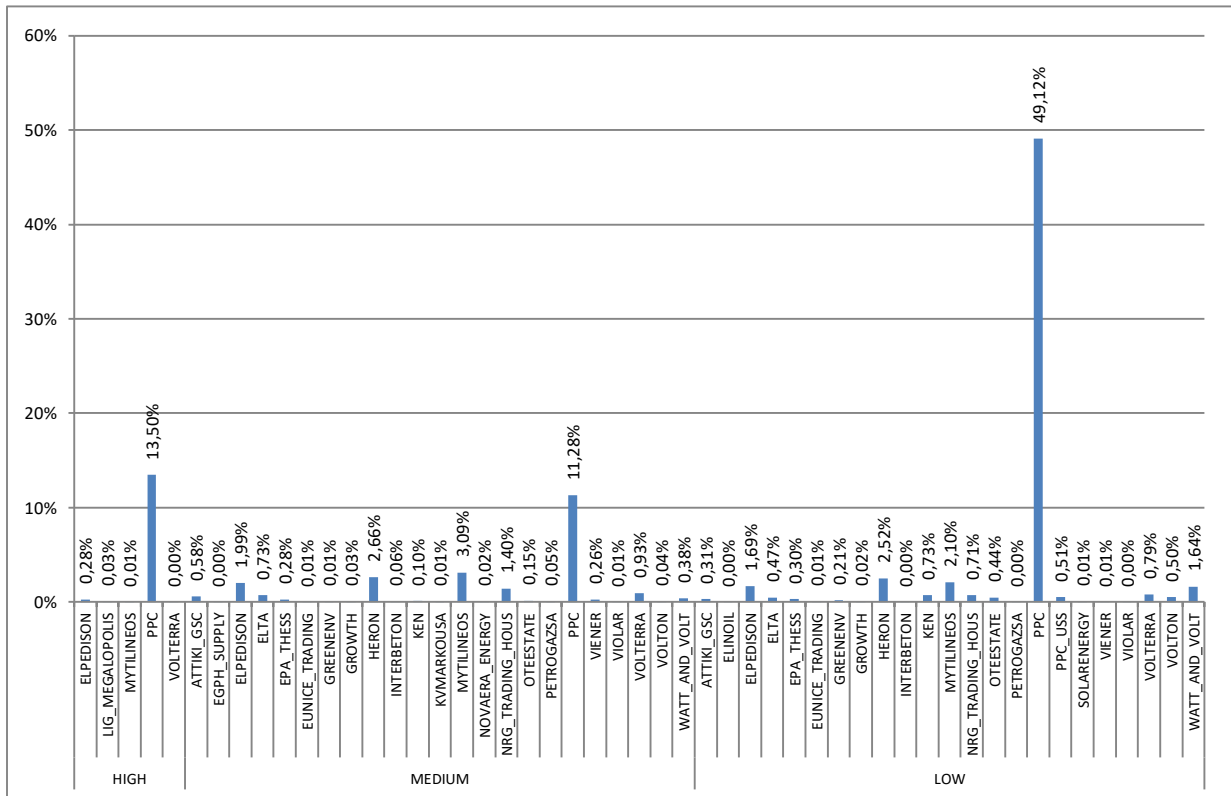


Figure 34: Percentage (%) of Total Monthly Supply per Participant and Voltage Level

6. Electricity Trading

6.1 Imports

	Total	Albania	Bulgaria	Italy	F.Y.R.O.M.	Turkey
Daily Average Imports	38,766	6,871	10,837	10,767	10,441	2,357
Total Monthly Imports	1,201,753	178,655	292,590	333,767	323,662	73,080

Table 4: Daily Average and Total Monthly Imports per Interconnection (MWh)

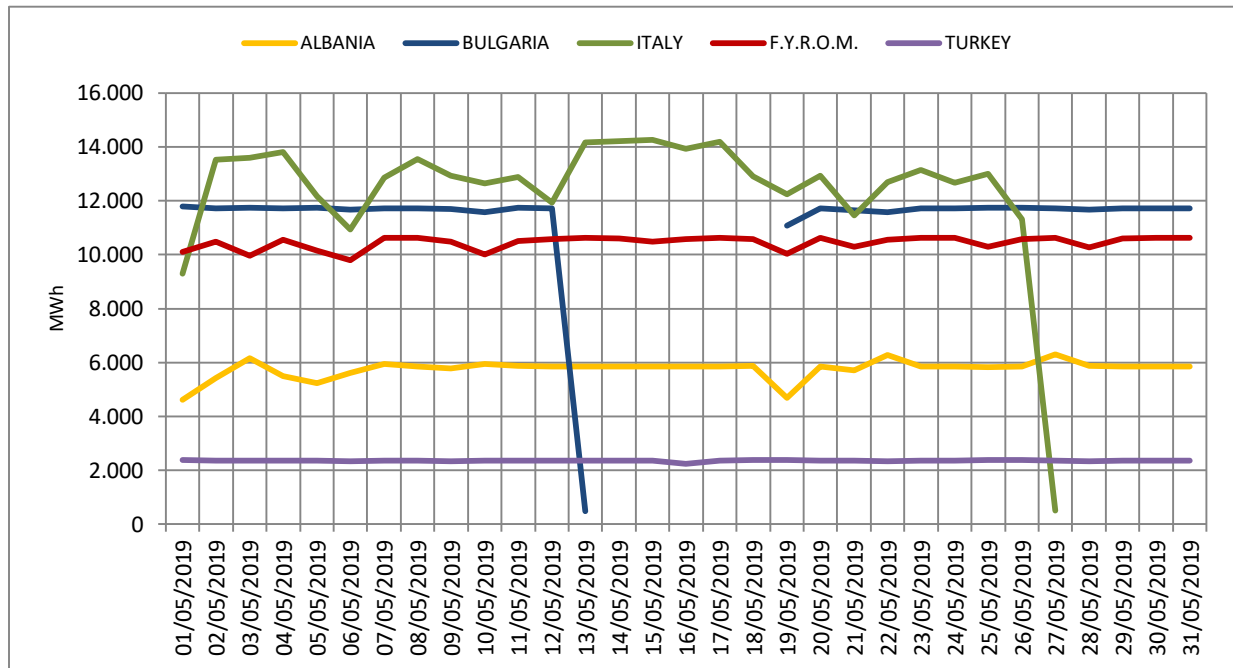


Figure 35: Daily Imports per Interconnection

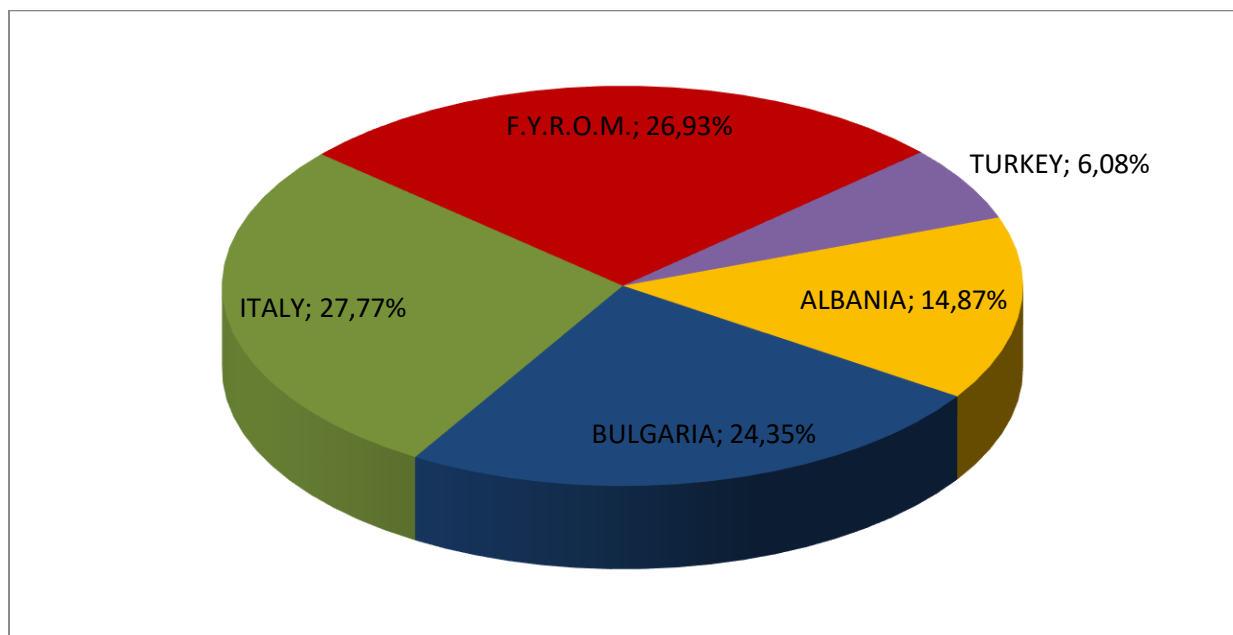


Figure 36: Percentage (%) of Monthly Imports per Interconnection

6.2 Exports

	Total	Albania	Bulgaria	Italy	F.Y.R.O.M.	Turkey
Daily Average Exports	6,791	5,724	28	4,082	16,260	4
Total Monthly Exports	210,524	34,346	759	126,531	48,779	110

Table 5: Daily Average and Total Monthly Exports per Interconnection (MWh)

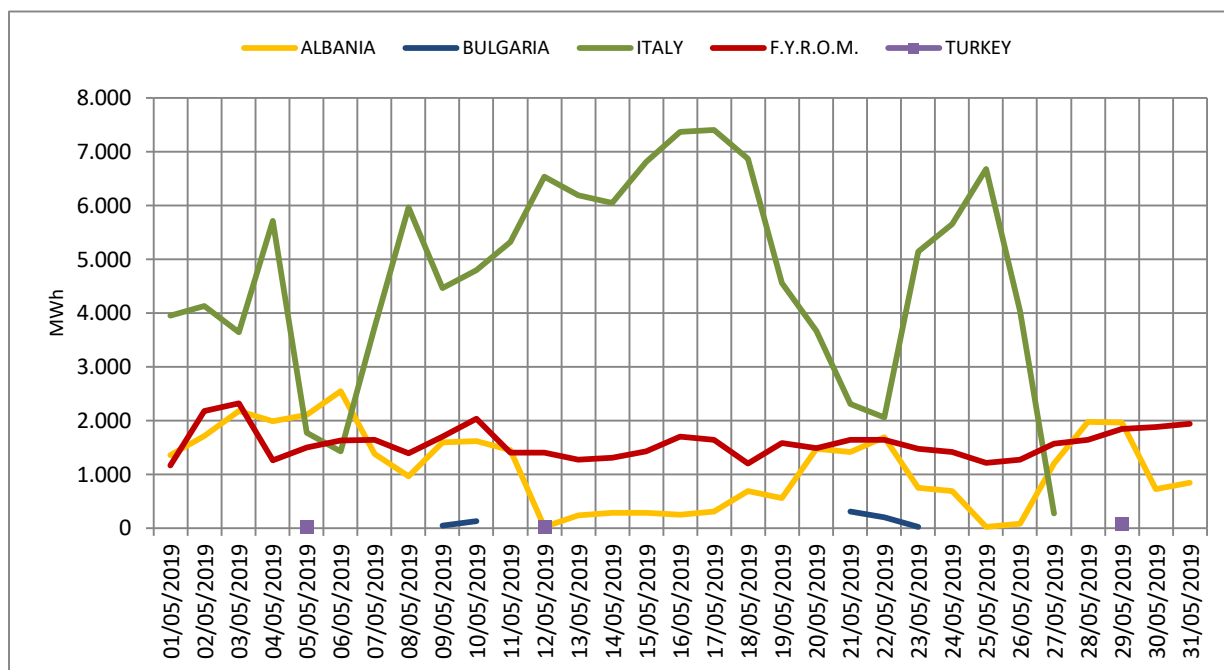


Figure 37: Daily Exports per Interconnection (MWh)

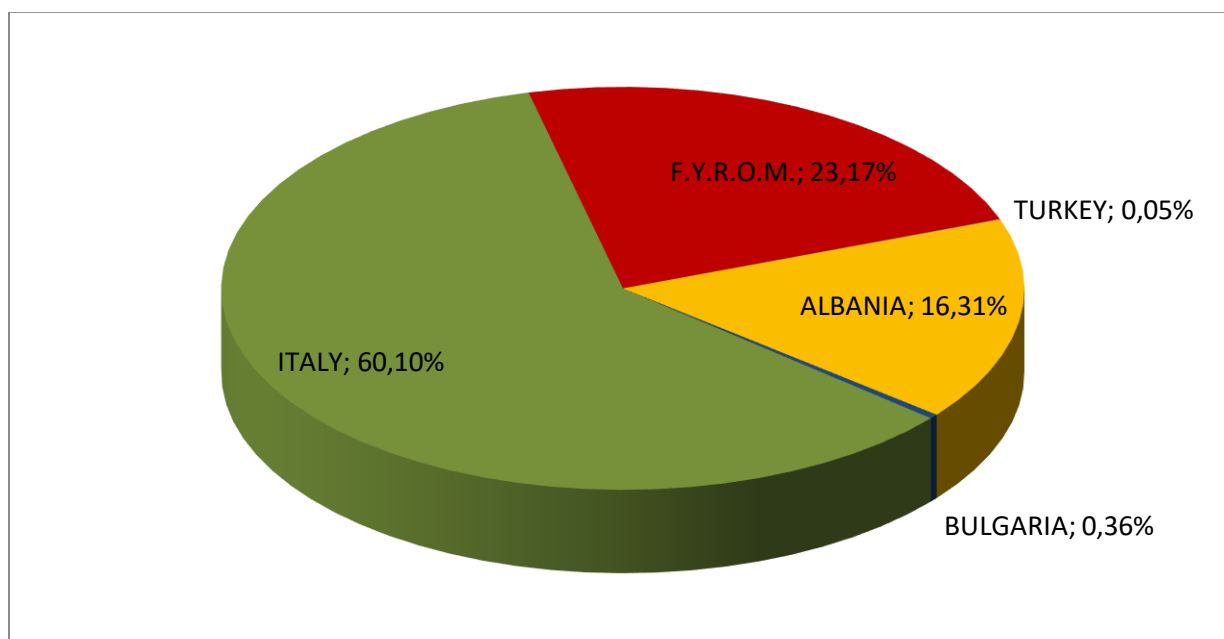


Figure 38: Percentage (%) of Monthly Electricity Exports per Interconnection

6.3 Electricity Transit

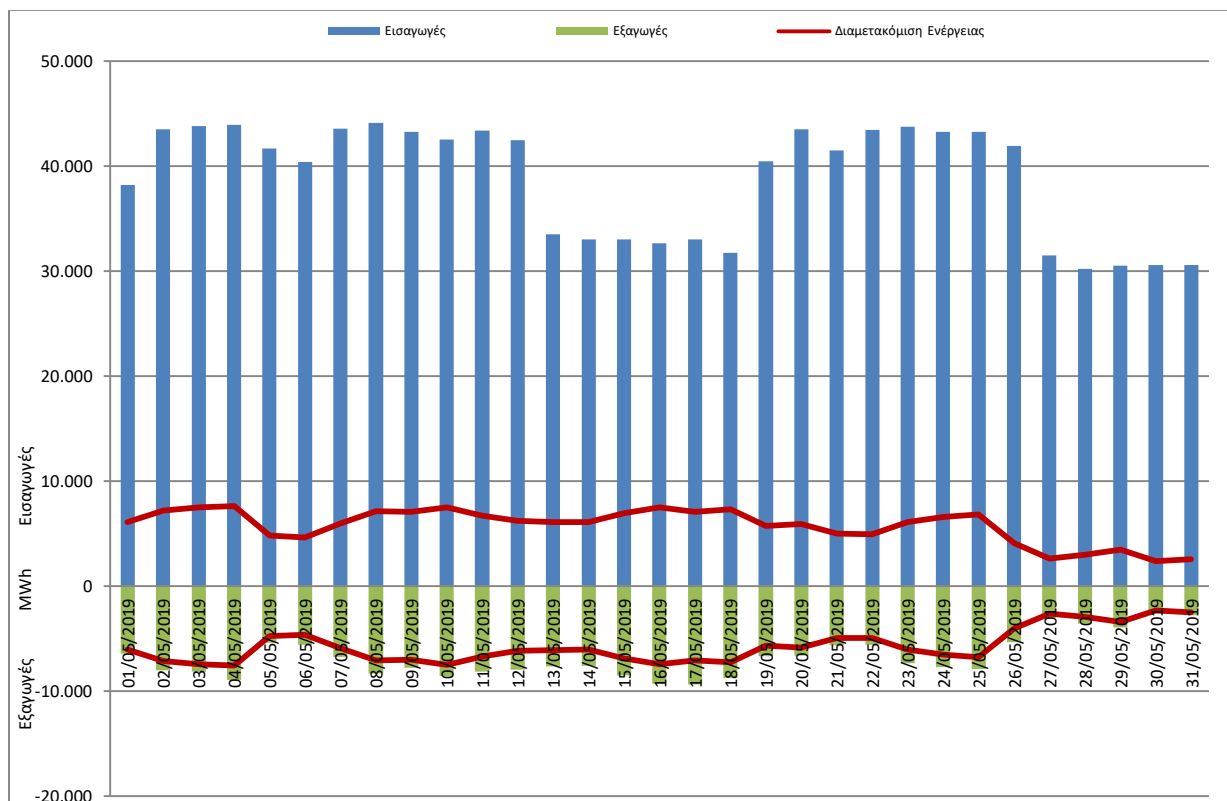


Figure 39: Daily Transit*

* Energy Transit shall mean the concurrent, namely during the same Dispatch Period, Import and Export of energy by the same participant, regardless of the capacity in which such Participant carries out such concurrent Import and Export. The energy quantity transited by a Participant during a Dispatch Period shall be calculated as the minimum between the absolute value of all Imports and the absolute value of all Exports performed by such Participant in the same Dispatch Period.

Source: Power Exchange Code for Electricity, Article 81

6.4 Net Position of Interconnections Balance

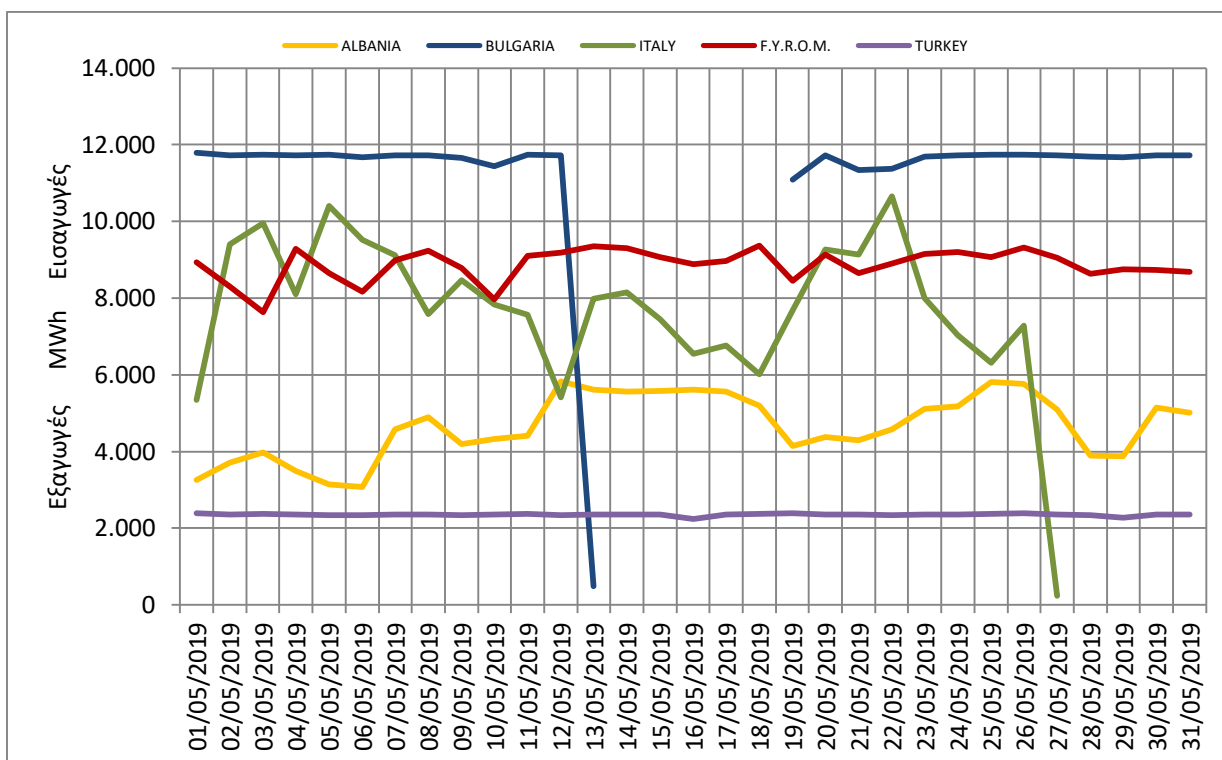


Figure 40: Daily Net Position of Interconnections (Imports-Exports), (positive values: more Imports, negative values: more Exports)

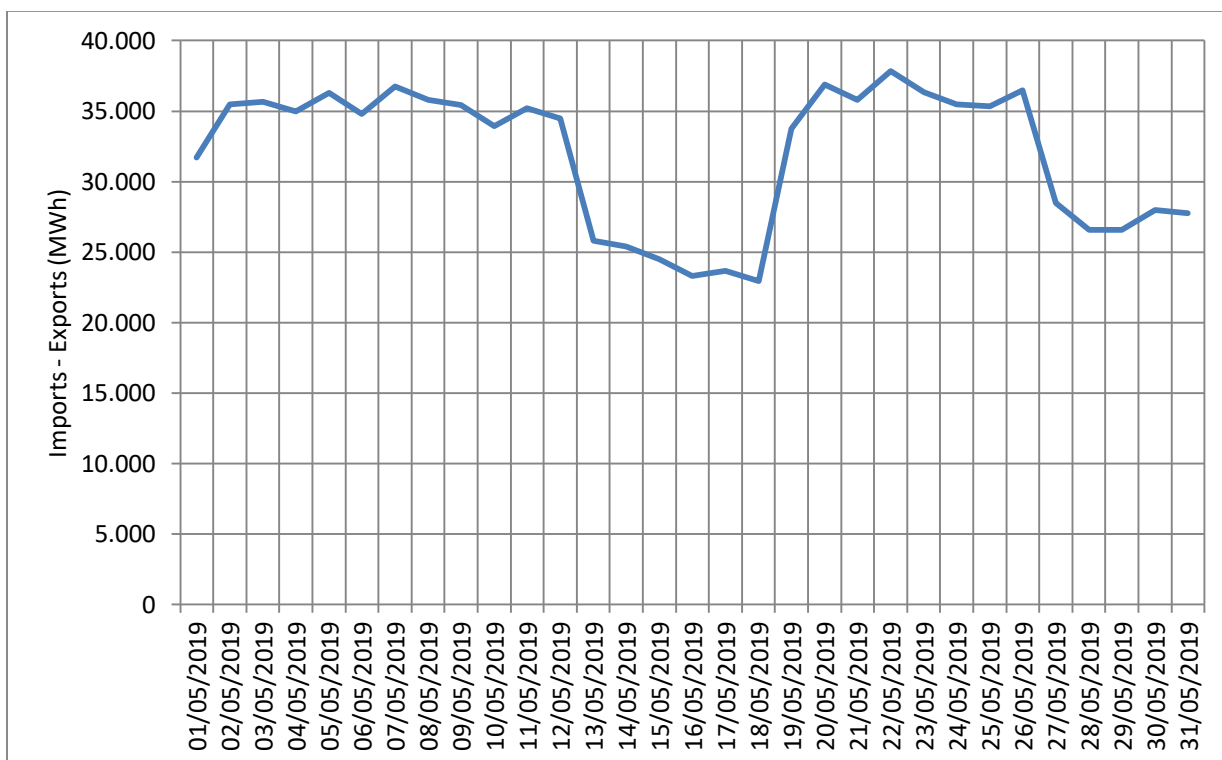


Figure 41: Daily Net Position of all Interconnections (Imports - Exports)

6.5 Analysis on Trading per Participant and Interconnection

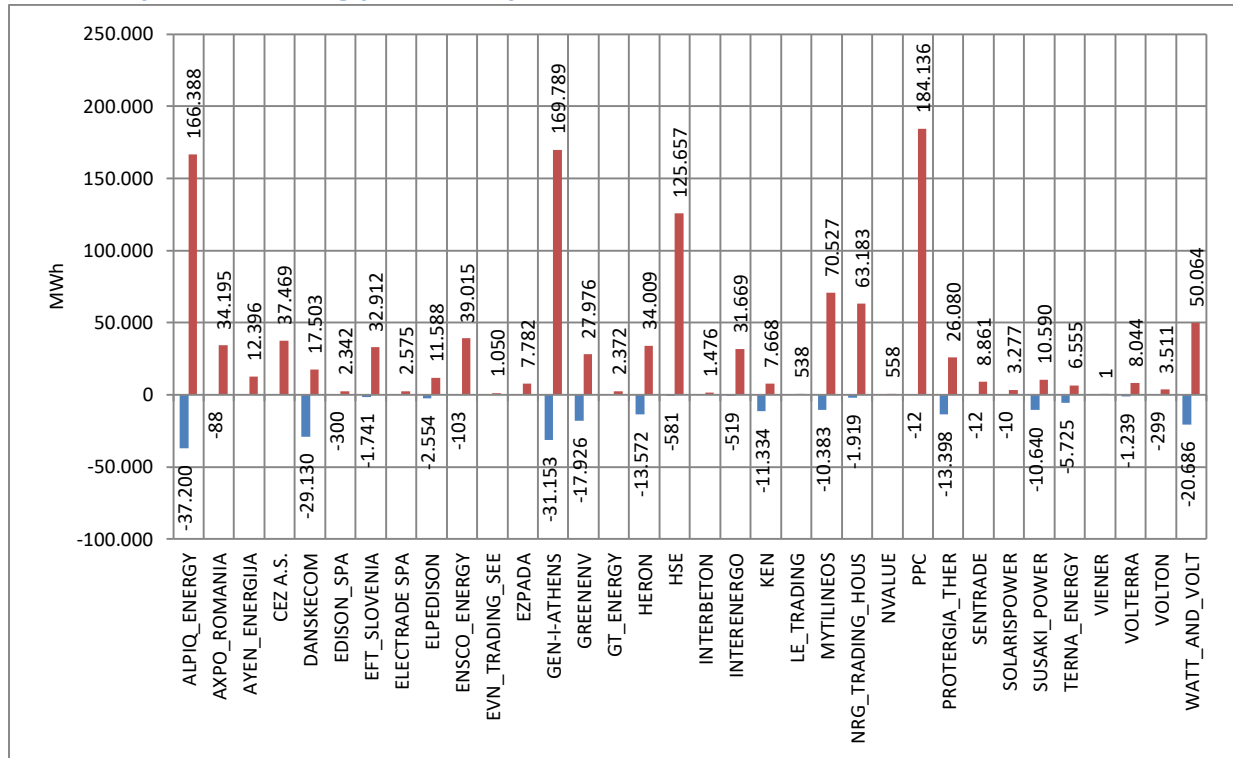


Figure 42: Monthly Trading per Participant and activity (positive values: Imports, negative values: Exports)

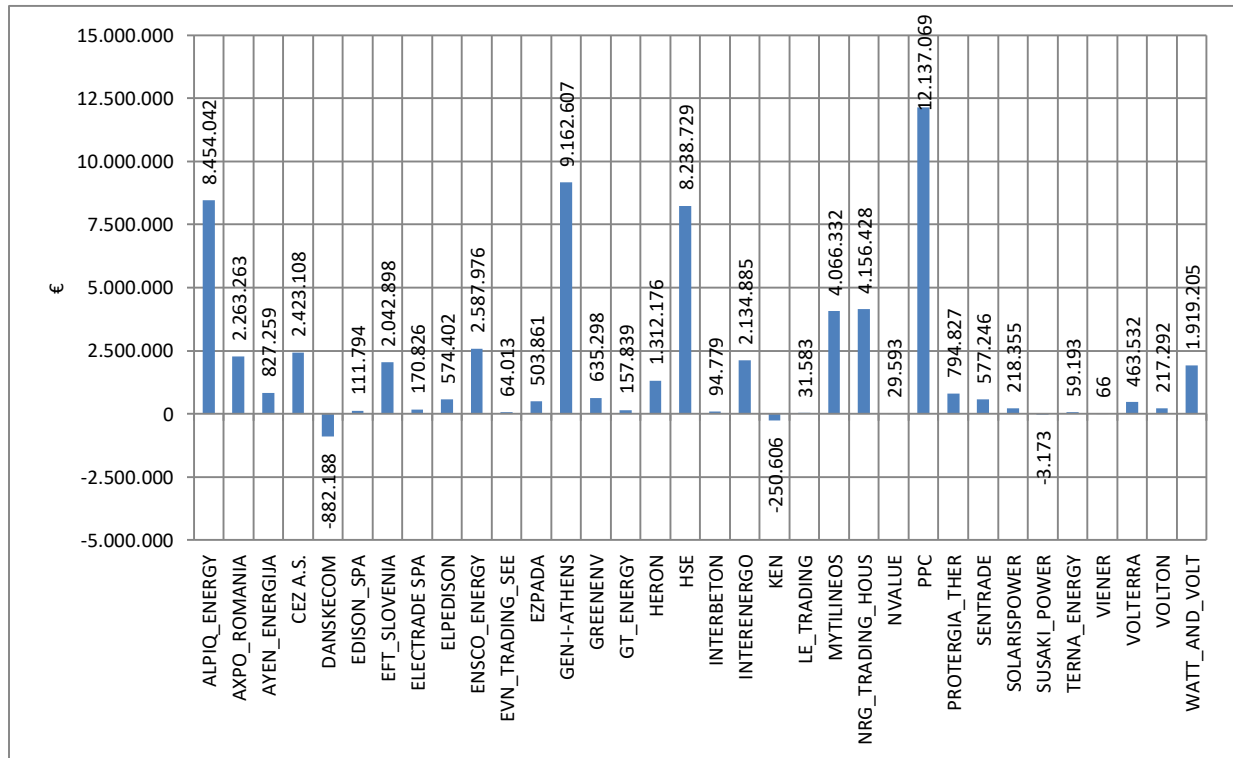


Figure 43: Trading Credits/Debits per Participant (positive values: Credits, negative values: Debits)

6.6 Wrong Direction Energy Flows

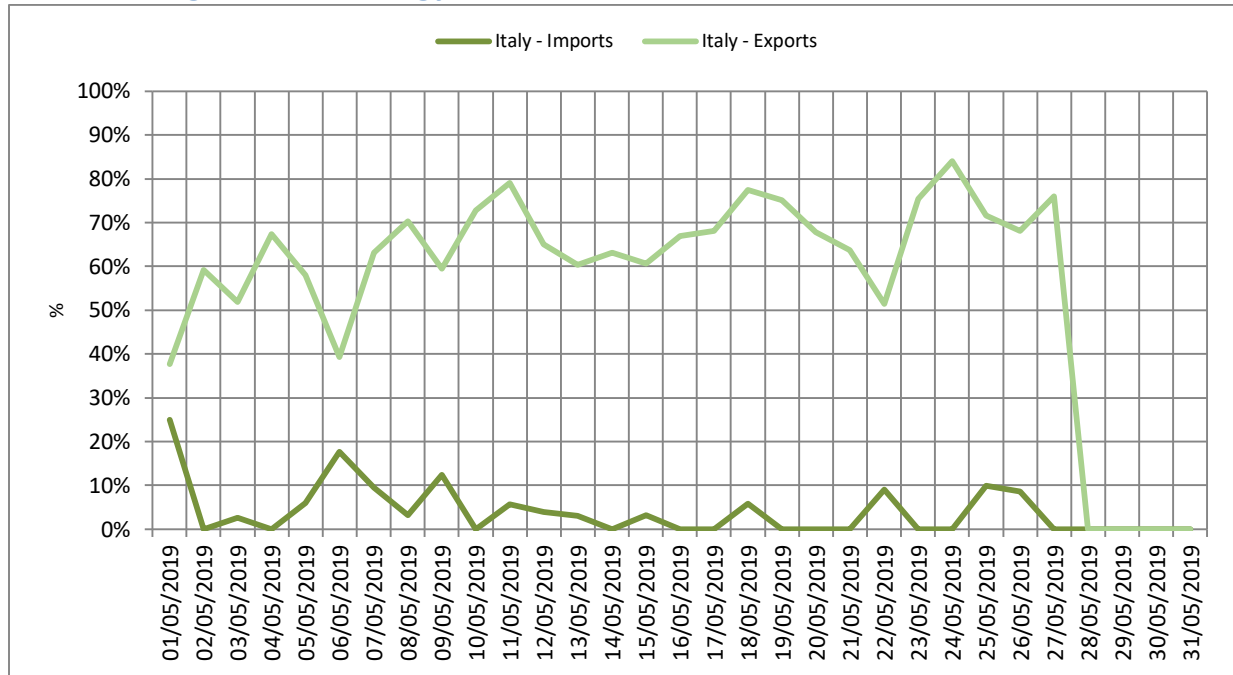


Figure 44: Daily percentage (%) of indicative wrong direction energy flows* as part of the realized imports/exports for the interconnection of Greece-Italy, which would not get implemented under market coupling

*As indicative wrong energy flows is defined the energy flow from a bidding zone with higher price to a bidding zone with lower price. The above values of energy trading are calculated based on the Short-Term Capacity Rights.

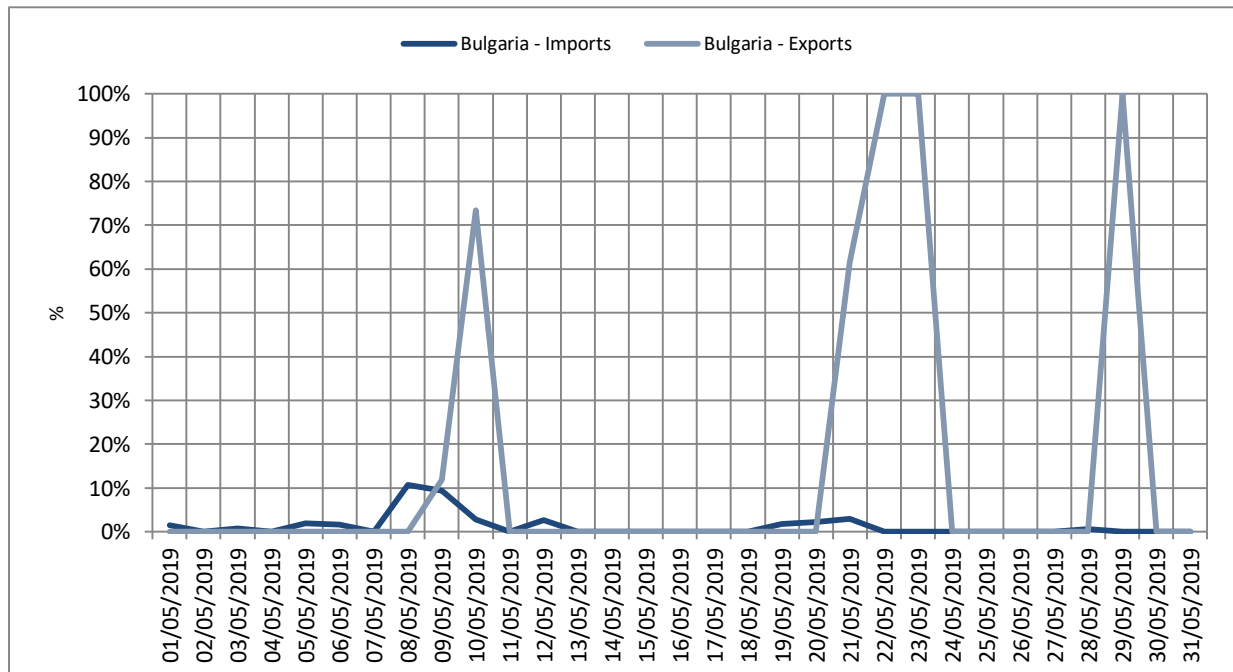


Figure 45: Daily percentage (%) of indicative wrong direction energy flows* as part of the realized imports/exports for the interconnection of Greece-Bulgaria, which would not get implemented under market coupling

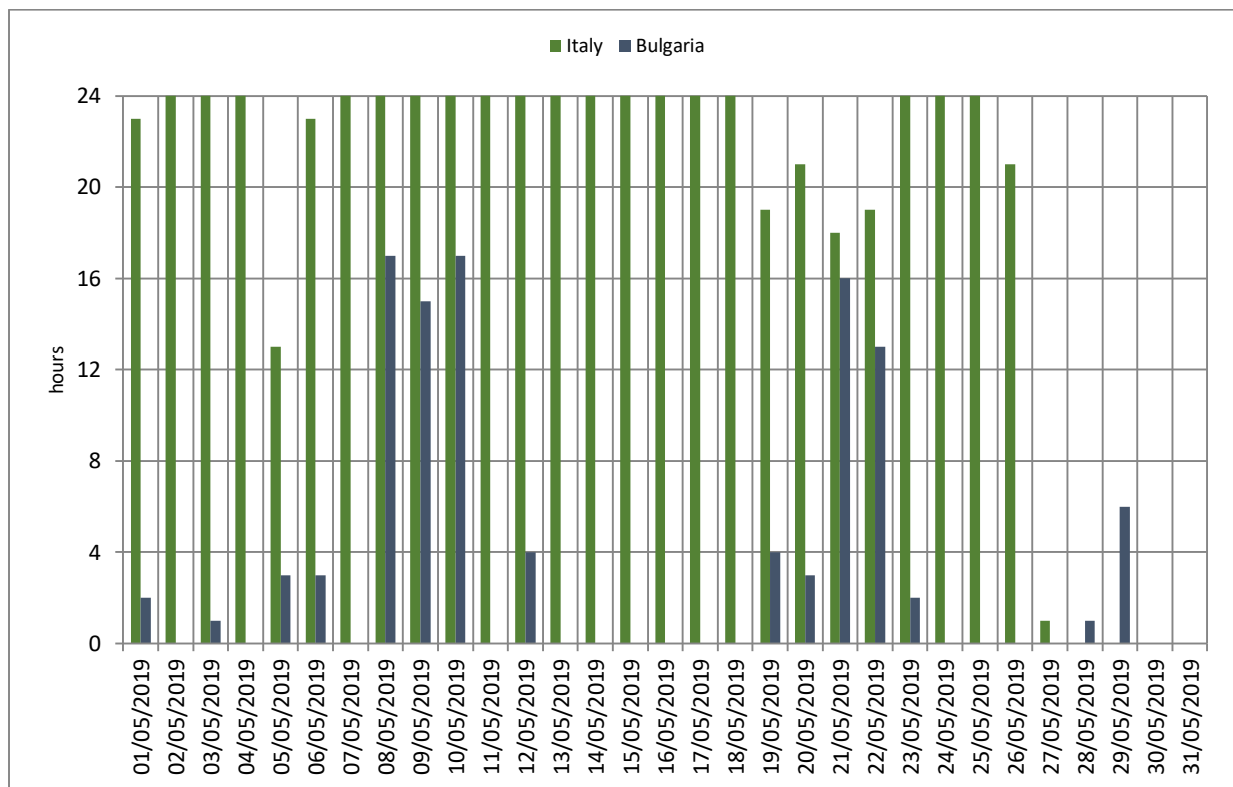


Figure 46: Hours per day with wrong direction energy flows