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2023

National Report

CYPRUS ENERGY REGULATORY AUTHORITY

CYPRUS ENERGY REGULATORY AUTHORITY

**2023 NATIONAL REPORT
to the European Commission for the year 2022**

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LIST OF ABBREVIATIONS

ACER	Agency for the Cooperation of Energy Regulators
CEER	Council of European Energy Regulators
CEF	Connecting Europe Facility
CERA	Cyprus Energy Regulatory Authority
CRA	Core Regulated Activity
DEFA	Natural Gas Public Company Ltd (CYGAS)
DSO	Distribution System Operator
EAC	Electricity Authority of Cyprus
EastMed	Eastern Mediterranean
ETYFA	Natural Gas Infrastructure Company Ltd
FtM	Front-of-the-Meter
HDVC	High Voltage Direct Current
ICE	Internal Combustion Engines
LNG	Liquefied Natural Gas
LNG Operator	Liquefied Natural Gas System Operator
LNG Owner	Liquefied Natural Gas System Owner
MDMS	Meter Data Management System
MECI	Ministry of Energy, Commerce and Industry
MRTC	Meter Repair & Testing Centre
ODS	Owner of the Distribution System
OTS	Owner of the Transmission System
PCI	Project of Common Interest
PSO	Public Service Obligations
PV	Photovoltaic
RAVB	Regulated Asset Value Base
RES	Renewable Energy Sources
RES-E	Electricity Generation Systems from RES
SGC	Southern Gas Corridor
SRA	Separated Regulatory Accounts
TDR	Transmission and Distribution Rules
TSO	Transmission System Operator
TSOC	Transmission System Operator of Cyprus
TSR	Trading and Settlement Rules
TYNDP	Ten Year National Development Plan

1. FOREWORD

The "energy trilemma" is characterized by security of supply, high energy costs, as well as ambitious and stricter climate goals. All three of these elements support the univocal solution of Green Transition.

The developments of 2022 caused 'dark clouds' to the vision of green transformation, bringing about significant instability in the European energy market which gradually transformed into what is now known as the "energy crisis". This crisis is the result of a chain of factors as well as their extremely critical and dangerous juncture. The spike in greenhouse gas emission allowance prices together the rise in fuel prices due to the global financial recovery which was boosted as a result of the easing of the pandemic measures in the second half of the year, were only two of the factors that contributed to higher electricity prices. The challenges and uncertainties faced by the global energy system in 2022, peaked almost 50 years after the 1970s energy crisis. At national level and from an energy standpoint, the high electricity prices highlighted the weaknesses of the "electrically isolated" systems and the lack of "energy flexibility".

In 2022, Cyprus' electricity market was given a taste of the future, with greater penetration of electricity from renewable energy sources (RES-E). Nowadays, Cyprus boasts approximately 407MW of photovoltaic systems, 157MW of wind systems, and 13MW of biomass systems in operation, namely a total installed RES-E capacity of 577MW and a total installed capacity of conventional electricity generation plants of 1483MW. In other words, 28% of the installed capacity concerns RES-E systems. Regarding the contribution of RES-E, it represented 15% of the final annual energy consumption in 2022 and is expected to increase further in 2023 and in the coming years.

Cyprus is going through a period of significant changes and challenges that stem from the introduction of the competitive electricity market, but also the continuous efforts that are being made for the island to cease being "electrically isolated" from the rest of Europe. At the forefront of the developments, CERA acted quickly and will continue to do so driven by the creation of new regulations that will always focus on the consumer, the environment, but also the economy.

This is the reason that CERA has included actions and activities concerning energy transition regulatory issues in its strategic goals, including:

- The supervision and continuous regulation of the transitory regulation and the competitive electricity market,
- The surveillance and implementation of plans and the supervision of the emerging natural gas market,
- The development of a regulatory framework based on the "Green Deal" and the "Fit for 55" package,
- The fulfilment of RES targets by 2030,
- The integration of energy storage systems into the electrical system,

- The implementation of regulatory decisions to transform the Cyprus electrical system into a smart grid,
- To ensure the containment of the energy cost for the national economy and consumers,
- The continuous update of consumers and investors regarding electricity and natural gas market regulatory issues,
- The creation of a regulatory framework for Cyprus' transition to hydrogen economy.

At the same time in the European Union (EU), after bouncing back from the pandemic and returning to normalcy, the natural gas price had skyrocketed in 2022. The EU is currently amid a natural gas crisis, paying a high price for its dependence on Russian natural gas. The European Commission has already presented the RePowerEU plan to rapidly reduce the EU's dependence on Russian natural gas and fast forward RES investments together with energy efficiency action plans and to develop the hydrogen market in the EU. In reality, this is an EU endeavour to fast forward the green transition which will be achieved in a socially fair, cost effective and competitive way. The EU RePowerEU plan to speed up the use of renewable energy sources, including storage technologies as well as hydrogen, energy efficiency and the integration of the internal electricity market to increase the capacity of electricity interconnections between Member States is a step in the right direction.

In Cyprus, the situation is not much better because the spike in liquid fuel costs and greenhouse gas emissions allowance costs, has increased the cost of electricity to unprecedented levels. In order to address the challenges associated with the energy transition of the isolated island electricity systems, and Cyprus in particular, the immediate upgrade of the electricity grid is needed in the short term, so that the flexibility of the electricity system can allow for the integration of natural gas and energy storage technologies, to enable the additional penetration of renewable energy sources into Cyprus' energy balance. In addition, the promotion of electric mobility, with the application of "vehicle to grid" (V2G) technology, i.e., the bidirectional flow of electricity between the electric car and the electric grid, constitutes an important component of Cyprus' future energy system.

Cyprus is the only non-interconnected EU Member State. With proper planning and the creation of appropriate electricity grid interconnections this will be a thing of the past and Cyprus will be able to take advantage of its energy potential to the maximum extent and be upgraded to an energy hub for the transmission of electrical energy to and from the European Union and to and from Israel and Egypt, while increasing our energy security.

CERA's actions are always focused on the transition to a green economy, as well as the achievement of environmental sustainability and climate neutrality that will ensure the long-term development and strengthening of our country's economy. In this context, consumer protection is a fixed goal of utmost importance for CERA.

In this regard, in 2022 CERA published a series of key decisions, and undertook and implemented related initiatives and actions within the framework of the competencies specified by national and community law. Some of these key decisions and actions of CERA regarding

the energy sector concern:

- the determination of general principles and guidelines for connection charges to the transmission and distribution systems,
- the provision of guidance for the preparation of the transmission system and distribution system connection process,
- the establishment of the basic principles for the formulation of the Ten-Year Transmission System Development Plan,
- the establishment of the basic principles for the formulation of the Ten-Year Distribution System Development Plan,
- the amendment to the statement of regulatory practice and electricity tariffs methodology,
- the provisional regulation of the RES-E market price for the plan of the Republic of Cyprus “RES generated electricity with the ultimate integration of the projects into the competitive electricity market plan of October 2017” and
- the statement of regulatory practice for the supply of natural gas through virtual pipelines.



Dr. Andreas Poulikkas
Chairman

2. MAIN DEVELOPMENTS IN THE GAS AND ELECTRICITY MARKETS

This Report covers the annual reporting obligation, required by the Article 59(1)(i) of the Directive (EU) 2019/944 on common rules for the internal market in electricity and Article 41(1)(e) of the Directive 2009/73/EC concerning common rules for the internal market in gas.

The Report concerns the calendar year 2022 and follows the reporting structure recommended by the Council of European Energy Regulators (CEER).

Since there is no natural gas market in Cyprus, the report focuses mainly on the internal electricity market and covers this sector for the year 2022.

During the year under review, CERA, taking into account the trends followed at European level and bearing in mind the needs of the energy system in Cyprus, had to take a series of important decisions in order to complete the regulatory framework in the energy sector, focusing on the security of supply, the consumer protection and ensuring fair competition through the development of an economically viable and efficient electricity market and the possibility of increasing the share of RES in the competitive market.

During the year under review, CERA issued seven (7) Regulatory Decisions:

- Regulatory Decision 01/2022 (KDP 105/2022) on the determination of general principles and guidelines for connection charges to the transmission and distribution systems.
- Regulatory Decision 02/2022 (KDP 106/2022) on the provision of guidance for the preparation of the connection process to the transmission system and distribution system.
- Regulatory Decision 03/2022 (KDP 107/2022) on the establishment of basic principles for the formulation of the Ten-Year Transmission Development Plan.
- Regulatory Decision 04/2022 (KDP 108/2022) on the establishment of basic principles for the formulation of the Ten-Year Distribution National Development Plan.
- Regulatory Decision 05/2022 (KDP 183/2022) on the amendment of the statement of regulatory practice and electricity tariffs methodology.
- Regulatory Decision 06/2022 (KDP 257/2022), on the provisional regulation of the RES-E market price for the plan of the Republic of Cyprus “RES generated electricity with the ultimate integration of the projects into the competitive electricity market plan of October 2017”.
- Regulatory Decision 07/2022 (KDP 282/2022) on the statement of regulatory practice for the supply of natural gas through virtual pipelines.

Figure 1 presents the licensing of activities of the electricity and natural gas markets.

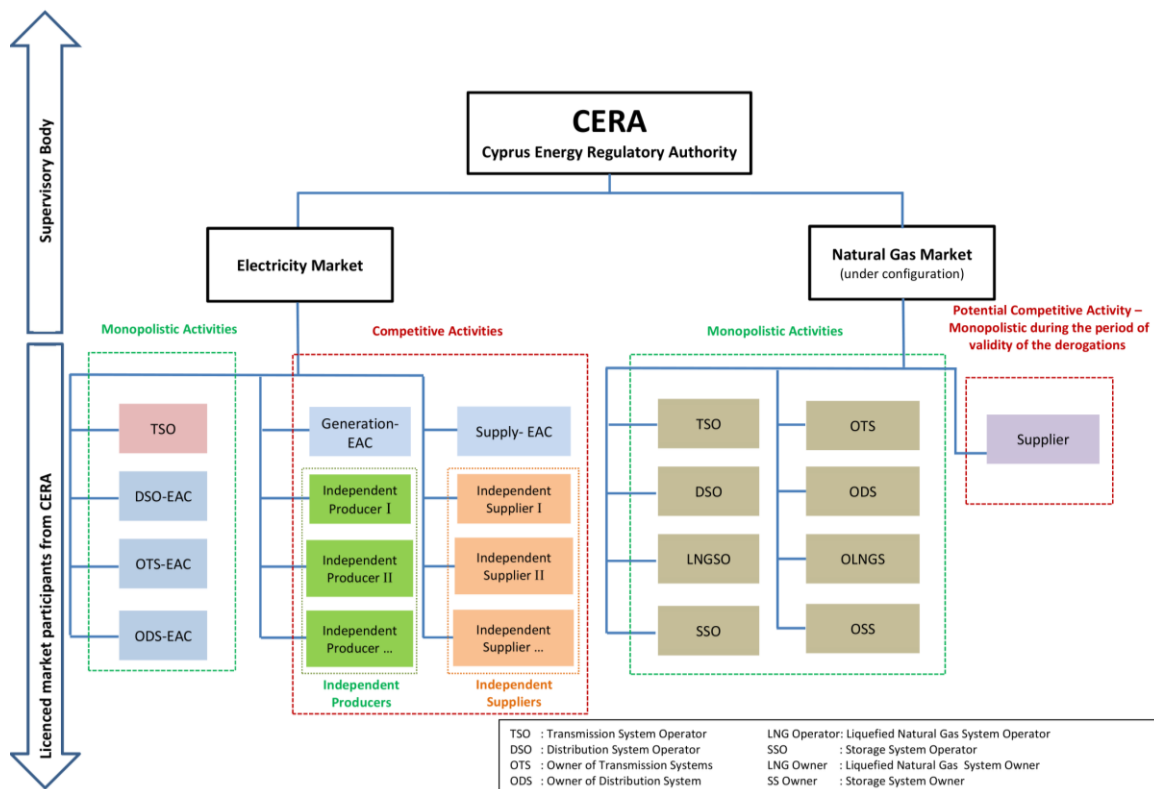


Figure 1. Licencing of activities

2.1. EVALUATION OF THE MARKET DEVELOPMENT AND REGULATION

The energy sector in Cyprus is undergoing fundamental transformations concerning its structure and organisation, its institutional framework and the diversification of its energy mix. In an effort to open up the market to new participants, CERA has proposed the net-pool model as being the most appropriate trading arrangement approach for the Cyprus electricity market. The formulation of a net-pool incorporates both, a bilateral contracts market and a central Day Ahead Market. In the near future, an Intra-Day Market will be organized. The proposed design includes also a real time balancing mechanism that provides the Transmission System Operator (TSO) with the ability to purchase the required operational reserves, activate balancing services and settle imbalances.

Due to the delays in the implementation of the competitive electricity market in Cyprus, which mainly concern the installation of two software programs, prerequisites for the operation and monitoring of the electricity market, CERA decided on a transitory regulation of the electricity market in Cyprus, prior the full implementation of the new electricity market model. The transitional arrangement permits bilateral contracts between producers and suppliers (above a threshold set by CERA – (i) for producers with a production license above 4.5 MW and (ii) for suppliers with contract for supply of energy to consumers with total agreed power above 10 MW) where clearing will be done on a monthly basis. The contracts involve only the provision of energy, and a simple arrangement would require no extra software for its implementation by the TSO and DSO. CERA, with a new Decision, to enable larger number of producers to

participate in the transitional arrangement, decided to reduce the threshold for producers to 1 MW. This threshold has been further reduced (April 2019) to 50 kW to allow for the participation of more producers in the transitional market. The transitory regulation will be based on bilateral contracts between producers and suppliers for the supply of a standard quantity of electricity (kWh) on a monthly basis. The transitory regulation of the electricity market in Cyprus started on 1 September 2017 and will be in force until the full implementation of the new electricity market model.

The national electricity market was given a taste of the future, with a rapid penetration of renewable energy sources and concerns about security of supply. At the same time, after bouncing back from the pandemic and the returning to normalcy, the greenhouse gas emission allowances price has seen a rapid increase due to the European policies on Green Energy.

The following figure shows the ranking of Cyprus compared to the rest of the EU Member States in terms of electricity prices for the period 2010 – 2022.

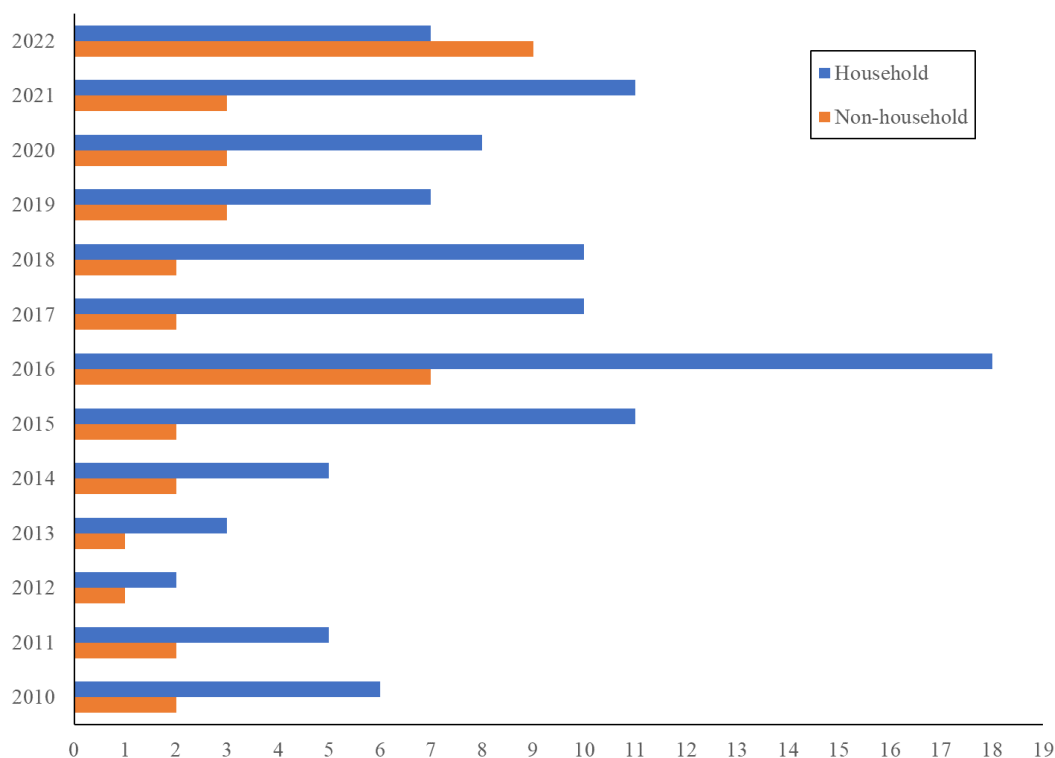


Figure 2. Ranking of Cyprus compared to the rest of the EU Member States in terms of electricity prices for the period 2010 - 2022¹

2.2. REPORT ON THE IMPLEMENTATION OF THE CLEAN ENERGY PACKAGE

It should be noted that Articles 3, 5 and 6, Article 7(1), points (c) and (g) of Article 7(2)) Articles 8 to 17, Article 18(5) and (6), Articles 19 and 20, Article 21(1), (2) and (4) to (8), point (c) of Article 22(1), points (b) and (c) of Article 22(2), the last subparagraph of Article 22 (2), Articles

¹ Source: <https://ec.europa.eu/eurostat/databrowser/view/TEN00117/default/table>

23 to 27, Article 34(1), (2) and (3), Articles 35 to 47, Article 48(2) and Articles 49 and 51 of Regulation (EU) 2019/943 do not apply to Cyprus until its transmission system is connected to other Member States' transmission systems via interconnections.

In accordance with the Regulation (EU) 2019/943, in the event the transmission system of Cyprus is not connected to other Member States' transmission systems by means of interconnections by 1 January 2026, Cyprus shall assess the need for derogation from those provisions and may submit a request to prolong the derogation to the Commission. The Commission shall assess whether the application of the provisions risks causing substantial problems to the operation of the electricity system in Cyprus or whether their application in Cyprus is expected to provide benefits to the functioning of the market. Based on that assessment, the Commission shall issue a reasoned decision to prolong the derogation in full or in part.

On 9 December 2022, the House of Representatives, for the purposes of partial harmonisation with the Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources, approved the Law on the Promotion and Encouragement of the Use of Renewable Energy Sources of 2022.

The purpose of the Law on the Promotion and Encouragement of the Use of Renewable Energy Sources of 2022 is to promote and encourage the use of renewable energy sources. In addition, a common framework for the promotion of energy from renewable sources is established which sets:

- a binding Union target for the overall share of energy from renewable sources in the Union's gross final consumption of energy in 2030, and
- rules on financial support for electricity from renewable sources, on self-consumption of such electricity, on the use of energy from renewable sources in the heating and cooling sector and in the transport sector, on regional cooperation between the Republic and Member States and between the Republic and third countries, on guarantees of origin, on administrative procedures and on information and training.

In 2023, CERA started working on the formation of the regulatory framework concerning the promotion of active customers and renewables self-consumers, the facilitation of the establishment of citizen energy communities and renewable energy communities, the determination of demand response through aggregation, the provision of incentives for the use of flexibility in distribution networks and the integration of electromobility into the electricity network in the Republic of Cyprus, in order to comply with the provisions of Articles 15 – 17 and 32 – 33 of Directive 2019/944 and Articles 21 – 22 of Directive 2018/2001. CERA's goal is to establish the regulatory framework concerning the above provisions by the first quarter of 2024.

Risk-Preparedness Plan

Regulation 2019/941 on risk-preparedness in the electricity sector lays down rules for cooperation between Member States with a view to preventing, preparing for and managing electricity crises in a spirit of solidarity and transparency and in full regard for the requirements of a competitive internal market for electricity. Further to Council of Ministers Decision No. 88,943, CERA was appointed the competent authority for the implementation of the provisions of Regulation 2019/941.

Although Cyprus has received a derogation from specific provisions of Regulation 2019/941, until is directly connected with another Member State, it has decided to move forward with the determination of national electricity crisis scenarios and its risk-preparedness plan.

In 2021 CERA approved the Draft Risk-Preparedness Plan for Cyprus and communicated this to the Electricity Coordination Group (ECG) for consultation. The ECG did not issue any specific recommendations on the draft submitted by CERA and no comments were submitted by other members of the ECG.

Therefore, by Decision 3/2022, dated 5 January 2022, CERA approved the Risk-Preparedness Plan in the electricity sector, its communication to the European Commission and its publication on the CERA website.

The risk-preparedness plan for Cyprus, implements procedures and measures to reduce the possibility of electricity crises, where possible, and to mitigate the impact of crisis scenarios should they occur. These procedures and measures can be summarized into the following categories:

- Prevention/minimization of the probability of total or partial system downtime.
- Minimization of the probability of deficient generation adequacy. Preparing the system for high demand periods, when the system operates close to its stability limits, i.e., in the hot summer months.
- Arrangements for the emergency operation of the National Energy Control Centre of Cyprus (NECC).
- Physical security and cybersecurity measures.

3. THE ELECTRICITY MARKET

3.1. NETWORK REGULATION AND TECHNICAL FUNCTIONING

3.1.1. Unbundling

Article 43 of the Directive 2019/944 provides for the ownership unbundling of transmission systems and transmission system operators. However, Cyprus, according to Article 66 (Derogations) of the Directive 2019/944, has obtained an exemption from Article 43 and therefore Cyprus has maintained its present regime on TSO unbundling.

The Cyprus TSO (TSOC) is legally unbundled and functions independently in terms of organisation and decision making from the Owner of the Transmission System (OTS), the Owner of the Distribution System (ODS) and the Distribution System Operator (DSO) which is the Electricity Authority of Cyprus (EAC).

The Laws Regulating the Electricity Market of 2021 and 2022 provide, among others, for the independence of the TSOC from the EAC. However, in 2020 the TSOC is provided with all of its employees by EAC.

According to the Laws Regulating the Electricity Market of 2021 and 2022, in order to ensure the independence of the TSOC, the following minimum criteria apply, the TSOC:

- does not participate in corporate structures of the integrated electricity undertaking, which is responsible, directly or indirectly, for the day-to-day operation of the generation, distribution and supply of electricity,
- shall apply appropriate measures to ensure that its persons act independently,
- has effective decision-making powers, independent of the integrated electricity undertaking, regarding the resources necessary for the operation, maintenance, and development of the network, and
- establishes a compliance program, which is submitted to CERA for approval, which sets the measures taken and defines the obligations of its employees, in order to ensure the impartial behavior of its staff and submits to CERA and publishes an annual report in which the measures taken and the level of satisfaction with the program are described.

The ODS has also been nominated as the DSO and although it is not independent in the sense that the TSOC is, it has the same duty of safeguarding third party access to the distribution network and the equal treatment of all users of the said network. DSO is also provided with all of its employees by EAC.

Accounting Unbundling

According to the Article 10 of the Laws Regulating the Electricity Market of 2021 and 2022, the electricity undertakings keep in their internal accounting separate accounts for each of the transmission and distribution activities, just as they would be required to do if those activities were carried out by separate undertakings, to avoid discrimination, cross-subsidies and distortion of competition. The accounts may be consolidated for other electricity-related activities unrelated to transmission and distribution.

Electricity undertakings, which have enforced Public Service Obligations, keep separate accounts for the activities related to these services.

The EAC in its internal accounting system, keeps Separate Accounts for each licensed activity, and has a copy of its above accounts available for public inspection at its registered office in the Republic of Cyprus.

By Decisions 82/2022 and 361/2022, CERA instructed EAC to publish the Separate Accounts for the years ended on 31 December 2020 and 2021 respectively, which were audited and approved by its Board of Directors, on the EAC website, with explanations on how to calculate the return on average Regulated Asset Base (RAB) for the Core Regulated Activity (CRA) of Generation, Transmission and Distribution and the Margin Cost on the commercial and accounting management for the CRA of Supply.

Functional Unbundling

In previous years, based on the provisions of Regulatory Decision 04/2014 “Functional unbundling of EAC activities”, as well as the functional unbundling regulatory framework, CERA moved forward, with the contribution of external consultants, to the review of the implementation of the functional unbundling of EAC's activities, by carrying out specialised audits at three different time periods.

In every case, the maintenance and deepening of the functional unbundling of the Vertically Integrated Undertaking - EAC requires, inter alia, compliance with continuous assessment of its proper implementation. Thus, by way of a series of Decisions, in 2022, CERA moved forward with targeted compliance checks of the EAC with the principles of functional unbundling, the results of which are currently being processed by CERA.

By Decision 342/2022, dated 25 October 2022, CERA decided to proceed with the Pilot Compliance Check of the functional unbundling of the EAC's Core Regulated Transmission Activity which, if deemed necessary, can be extended to every other organizational unit of the Vertically Integrated Undertaking (VIU) - EAC, which affects the functioning of the said CRA.

3.1.2. Network extension and optimization

According to the Laws Regulating the Electricity Market of 2021 and 2022, CERA, by a Regulatory Decision, gives instructions to the TSOC and the DSO to prepare and issue technical rules, which are subject to CERA's approval, on the operation of the transmission system and the distribution system, respectively.

Transmission Rules

According to the Laws Regulating the Electricity Market of 2021 and 2022, Transmission Rules (TR):

- Govern the technical requirements and restrictions applied by licence holders whenever they want to connect to the transmission system or use the transmission system or for the transmission of electricity.
- Ensure that the technical terms applicable to licence holders who wish to connect or use the transmission system do not discriminate against licence holders.
- Promote efficiency, reliability and economy in the use and development of the transmission system.
- Are fully harmonized with the provisions of Regulation (EU) 2019/943, where applicable.

The provisions of the TRs shall be adhered to by final customers to the extent required by the terms of their connection with the transmission network and by all licence holders or by persons to whom exemptions have been granted, to the extent required by their licences or exemptions, respectively.

In the reference year, a draft TR – Version 1.0.0 was submitted to CERA, which CERA reviewed, and the results were forwarded to the TSOC with correction guidelines.

Distribution Rules

According to the Laws Regulating the Electricity Market of 2021 and 2022, Distribution Rules (DR):

- Govern the technical requirements and restrictions applied by licence holders whenever they want to connect to the distribution system or use the distribution system or for the distribution of electricity.
- Ensure that the technical terms applicable to licence holders who wish to connect or use the distribution system do not discriminate against licence holders.
- Promote efficiency, reliability and economy in the use and development of the distribution system.
- Are fully harmonized with the provisions of Regulation (EU) 2019/943, where applicable.

The provisions of the DRs shall be adhered to by final customers to the extent required by the

terms of their connection with the distribution network and by all licence holders or by persons to whom exemptions have been granted, to the extent required by their licences or exemptions, respectively.

In the reference year, a draft DR – Version 1.0.0 was submitted to CERA, which CERA reviewed, and the results were forwarded to DSO with correction guidelines.

Table 1 shows the basic features of the transmission and distribution networks for the last 5 years.

Table 1. Basic features of the transmission and distribution networks

<i>Indicator</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>
<i>Number of TSOs</i>	1	1	1	1	1
<i>Extension of TSO grid (Km)</i>	1,320	1,359	1,362	1,382	1267.6
<i>Sum of all TSO investments and expenditures in networks (Mill EUR)</i>	38.3	42.6	14.0	13.0	45.5
<i>Number of DSOs</i>	1	1	1	1	1
<i>Extension of DSO grid (Km)</i>	26,363	26,708	27,130	27,623	28,170
<i>Sum of all DSO investments and expenditures in networks (Mill EUR)</i>	115.0	88.0	40.0	45.0	40.3

TSOC and DSO compliance check pursuant to the regulatory framework for the preparation of a thorough techno-economic feasibility study concerning the redesign of the transmission system.

With respect to the provisions of Regulatory Decision No. 02/2019 (KDP 204/2019) “on the preparation of thorough techno-economic feasibility study for the redesign of the transmission and distribution system 2021-2030”, CERA performed a compliance check of DSO and TSOC, the findings were recorded, and specific deviations were highlighted regarding the TSOC’s and DSO’s compliance with the regulatory framework.

Then, having regard to these findings, CERA took the appropriate actions pointing out these findings to the TSOC and DSO with instructions for their rectification and full implementation and compliance with the regulatory framework. In this respect, TSOC and DSO jointly announced, that a more worthwhile and reliable supplementary study will be submitted to include very high RES penetration scenarios, marking December 2024 as the deadline for this submission.

At the same time, CERA evaluates the implementation of the actions and activities resulting from the submitted study through progress reports which are prepared by a Permanent System Operators Cooperation Group and are submitted on a six-monthly basis.

Compliance check of TSOC pursuant to the regulatory framework for the formulation of the Ten-Year Transmission System Development Plan

With respect to the provisions of Regulatory Decision No. 03/2022 (KDP 107/2022 “on the establishment of basic principles for the formulation of the Ten-Year Transmission System Development Plan” CERA performed a TSOC compliance check, the findings were recorded and specific deviations were highlighted regarding the TSOC’s compliance with the regulatory framework.

Compliance check of DSO pursuant to the regulatory framework for the formulation of the Ten-Year Distribution System Development Plan

With respect to the provisions of Regulatory Decision No. 04/2022 (KDP 108/2022 “on the establishment of basic principles for the formulation of the Ten-Year Distribution System Development Plan” CERA performed a DSO compliance check, the findings were recorded and specific deviations were highlighted regarding the DSO’s compliance with the regulatory framework.

Ten-Year Transmission System Development Plan

By Regulatory Decision 03/2022 (KDP 107/2022), CERA decided to set the basic principles for the formulation of the Ten-Year Transmission System Development Plan (TYNDP-Transmission) and to repeal Regulatory Decision 03/2020 (KDP 165/2020) “on the Establishment of the Basic Principles for the Formulation of the Ten-Year Transmission System Development Plan”.

For the continuous updating of all licensees, licence applicants, and any other interested parties, in the context of complete transparency in view of the imminent operation of the competitive electricity market in Cyprus, the Regulatory Decision provides for the inclusion of the following criteria in addition to the provisions of the Law:

- The distinction of projects that are included in the TYNDP-Transmission into reinforcement and expansion projects aimed at separating the projects that are deemed necessary for improving the operation of the transmission system (reinforcement projects) and projects that are required for the connection of users to the system (producers, high voltage customers).
- The preparation of a techno-economic feasibility analysis for every new transmission project that may be included in the TYNDP-Transmission.
- The total estimated cash flows of all transmission projects.
- Detailed time schedule for the implementation of the transmission projects.
- Any environmental and/or other restrictions during the load flow simulations.

By Decision 115/2022, CERA approved the TYNDP-Transmission 2022 – 2031 which was submitted by the TSOC. In the context of reducing expenses as much as possible and

containing financial expenses, CERA instructed the TSOC to make an effort during the implementation of the projects included in the TYNDP-Transmission, to reduce the expected expenses to the maximum extent possible, taking into account the obligations deriving from the legislation as well as the obligation for the operation of an efficient, coordinated, safe, reliable and economically viable transmission system.

Ten-Year Distribution Development Plan

By Regulatory Decision 04/2022 (KDP 108/2022) CERA decided to set basic principles for the formulation of the Ten-Year Distribution System Development Plan (TYNDP-Distribution).

For the continuous updating of all licensees, licence applicants, and any other interested parties, in the context of complete transparency in view of the imminent operation of the competitive electricity market in Cyprus, the Regulatory Decision provides for the inclusion of the following criteria in addition to the provisions of the Law:

- The distinction of projects that are included in the TYNDP-Distribution into reinforcement and expansion projects aimed at separating the projects that are deemed necessary for improving the operation of the distribution system (reinforcement projects) and projects that are required for the connection of users to the system (producers, medium and low voltage customers).
- The inclusion of distribution system modernization projects.
- The inclusion of projects that aim at improving energy quality and reducing distribution system energy losses.
- The inclusion of projects that aim at better serving distribution system users.
- The total estimated cash flows of all distribution projects.
- Detailed time schedule for the implementation of the distribution projects.

The Regulatory Decision also determines that within six months prior to the end of each two-year period (starting by December 2022 at the latest), the DSO shall submit the proposed TYNDP-Distribution for the decade starting in January of the following year to CERA for approval. The validity of the TYNDP-Distribution shall enter into force from the CERA approval date.

The DSO submitted the TYNDP-Distribution for the decade 2023 – 2032 in 2023 which was approved by CERA by Decision 195/2023.

3.1.3. Network tariffs

CERA, as the regulator, has the duty and the authority to approve the methodologies used to calculate the connection fees and the network use charges, and establish the terms and conditions for connection and access to the transmission and distribution system. The regulator may also require from the TSO and DSO to change the tariffs or methodologies used for determining the transmission and distribution tariffs to ensure that these are proportional and

non-discriminatory.

By Regulatory Decision 02/2022, CERA provided guidance for the preparation of the connection process to the transmission system and distribution system by the competent Operators which set out the necessary procedures, the submitted applications, the necessary information, and every detail regarding the connection of a new user to the transmission/distribution system or the amending connection of an existing user, as well as other relevant details and information for the preparation of the relevant Connection and Use of the System Contract, and such contract templates for every user type.

By Regulatory Decision 01/2022, CERA determined the general principles and guidelines for connection charges to the transmission and distribution systems to the responsible Operators (TSOC and DSO), in order to set out the charging policy for connection to the transmission system and the distribution system.

The general principles and guidelines for the preparation of the charge policy which are determined in the Regulatory Decision take into account that the charge policy for connection to the transmission and distribution systems depends on various parameters and is determined according to the connection's voltage level, the type of network user (e.g., consumer, producer or self-producer) or even the user category (e.g. household, commercial or industrial consumer, etc.), particularly for the distribution system, by following the growth potential of the system and the market while resolving any new issues that arise.

Furthermore, by Decision 01/2022, CERA, decided that:

- For 2022, the regulated tariffs for T-NH, T-AS, T-NM, T-NL, T-MET, T-W, and T-BM of 2021 will remain in effect.
- The approval of the Allowed Revenues for the TSOC cost recovery tariff for 2022, at €7,009,800.
- The approval of the tariff for the recovery of the expenses of the TSOC (T-TSO) for 2022, at 0.11€/kWh which, taking into account the allowed revenues for 2022, the surplus of 2018 is expected to be refunded to consumers.

The charges for the use of network for the year 2018 - 2022, as approved by CERA are shown in Table 2.

Table 2. Charges for the use of networks and other operational expenses

CHARGES FOR THE USE OF NETWORKS AND OTHER OPERATIONAL EXPENSES		2018	2019	2020	2021	2022
		€cents/k Wh	€cents/k Wh	€cents/k Wh	€cents/k Wh	€cents/k Wh
Use of Transmission System Tariff (T-NH) for consumers connected to:	High Voltage	0.51	0.51	0.50	0.48	0.43
	Medium Voltage	0.81	0.81	0.79	0.76	0.69
	Low Voltage	0.82	0.82	0.80	0.77	0.70
Use of Distribution System Tariff (T-NM) for consumers connected to:	High Voltage	-	-	-	-	-
	Medium Voltage	0.93	0.93	0.90	0.89	1.03
	Low Voltage	0.95	0.95	0.92	0.91	1.05
Use of Distribution System Tariff (Low Voltage) (T-NL) for consumers connected to:	High Voltage	-	-	-	-	-
	Medium Voltage	-	-	-	-	-
	Low Voltage	1.08	1.08	1.05	1.03	1.16
Tariff for the recovery of expenses of the Cyprus TSO (T-TSO)		0.09	0.15	0.15	0.11	0.09
Tariff for the provision of Ancillary Services and long-term reserve (T-AS) for consumers connected to:	High Voltage	0.61	0.61	0.63	0.64	0.64
	Medium Voltage	0.62	0.62	0.64	0.65	0.64
	Low Voltage	0.64	0.64	0.65	0.66	0.65

Figure 3 presents the network usage fees for consumers connected to low voltage (includes T-NH, T-NM, T-NL, T-TSO and T-AS). It is noted from the figure, that the network usage fees decreased by 21.5% since 2016.

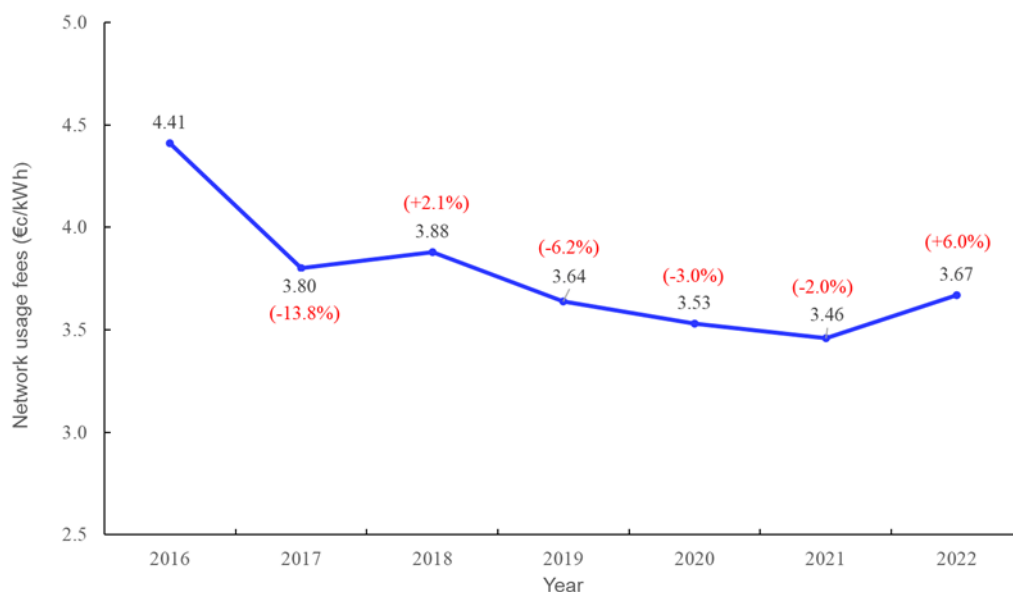


Figure 3. Network usage fees for consumers connected to low voltage

3.1.4. Monitoring balance of supply and demand

Adequacy of electricity supply

Pursuant to the Laws Regulating the Electricity Market of 2021 and 2022, CERA is responsible for the adequacy of electricity in Cyprus, the reliability and security of the generation, transmission and distribution systems, as well as the quality of electricity supply. CERA systematically monitors the adequacy, quality and reliability of the electricity supply and, whenever it detects any shortfalls, it informs the Minister of Energy, Commerce and Industry, who, after consulting with CERA and TSOC, takes all indicated corrective measures.

Figure 4 presents the installed operational capacity of existing generation plants at system peak demand. This figure does not take system operation, such as scheduled maintenance of electricity generation plants, unforeseeable damage to electricity generation plants, but also demand variation, into account. As presented in Figure 4, during peak demand, provided that all plants are available, demand can be met by the existing generation.

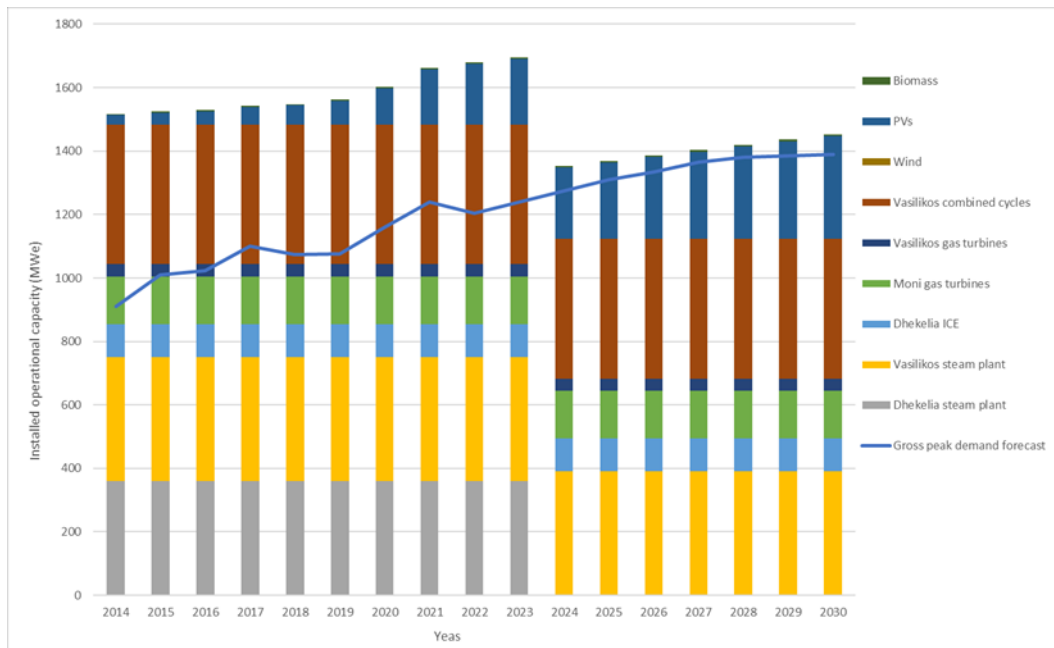


Figure 4. Installed Operational Capacity (MWe) for the period 2014 - 2030

The following important records concern the recorded total electrical energy generated during 2022:

- Total gross electricity generated reached 5,036,062 MWh.
- Total electricity generation from conventional plants amounted to 4,170,264 MWh.
- Total electricity generation from RES amounted to 865,798 MWh.
- Energy injected into the transmission system from the conventional plants reached 4,243,286 MWh.
- Energy injected into the transmission system from the RES units reached 173,205 MWh.
- Energy injected into the distribution system from the RES units reached 692,593 MWh.
- Energy from the transmission system which was injected from the distribution system reached 4,233,158 MWh.
- Reported transmission system losses amounted to 53 GWh, or 1.2%, of the energy injected into the transmission system.
- Reported distribution losses amounted to 91 GWh, or 2.2% of the energy injected into the distribution system.

The annual load factor for 2022 stood at 52.80% compared to the load factor for 2021 which stood at 46.95%. The load factor is calculated as the ratio of the annual final gross electricity consumption to the annual electrical energy that can be generated with the maximum capacity production recorded in the year, which includes conventional and RES generation.

Figure 5 shows the total electricity generation in 2022.

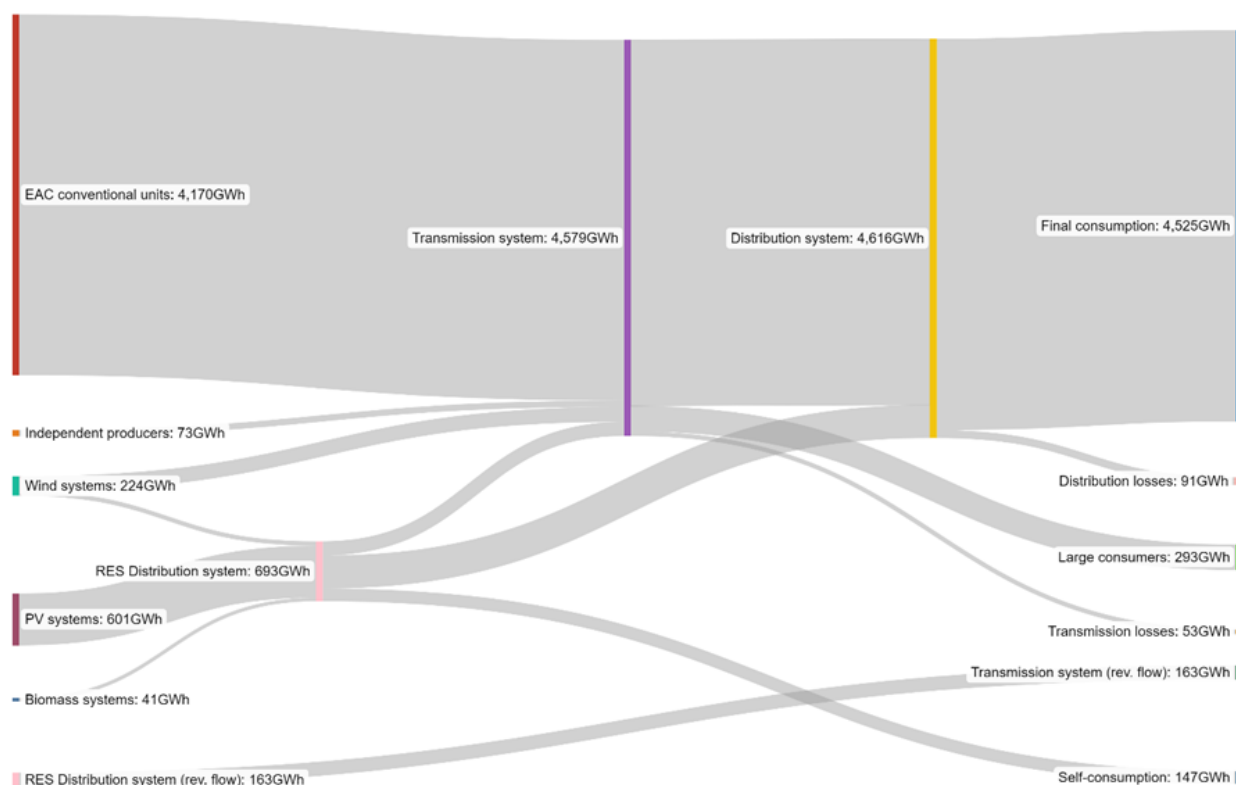


Figure 5. Sankey diagram for the total electricity generation in 2022

Monitoring investments in generation

Cost reflective market prices and transparent market mechanisms operated by independent operators under rules and regulations of an independent regulator should provide relevant signals for investors to timely respond to such needs. However, the combination of a small system size, without interconnections and natural gas availability, as in the case of Cyprus, reduces the margins for the effective response to such market signals to critical levels.

In line with the spirit of the Directive, the Law assigns priority to the market in offering the appropriate signals to investors to construct the most appropriate type and size of generation capacity, in order to meet the various needs of the market. To that effect, the Law adopts and prescribes a licensing procedure, implemented through licenses issued by CERA to interested prospective investors, subject to various criteria which are only supposed to safeguard participants rather than prescribe specific solutions.

Moreover, recognising the specificities of electricity and its importance for the economy, the Law introduces a safety valve, in the form of a tendering process, by which CERA may justifiably intervene when the licensing process appears to be unable to timely bring about the needed generation capacity. For the specification of the need based on which the tendering process may be initiated the Law refers to the mandate of CERA to act so as to ensure security, continuity, quality and reliability of electricity supply. CERA is thus enabled to require from the TSOC timely information on the expected needs of the system, and may provide the appropriate regulatory signals, where necessary; or, CERA may commence the tendering

process described by the Law where CERA considers that despite such signals, or due to unforeseen circumstances, the market is unable or unwilling to bring about the needed investment. Clearly, the process should be directed to resolve the specific problem identified by the TSOC, which the market cannot address in a timely manner, i.e. it should specify characteristics of new generation corresponding to the requirements of the TSOC.

Figures 6 and 7 depict historical data of the installed capacity of RES and conventional plants, which are connected to the grid. It is observed from the figures that the total installed capacity of RES units has increased significantly in recent years. In 2022, installed capacity of RES units has reached 27% of the total installed capacity of all electricity generation plants in Cyprus.

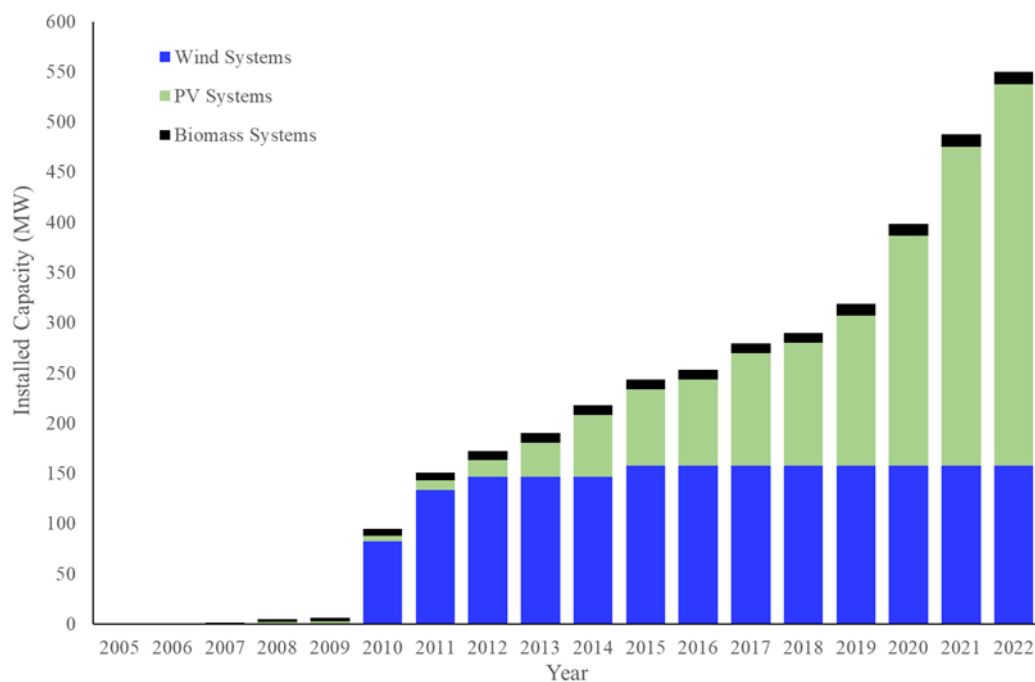


Figure 6. Annual Installed Capacity (kW) RES 2005-2022

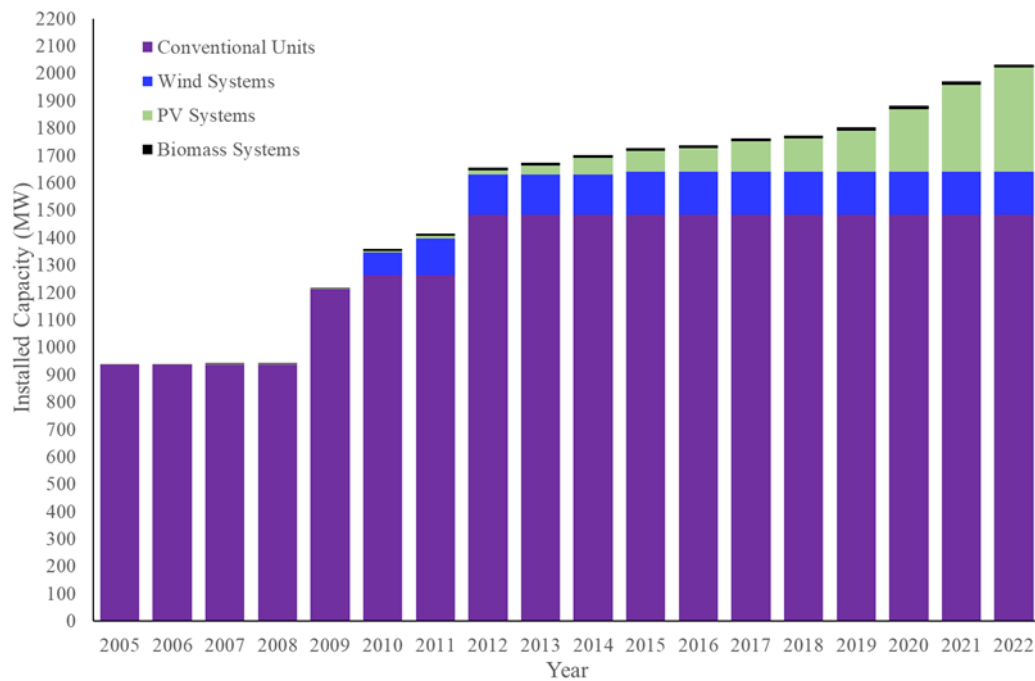


Figure 7. Annually installed capacity (MW) of RES and conventional plants

Figures 8 and 9 depict historical data of the generation from RES and conventional units, which are connected to the grid. It is observed from the figures that the total generation of electricity from RES units has increased significantly in recent years. In 2022, the annual generation of electricity from RES units has reached 17% of the total generation from all the electricity generation plants in Cyprus.

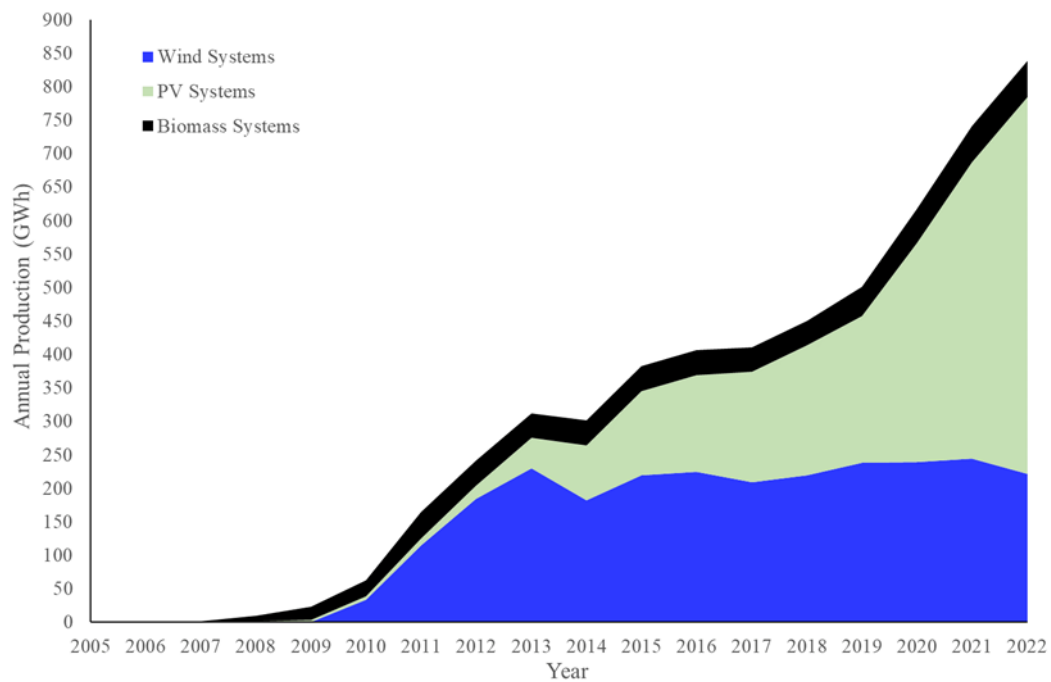


Figure 8. Annual generation (GWh) of RES

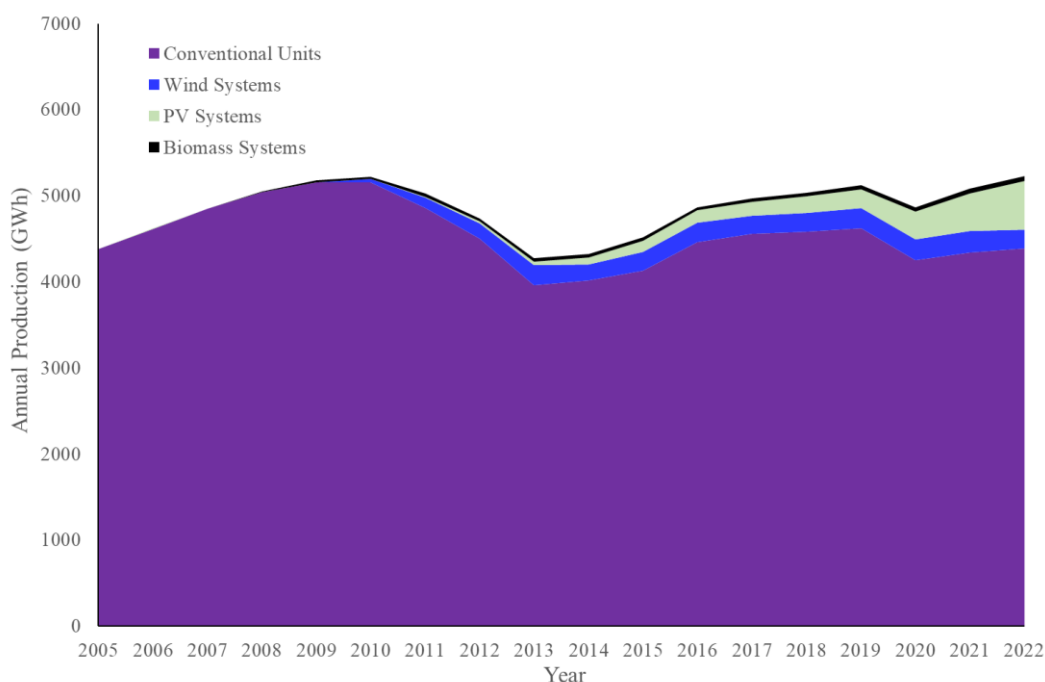


Figure 9. Annual generation (GWh) of RES and conventional plants

Licensing

The licensing of activities related to electricity is regulated by the Laws Regulating the Electricity Market of 2021 and 2022, the Regulating the Electricity Market (Licensing) Regulations and Regulatory Decision 02/2021 entitled “Regulatory Framework for the Granting of the General License”.

The licenses issued by CERA, in accordance with Article 26 of Law Regulating the Electricity Market of 2021, concern the following activities:

- Construction and operation of a power plant with conventional fuels for commercial purposes.
- Construction and operation of a power plant with conventional fuels for self-consumption and reserve purposes with a generating capacity greater than 1MW.
- Construction and operation of a power plant using RES with a generating capacity of more than 8MW.
- Supply of electricity to final customers
- Supply of electricity to wholesale customers.
- Execution of the duties of the Balance Responsible Party.
- Execution of the duties of the Aggregator.
- Installation and/or operation of an electricity storage facility, with the exception of self-consumption electricity storage facilities
- Execution of responsibilities of TSOC.
- Execution of responsibilities of DSO.
- Execution of responsibilities of the Owner of Transmission System (OTS).
- Execution of responsibilities of the Owner of Distribution System (ODS).

- Execution of responsibilities of the Market Operator.
- Execution of duties of the Owner of Interconnector Owner.
- Execution of duties of the Owner of Interconnector Operator.
- Construction of direct line.

Exemptions from the holding of licences that are issued by CERA, in accordance with subparagraph (4) of Article 27 of Laws Regulating the Electricity Market of 2021 and 2022 concern the following activities:

- Construction and operation of a power plant using RES with a generating capacity of more than 50kW to 8MW.
- Construction and operation of a power plant with conventional fuels for self-consumption and reserve purposes with a generating capacity of 30kW up to 1MW.

The General licenses issued by CERA, in accordance with subparagraph (1) of Article 27 of Law Regulating the Electricity Market of 2021, concern the following activities:

- Generation of electricity from power plants that are not connected to the transmission system or distribution system.
- Generation of electricity from power plants with a maximum capacity of up to and including 20kW.
- Generation of electricity for own use from systems with a capacity of up to and including 30kW.
- Generation of electricity from renewable energy source power plants with a capacity of up to and including 50kW.
- Generation of electricity from small-scale high-efficiency cogeneration plants in accordance with the provisions of the Laws on the Promotion of Energy Efficiency in Heating and Cooling and Heat and Power Cogeneration.

License for the construction and operation of power production plants for commercial use

Conventional Units

In 2021, one (1) application was submitted for the granting of a license to construct a power production plant with conventional fuel for commercial purposes with a total capacity of 284,004MWe.

Renewable energy sources (RES)

In 2022, ten (10) applications were submitted for the granting of Construction Licences, for photovoltaic power plants, for commercial purposes, with a total capacity of 503.54MWe and ten (10) Construction Licences were granted for photovoltaic power plants for commercial purposes with a total capacity of 200.6MWe.

The following Figure 10 shows statistical data on licences for the construction and operation of electricity generation plants for commercial purposes that were granted by CERA from conventional units and RES units for the period 2004 to 2022.

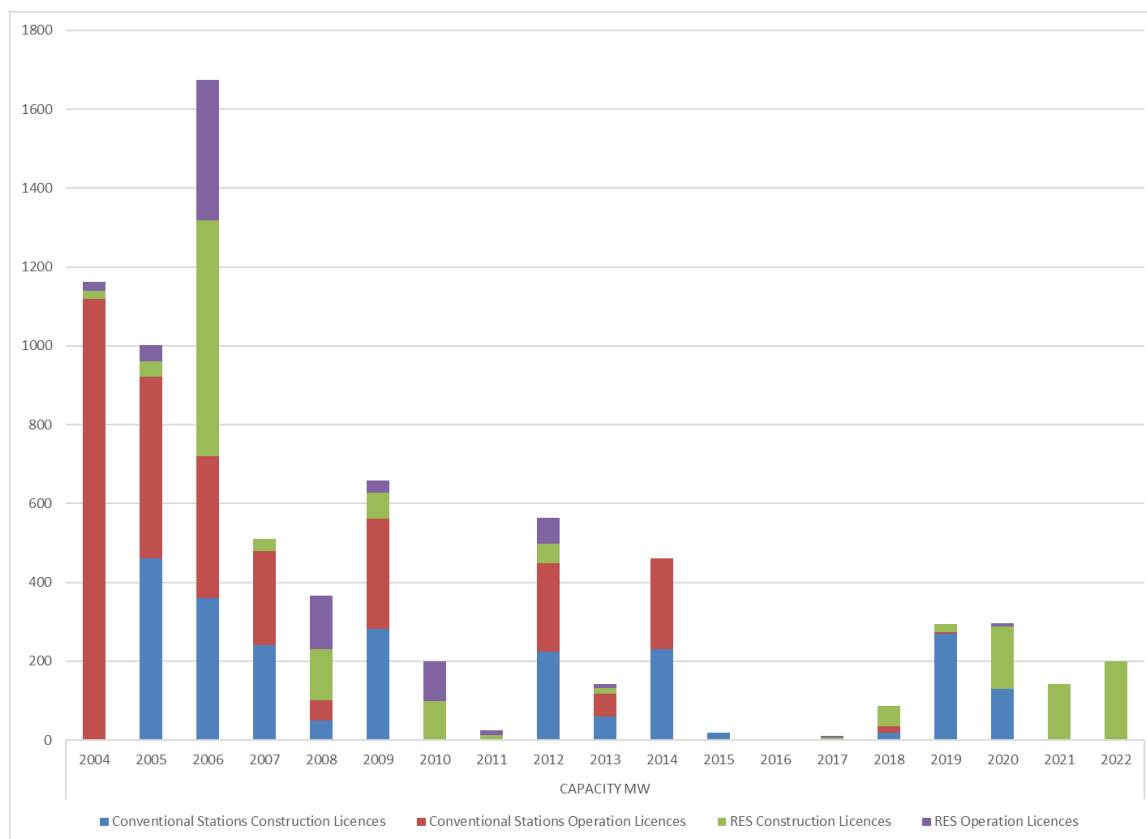


Figure 10. Construction and Operation licences for conventional power plants issued from 2004 to 2022

License for the construction and operation of power plants for self-consumption

In 2022, one (1) licence was granted for the Construction and Operation of an electricity generation plant using conventional fuels, for self-consumption, with a total installed capacity of 1.12MWe.

Energy Storage System Installation Licence

In 2022, one (1) application was submitted for the issuance of an Energy Storage System Installation Licence with a maximum output capacity of 10.15MW and a storage capacity of 24MWh.

General Licence

In 2022, the following General Licences for electricity generation were issued:

- Electricity generation stations from RES, photovoltaic systems for commercial purposes

- with an installed capacity of up to 0.05MWe, total installed capacity of 0.046MWe,
- Electricity generation stations from RES, after connection notification to the DSO with an installed capacity of up to 0.05MWe with a total installed capacity of 45.998MWe,
- Autonomous electricity generation stations from RES, photovoltaic systems with a total installed capacity of 2MWe, and
- Electricity generation stations with conventional fuels for own use and reserve purposes and autonomous self-generation systems with a total installed capacity of 6.78MWe.

Exemption from Construction and Operation Licence of electricity generation plants for commercial use

Photovoltaic Systems

In 2022, two hundred twenty-four (224) Exemptions from Construction Licence of electricity generation stations for commercial purposes were issued, photovoltaic systems with an installed capacity of 601.99MWe and forty (40) Exemptions from Operation Licence of electricity generation stations for commercial purposes were issued, photovoltaic systems with an installed capacity of 90.33MWe.

Biomass/biogas systems

In 2022, one (1) Exemption from Construction Licence of biogas energy generation plant was granted with an installed capacity of 0.7MWe.

Solar thermal plants

In 2022, one (1) Exemption from Construction Licence of solar thermal type energy generation plant was granted with an installed capacity of 0.7MWe.

Exemption from Construction and Operation Licence of electricity generation plants for self-consumption

Conventional plants for self-consumption and reserve purposes connected that are connected to the grid and autonomous self-generation power systems

In 2022, eighty-eight (88) Exemptions from Construction and Operation Licences of power plants using conventional fuels for reserve purposes and autonomous systems of self-generation, with a total installed capacity of 21.79MWe were granted.

Photovoltaic systems under the self-generation/net-billing scheme in commercial and industrial premises

In 2022, ninety-nine (99) Exemptions from Construction Licence of electricity generation stations were issued for own use, photovoltaic systems with an installed capacity of 25.96MWe

and twenty-five (25) Exemptions from Operation Licence of electricity generation stations were issued for own use, photovoltaic systems with an installed capacity of 4.91MWe.

Figures 11 and 12 show the installed capacity of Exemptions from a Construction Licence that were granted for the construction of RES-generation plants and form an Operation Licence of RES-generation plants, respectively, for the period 2006 to 2022.

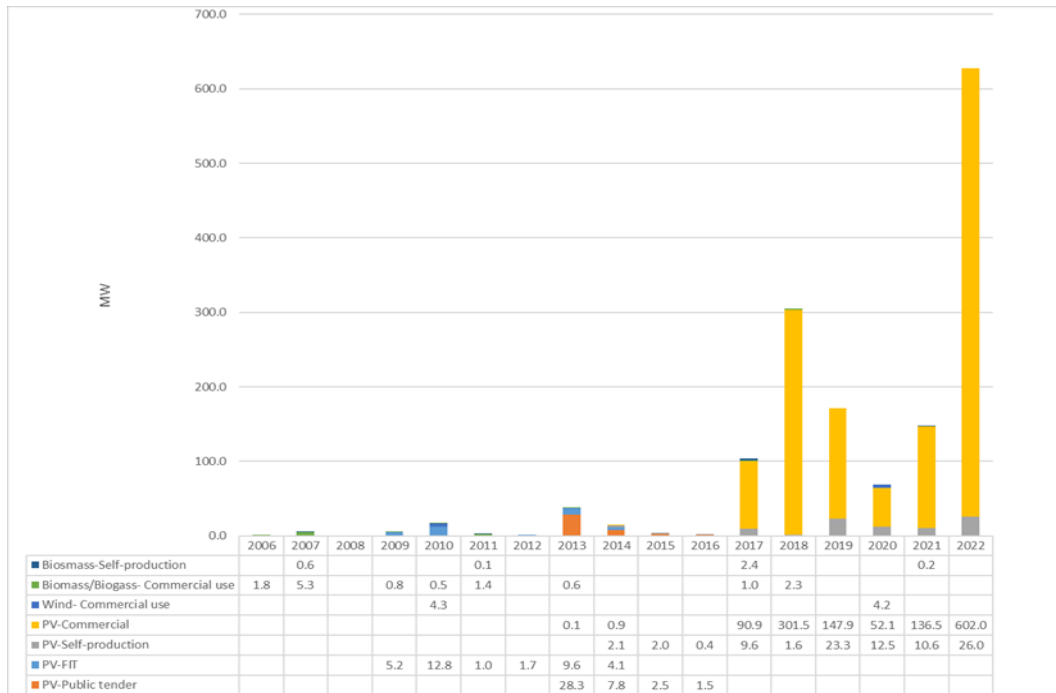


Figure 11. Capacity (MW) of exceptions from RES construction licence issued for the period 2006 – 2022

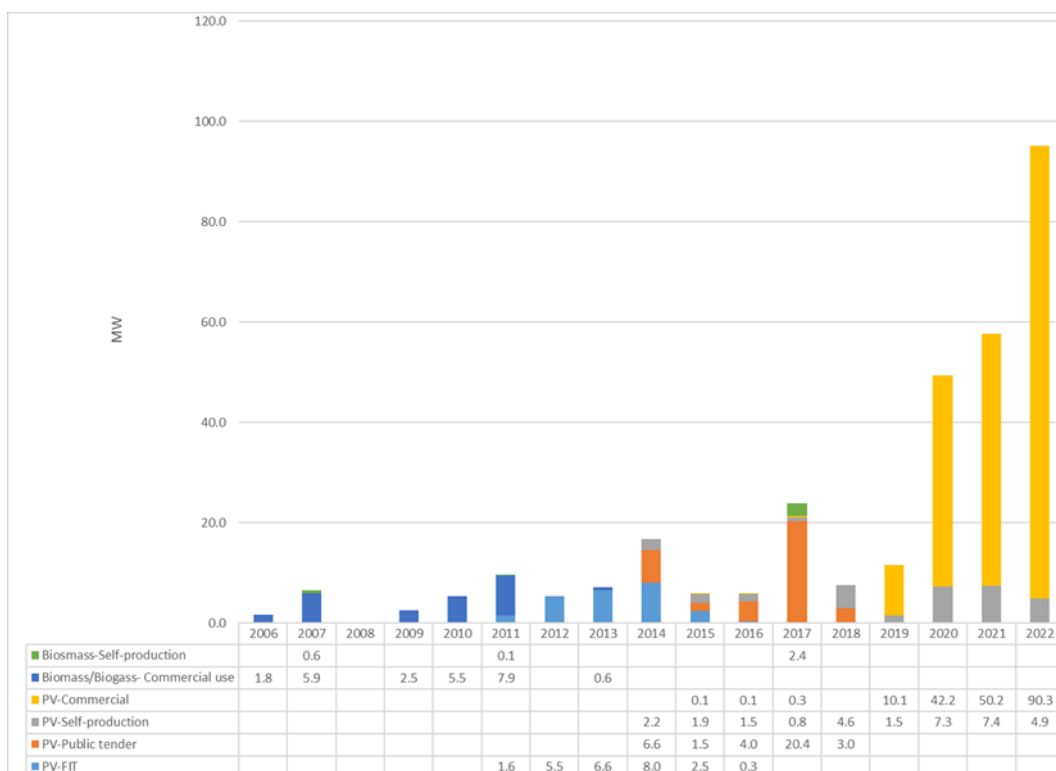


Figure 12. Capacity (MW) of exceptions from RES operation licence issued in the period 2006 – 2022

Installed capacity of electricity generation plants

Conventional Units

The installed electrical capacity of conventional units for commercial use has not been differentiated during the year 2022, it remains at 1478MWe, as it was in the previous year. Table 3 below shows the total installed capacity of EAC's conventional units for 2020 and the geographical distribution of the power plants is presented in Figure 8.

Table 3. Total Installed Capacity of EAC's Conventional Units (MW)

<i>Total Installed Capacity of EACs' Conventional Units (MW)</i>					
<i>Power Station</i>	<i>CCGT units (MW)</i>	<i>Steam units (MW)</i>	<i>Gas Turbines (MW)</i>	<i>Internal Combustion Engines (ICE) (MW)</i>	<i>Installed Capacity per Station (MW)</i>
<i>Moni</i>	-	-	4x37.5=150	-	150
<i>Dhekelia</i>	-	6x60=360	-	2x50=100	460
<i>Vassilikos</i>	2x220=440	3x130=390	1x38=38	-	868
<i>Installed Capacity per type of unit</i>	440	750	188	100	1478

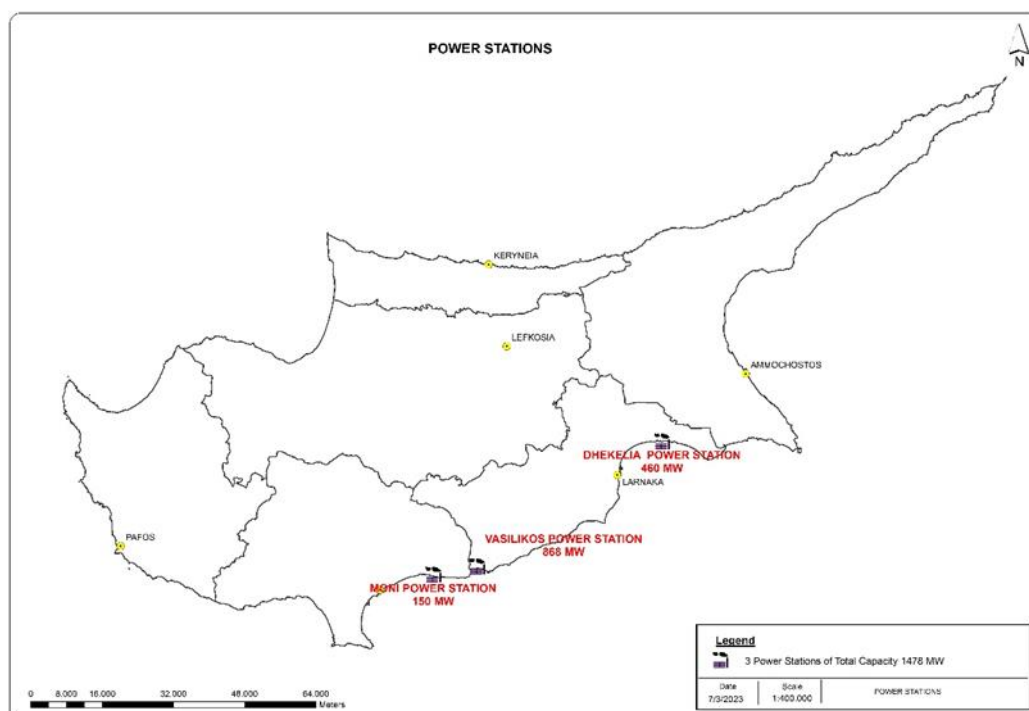


Figure 13. Geographical distribution of installed conventional units for commercial use until 2022

The total installed capacity of conventional plants for own use and reserve purposes and autonomous self-generation systems have increased in 2022 to 285.54MWe.

Renewable Energy Sources

The total installed capacity of wind farms for commercial purposes did not change in the year 2022, it remains at 157.5MWe, as in 2021.

The total installed capacity of photovoltaic systems for commercial purposes has increased in 2022 to 279.35MWe.

The total installed capacity of photovoltaic systems for own use and reserve purposes and autonomous self-generation systems have increased in 2022 to 28.52MWe.

The total installed capacity of biomass/biogas plants for commercial purposes did not change in the year 2022 and still stands at 9.7MWe.

The total installed capacity of biomass/biogas plants for own use did not change in 2022 and still stands at 3.1MWe.

Photovoltaic systems with the method of net-metering

Net-metering is addressed to all consumers in whose premises a small photovoltaic system with capacity up to 10kWe is installed. According to this scheme, the difference is calculated between the electricity that is generated from the photovoltaic, which is installed in the premises, and is injected to the grid, and the electricity that is imported from the grid of electricity, to meet the demands of the premises.

In 2022, 9,093 photovoltaic systems with a total installed capacity of 43.3MWe were installed.

In 2022, the total installed capacity of the photovoltaic systems under the net-metering category is 151.33MWe.

Figure 14 presents the number and capacity of installed photovoltaic systems with the method of net-metering for the period 2013 to 2022.

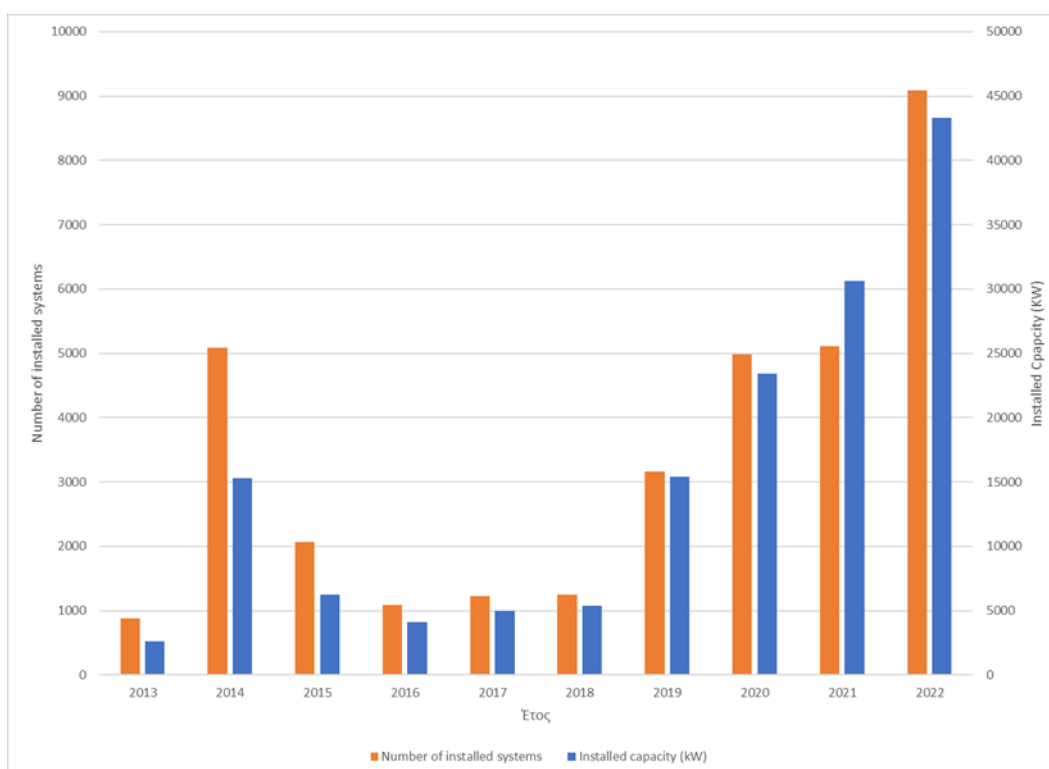


Figure 14. Number of installed systems per year and installed capacity (kW) of net-metering systems for the years 2013 – 2022

Figure 15 presents the geographical distribution of installed RES units with a capacity of more than 20kWp, until 2022. The Figure shows the equable distribution of RES units in the territory of the Republic of Cyprus.

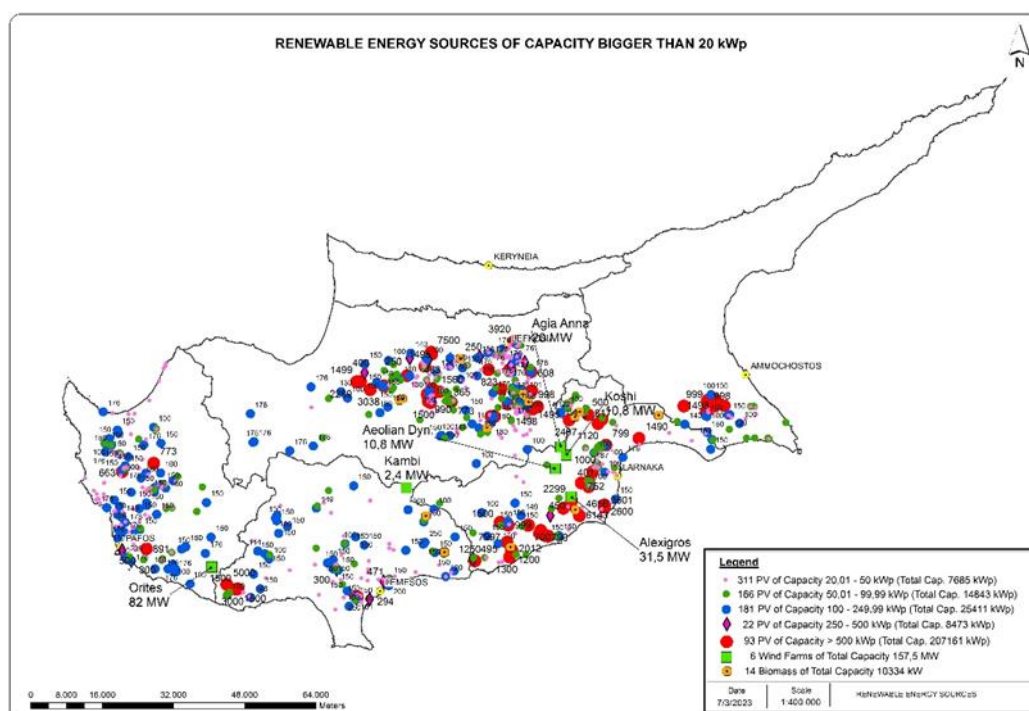


Figure 15. Geographical Distribution of installed RES Units with a capacity of more than

Forecast of total maximum capacity (MW) and total generated energy (GWh) for the decade 2022 – 2030

On 4 June 2019, CERA approved the methodology submitted by the TSOC, concerning the long-term forecasting of electricity generation and capacity.

This methodology concerning the long-term forecasting of electricity generation and capacity, aims at the long-term forecasting of electricity generation as a function of the projected change in Gross National Product (GDP) and the change in the selling price of electricity to the consumer. The method of multiple linear regression is followed, with the dependent variable the normalized electricity generations and as independent variables the change in GDP, the change in the selling price of electricity to the consumer and the degree-days of heating and cooling. The changes in these prices are calculated in relation to the previous corresponding period.

Then, based on the calculated coefficients, the energy consumed by the final consumer in the distribution system (low voltage), is initially provided and then the total generation of the system (conventional generation and RES) is estimated, taking into account the losses at each voltage level and the self-consumption of the generating stations. In this way, the decreasing percentage of conventional generation in the energy mix is taken into account, due to the increasing penetration of generation by RES.

Figures 16 and 17 illustrate the total energy generation (GWh) and maximum total capacity (MW) forecast for the period 2022 - 2030. These forecasts were submitted to CERA by TSOC on 15 May 2022. CERA approved this recommendation with Decision 113/2022.

The upper limit represents the expected demand in extreme conditions, that is conditions of prolonged heat wave in summer and low temperature in winter. The lower limit represents the expected demand in mild temperatures.

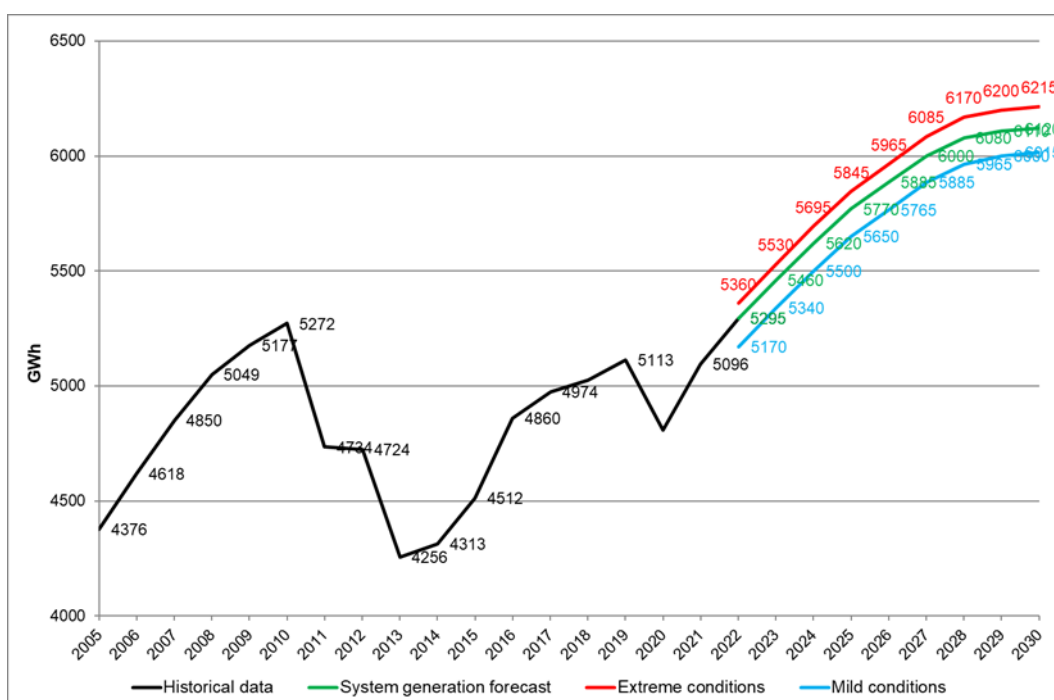


Figure 16. Forecast of total generated energy (GWh) 2022 – 2030

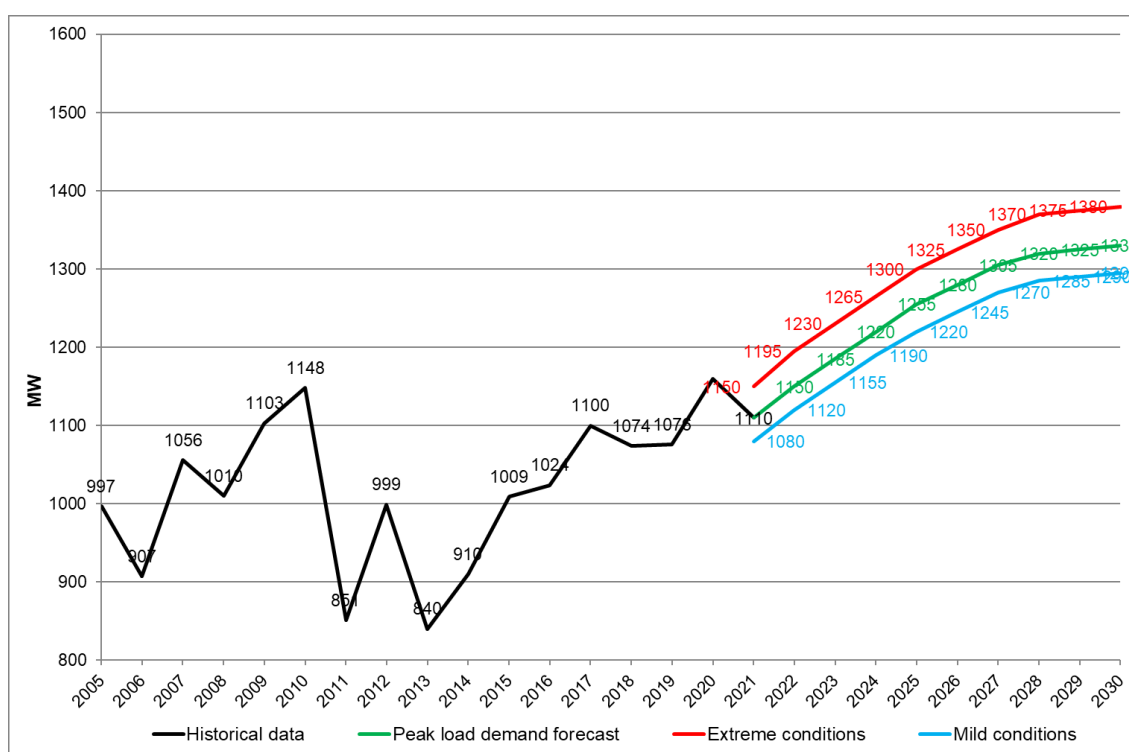


Figure 17. Forecast of maximum total capacity (MW) 2022 – 2030

3.1.5. Cross-border issues

The cross border projects that concern Cyprus and have been included in the 5th PCI list are the following:

- Israel - Cyprus - Greece cluster (currently referred to as the “EuroAsia Interconnector”). The cluster includes the following PCIs:

- Electrical interconnection between Hadera (Israel) and Kofinou (Cyprus), and
- Electrical interconnection between Kofinou (Cyprus) and Crete (Greece)
- Cluster of natural gas infrastructure and related equipment for the transmission of new gas resources from the offshore deposits of the Eastern Mediterranean, which includes the following PCI:
 - EastMed Pipeline - Natural gas pipeline outside Cyprus (offshore) to the mainland Greece via Crete, and
- Development of gas infrastructure in Cyprus, the so-called “Cyprus Gas2EU”.

With reference to the Euroasia Interconnector project and in particular the electrical interconnection between Israel and Cyprus, it is worth mentioning that in 2022, meetings were held with the Israeli Regulatory Authority to promote the project further and to find a common ground for regulatory treatment of the project.

In addition to the PCIs, which are included in the 5th Union list, the implementation of the 2000MW electricity interconnection between Egypt and Cyprus is in progress. The project provides the implementation of the Egypt-Cyprus electricity interconnection, using high voltage continuous flow submarine cables (HVDV) with a transmission capacity of 2000MW. In addition, the project provides that the interconnection will be completed in two phases, with the first phase providing the capacity of 1000MW. In 2022 CERA was in close contact with the Egyptian Energy Regulatory Authority EGYPTERA in order to track all the required actions and define the necessary procedures at the level of regulatory supervision, so that the implementation of this project will be promoted.

3.2. COMPETITION AND MARKET FUNCTIONING

3.2.1. Wholesale markets

The Electricity Market was liberalised by 35% with effect from 1 May 2004 and was further liberalised by approximately 65% in total with effect from January 2009, to include all “non-domestic” consumers which are able to select their supplier according to what is in their best interest. From 1 January 2014 the market is fully liberalised and all consumers of electrical energy are able to choose their supplier.

During the period of this report, Cyprus is in a transitory regulation of the electricity market during which certain transactions are permitted between participant to the benefit of consumers. In the electricity market, transitory regulation refers to “Bilateral contracts between producers and suppliers” which only concerns the electricity market with a clearance of one calendar month. In 2022, in addition to the regulated supplier “EAC-Supply”, a total of five (5) suppliers were involved on the electricity supply sector. These two private suppliers buy green energy which is produced by RES producers and primarily supply commercial and industrial electricity customers under bilateral contracts.

Monitoring the level of prices, the level of transparency, the level and effectiveness of market opening and competition

In 2015, CERA published the Regulatory Decision 01/2015 by which CERA decided to adopt a study titled “The new electricity market arrangements in Cyprus”. The study proposes a design regarding the new electricity market arrangements in Cyprus, based on the decision for implementing a net-pool model as being the most appropriate trading arrangement approach for the Cyprus electricity market, which is fully compliant with the EU target model.

Following the above decision, in 2017, by Regulatory Decision 04/2017, CERA decided on the implementation of transitory regulation of the electricity market in Cyprus prior the full implementation of the new electricity market model. The transitional period is based on bilateral contracts between producers and suppliers for the supply of a standard quantity of electricity (kWh) on a monthly basis. The implementation and operation of transitory regulation does not require a market software, due to the fact that the related tasks are relatively simple and can be implemented with simple spreadsheets.

The transitory regulation of the electricity market in Cyprus started on 1 September 2017 and will be in force until the full implementation of the new electricity market model where the activities of all market participants, EAC-Generation and EAC-Supply will be transferred to the new electricity market.

As a measure of supplier concentration in the competitive Cyprus electricity market, the Herfindahl-Hirschman Index (HHI) was used, which is calculated by taking the sum of the squared market shares of all the firms in the market. Market shares can be calculated based on final consumption and the number of customers or the metering points. For a result of:

- HHI = 0 – 1500, is considered a competitive marketplace,
- HHI = 1500 – 2500, is considered moderately competitive (a partially concentrated market),
- HHI > 2500, cannot be considered competitive (highly concentrated marketplace)
- HHI = 10000, is considered a monopoly, i.e., with only one participant in the marketplace.

EAC is currently, in effect, the largest and only vertically integrated electricity corporation, a fact which:

- Classifies the EAC-Generation activity in a position of strength in the wholesale electricity market which is substantiated by historical data of the HHI Index (Figure 17). It is concluded that the wholesale electricity market of Cyprus is classified as a highly concentrated marketplace and in particular without competition and this is due to the position of strength of EAC’s generation activity.
- Classifies the EAC-Supply activity in a position of strength in the retail electricity market which is substantiated by historical data of the HHI Index (Figure 18). It is concluded that the retail electricity market of Cyprus is classified as a highly concentrated marketplace and in particular without competition and this is due to the position of strength of EAC’s

Supply activity.

Based on the above, it is ascertained that due to the size and position of the EAC, there is no effective competition in the wholesale and retail markets.



Figure 18. Concentration of electricity market (wholesale market)

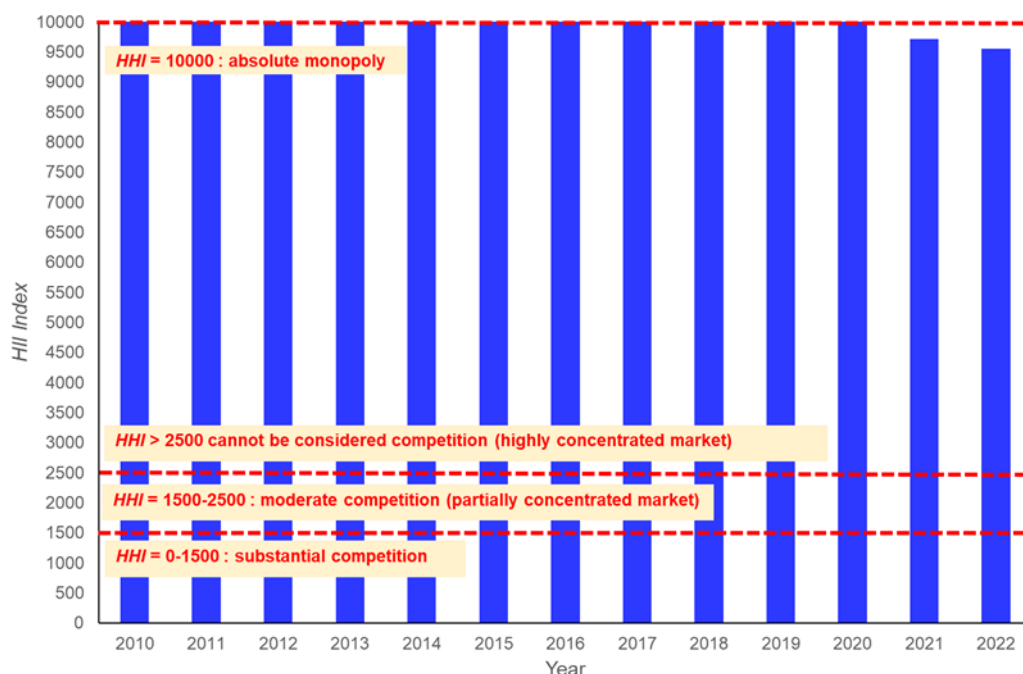


Figure 19. Concentration of electricity market (retail market)

Monitoring the level of transparency

By Decision no. 27/2022, dated 8 February 2022, CERA decided to award Tender 15/2021

“Provision of Risk Assessment preparation services and implementation Information Security Policy pursuant to the provisions of Regulation (EU) 1227/2011 on wholesale energy market integrity and transparency (REMIT)” to the bidder KPMG LIMITED.

The Agency for the Cooperation of Energy Regulators (ACER), in the context of market surveillance and establishment of information exchange mechanisms, has implemented the REMIT Information System (ARIS) to fulfil the obligations of the REMIT Regulation regarding the collection of data on wholesale energy markets, market surveillance and trading of data. In this regard, ACER develops and manages the REMIT Information Security Management System (ISMS)

In order for CERA to be able to monitor the transaction of participants registered in the wholesale market, with respect to the REMIT Regulation, it needs to pass an assessment (peer review), which essentially constitutes CERA’s compliance with the ACER’s Information Security Policy for the implementation of the provisions of the REMIT Regulation which is based on the ISO 27000 standard.

Monitoring the level of prices

The “Statement of Regulatory Practice and Electricity Tariffs Methodology” which came into force by Regulatory Decision 01/2021 and amended by Regulatory Decision 05/2022, has been established in order to regulate:

- the way in which CERA determines the allowed revenue for each regulated activity,
- the way in which the regulated tariffs are determined,
- the way in which a transparency framework for the establishment of the Weighted Average Cost of Capital (WACC), which has already been included in the terms of the Cross Border Cost Sharing (CBCA) Agreement for the EuroAsia Interconnection Project is determined, and
- in a transparent way, the allowed revenue of the Project Promoter or subsequently, of the Interconnection Line Operator.

Wholesale Tariff (T-W)

The following Table 4 presents the Wholesale Tariff (T-W) for Year 2022 which concerns wholesale electricity selling prices of EAC-Generation at the basic fuel price (€300/Metric Ton).

Table 4. Wholesale Tariff (T-W)

<i>Period</i>	<i>Summer (1 June – 30 September)</i>	
	Weekday	Weekend/Holidays
<i>Peak Hours (09:00 - 23:00)</i>	15.08	9.44
<i>Off Peak Hours (23:00 – 09:00)</i>	9.16	8.94
<i>Period</i>	<i>Other Seasons (1 January – 31 May / 1 October – 31 December)</i>	
	Weekday	Weekend/Holidays
<i>Peak Hours (16:00 - 23:00)</i>	9.54	9.17
<i>Off Peak Hours (23:00 – 16:00)</i>	8.56	8.13

The Wholesale Tariff (T-W) is adjusted based on the Weighted Average Fuel Price, which is announced by EAC every month, and the Fuel Clause Coefficient for customers at high voltage, which is approved by CERA every 6 months adjusted with the loss adjustment factor at high voltage for each month.

The approved Fuel Clause Coefficients and Basic Prices for the adjustment of the wholesale tariff T-W and for the purchase of energy from RES as well as the Basic Purchase Price of RES-generated energy for 2022, were set by CERA's Decisions 365/2021 and 161/2022 and are listed in Table 5.

Table 5. Fuel clause coefficients and base prices, for 2022

<i>Coefficients for fuel adjustment clause for consumers</i>		
	January – June 2022	July – December 2022
	€/kWh/ 1€c	€/kWh/ 1€c
<i>Low voltage</i>	0.00022483	0.00024311
<i>Medium voltage</i>	0.00022212	0.00024098
<i>High voltage</i>	0.00021977	0.00023889
<i>Coefficients for fuel adjustment clause for electricity from RES</i>		
	€/kWh/ 1€c	€/kWh/ 1€c
<i>Low voltage</i>	0.00022212	0.00024098
<i>Medium voltage</i>	0.00021977	0.00023889
<i>High voltage</i>	0.00021682	0.00023551
<i>Basic purchase prices of RES energy</i>		
	€/kWh	€/kWh
<i>Low voltage</i>	6.960	7,502
<i>Medium voltage</i>	6.890	7,439
<i>High voltage</i>	6.801	7,338

Figure 20 presents the average price of the basic Wholesale Tariff (T-W) per unit exported in the transmission system for the years 2016 to 2022 (in €c / kWh).

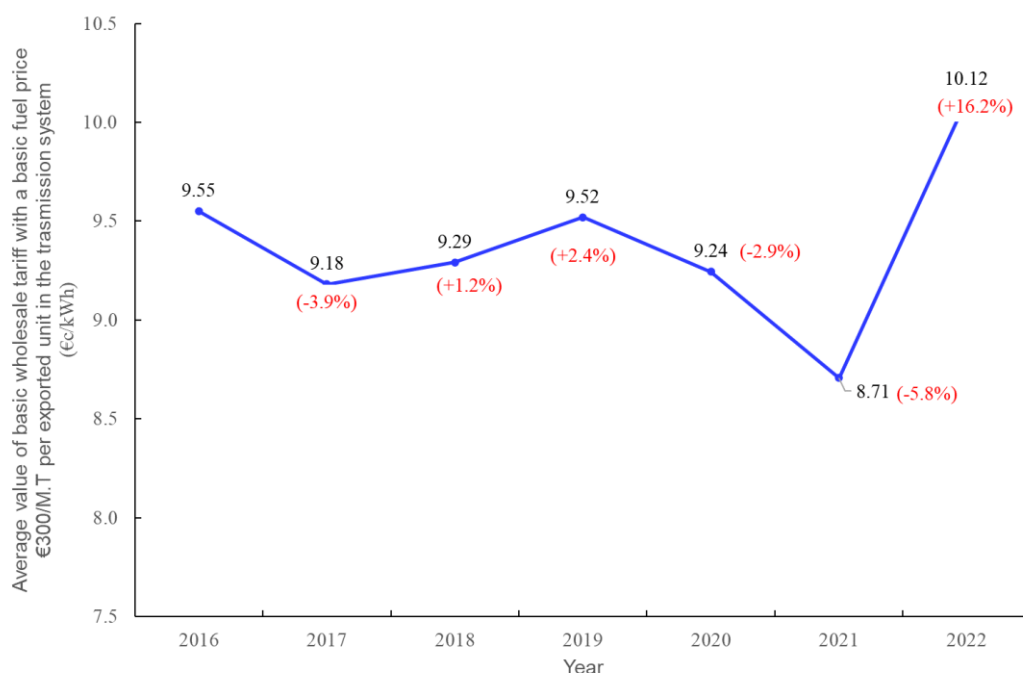


Figure 20. Average value of the basic wholesale tariff

3.2.2. Retail market

Monitoring the level of prices, the level of transparency, the level and effectiveness of market opening and competition

Market opening and competition

In Cyprus, the activities of electricity generation and supply concern competitive activities, meaning that the interested persons are given the opportunity, after obtaining the relevant licences from CERA, to participate on a competitive basis in the electricity market according to the Regulations set by CERA, as independent producers and / or as independent electricity suppliers.

Although the generation and supply activities belong to the competitive part of the electricity market, EAC as a producer and supplier, occupies at this stage a dominant position in the market and thus is regulated by CERA. More specifically, CERA exercises control over EAC and regulates its economic parameters, so as to achieve a healthy environment allowing the entry in the market of new independent producers and suppliers who can compete on an equal footing.

The activities of electricity transmission and distribution are by nature monopolistic activities. These activities concern the operation and ownership of the transmission and the distribution systems.

During 2022, EAC-Supply (the dominant supplier) along with five (5) other suppliers were active

in transitional electricity market.

In 2022, five (5) applications were submitted for the issuance of Electricity Supply Licence to final customers for the Electricity Market Transitory Regulation validity period and six (6) Electricity Supply Licences have been granted to final customers for the Electricity Market Transitory Regulation validity period.

With respect to the Electricity Market Transitory Regulation validity period, CERA has granted a total of twenty-five (25) licences for the supply of electricity to final customers.

As a general assessment to whether the market is seen to be active, it could be said that the market seems to become active. By considering the conditions under which Cyprus has to act, i.e., small isolated system, the progressively opening of the electricity market where it constitutes a contemporary activity for the island, the situation can be justified. Statistics regarding the retail market concentration are presented in the above Figure 19.

Trading and Settlement Rules

According to the Law Regulating the Electricity Market of 2021 L.130(I)/2021, the TSRs:

- Govern the mechanisms, prices and other terms and conditions that apply in cases where licensees buy or sell electricity based on arrangements made by the TSOC.
- Ensure that licensees, who are required to participate in the purchase and sell of electricity, under these arrangements, will not be subject to discrimination.
- Promote efficiency and economy and facilitate competition regarding the purchase and sale of electricity under these arrangements.
- They provide non-compliance charges which the TSOC, in its capacity as the Electricity Market Operator, imposes on any of the participants in the electricity market in case of failure to comply with any obligation provided in the Trading and Settlement Rules.
- They are fully harmonized with the provisions of Regulation (EU) 2019/943, where applicable.

The TSRs are adhered to be all final customers that directly or cumulatively participate in the electricity market, licensees or persons that have been granted exemptions, based on the provisions of Article 27 to the extent that is required by their licenses or exemptions.

During the reference year, CERA approved the TSOC-proposed amendments to the TSRs – Version 2.2.0 (Decision No. 4/2022, dated 5 January 2022). The amendments refer to changes to the definition and the power and capacity limits of electricity storage facilities, corrections to the definition of electricity storage representatives and changes to facilitate the participation of electricity storage units in the integrated scheduling process. These changes were made in the context of implementing the provisions of Regulatory Decision No. 03/2019 (KDP 224/2019) “regarding the Establishment of Basic Principles of the Regulatory Framework for In-Front-Of-The-Meter Electricity Storage Facilities in the Wholesale Electricity Market”.

The approval of TSRs 2.2.0, which allows the participation of electricity storage units in the Competitive Electricity Market, was also a prerequisite for the disbursement of the first instalment of the Recovery and Resilience Facility (RRF) and in order to fulfil this prerequisite, additional provisions regarding the submission of block orders in the day-ahead market and the combination of storage plants in RES units at the request of TSOC that had been requested by CERA were not included. The preparation of the additional provisions will continue and TSOC proposes that these are included in the TSR version that will satisfy the intra-day market and will be prepared at a later stage.

Moreover, by Decision 72/2022, dated 18 March 2022, CERA decided to publish TSR 2.2.0 with the relevant announcement in the Official Gazette of the Republic, as these were approved by CERA Decision No. 04/2022, dated 5 January 2022, which marks their entry into force. However, in the publication it is stated that the Trading and Settlement Rules - Version 2.2.0 shall be put into effect on 30 September 2024.

Consumption and average sales

The total consumption of customers and the average consumption by type of consumer is given in Table 6.

Table 6. Consumers, total and average sales

CONSUMERS, TOTAL & AVERAGE SALES						
As of 31 December	2017	2018	2019	2020	2021	2022
NUMBER OF CONSUMERS						
Domestic	444,895	450,318	454,490	459,482	467,936	474,507
Commercial	87,065	88,152	88,999	89,294	90,251	90,899
Industrial	9,760	9,975	10,209	10,422	10,351	10,133
Agricultural	15,902	16,194	16,239	16,337	16,485	16,474
Public Lighting	10,878	11,584	11,771	11,935	12,169	12,232
TOTAL	568,500	576,223	581,708	587,470	597,192	604,245
SALES TO CONSUMERS (MWh)						
Domestic	1,641,033	1,622,544	1,686,934	1,723,002	1,749,897	1,670,433
Commercial	1,755,094	1,816,143	1,854,824	1,572,008	1,686,441	1,803,074
Industrial	856,422	883,962	848,901	761,327	790,034	796,294
Agricultural	156,453	154,878	138,786	147,670	168,184	143,013
Public Lighting	86,578	91,137	85,937	68,511	56,924	53,578
TOTAL	4,495,580	4,568,664	4,615,382	4,272,518	4,451,480	4,466,392
AVERAGE SALES PER CONSUMER (kWh)						
Domestic	3,689	3,603	3,712	3,750	3,740	3,520
Commercial	20,158	20,602	20,841	17,605	18,686	19,836

Industrial	87,748	88,618	83,152	73,050	76,324	78,584
Agricultural	9,839	9,564	8,546	9,039	10,202	8,681
Public Lighting	7,959	7,867	7,301	5,740	4,678	4,380

Supplier of Last Resort

By Decision 166/2021, dated 26 May 2021, having in regard Decision 24/2021, dated 15 January 2021, concerning the detailed terms and procedures for call for expression of interest for the selection of a supplier of last resort in the Cypriot electricity market for a two-year period and the consultations that were conducted with the CERA licensees, electricity suppliers to final customers, and license applicants for the supply of electricity to final customers, CERA decided to approve the draft of the Call for Expression of Interest for the selection of a Supplier of Last Resort in the Cypriot Electricity Market for a two-year period. In addition, CERA decided for the Call for Expression of Interest for the selection of a Supplier of Last Resort in the Cypriot Electricity Market for a two-year period to be published in two daily newspapers, to be posted to the CERA website, to be published in the Official Gazette of the Republic of Cyprus, and to be notified to the competent agencies of the European Commission.

Due to the lack of interest, CERA re-designated EAC-Supply as the Supplier of Last Resort in the electricity market for 2021, according to the Regulatory Decision 02/2020 where in case of no interest in up taking the position of the Supplier of Last Resort then the supplier with the largest electricity market share per consumer class is designated by CERA on that position.

Tariffs at which consumers will enjoy the right of a universal service under the status of the Supplier of Last Resort are defined as the respective tariff categories of EAC-Supply and will be invoiced on the basis of the approved adjustable tariffs according to Regulatory Decision 02/2015 "Declaration of Regulatory Practice and Methodology of Electricity Tariffs" and its respective amendments or revisions that apply to the other customers of EAC-Supply, who belong to the same category of consumers.

Switching procedure

According to the Law Regulating the Electricity Market in Cyprus of 2021, when customers wish, while respecting contractual conditions, to switch supplier or market participant engaged in aggregation, the switch will be made by the interested supplier within a maximum of three weeks from the date of the request. These rights are granted to all customers without discrimination in relation to cost, effort or time. In addition, customers are not charged for the change of supplier.

By January 2026, the technical process of switching supplier shall take no longer than 24 hours and shall be possible on any working day.

The right to switch supplier or market participants engaged in aggregation is granted to

customers in a non-discriminatory manner as regards cost, effort and time.

Household customers shall be entitled to participate in collective switching schemes. To achieve this purpose, CERA is in the process of defining, by Regulatory Decision, the framework according to which suppliers may provide the possibility of collective switching of suppliers, which will ensure the elimination of any regulatory or administrative barriers and the greatest possible protection of consumers against abusive practices.

Until 2022, there was only one active supplier for the household market (the dominant supplier – EAC), therefore switching was not available yet for the household market.

Monitoring the level of prices

On 17 May 2022, CERA by Decision 134/2022 approved and published the new “Adjustment Methodology of Allowed Revenues and Tariffs of Regulated Activities of the EAC and the TSOC” for the next regulatory control period to fall in line with the Laws Regulating the Electricity Market of 2021 and 2022, L.130(I)/2021 and Regulatory Decisions 01/2021 and 05/2022.

By Decisions 215-218/2022 and 244/2022, CERA approved the allowed revenue and regulated basic electricity tariffs for 2022, as presented in Table 7. Allowed revenues for 2022, include accounting adjustment for 2020 based on the above-mentioned adjustment methodology.

Table 7. Approved Permitted Revenue of Regulated Activities for the Year 2021

	Recovery from tariff	CERA-approved allowed revenue for 2022
Wholesale electricity tariff (T-W) at basic price		430,936,757
Transmission system use tariff (T-NH)		33,012,048
Distribution system use tariffs (medium and low voltage), which includes a charge component related to the Distribution System Operator (T-NM, T-NL)		89,633,816
Tariff for Business Management Services provided to customers (T-BM)		21,892,357
Tariff for the provision of ancillary services and long-term reserve (T-AS)		31,716,476
Tariff for the recovery of expenses of the Transmission System Operator (T-TSO)		5,049,529

Tariff for the recovery of expenses of measurements incurred by the Distribution System Operator (T-MET)	3,718,994
Purchase of RES-generated energy at basic price	36,179,185
Supply tariffs and electricity market charges to the end consumer (T-RET)	640,879,249

The determination of the allowed revenues of each regulated activity and the new, cost-oriented tariffs contribute to greater transparency and set the benchmark on which stakeholders interested in participating in the electricity market will be based.

Figure 21 presents historical data for each of the years 2016 to 2022 (in €/kWh) for the EAC permitted revenues per unit sold.

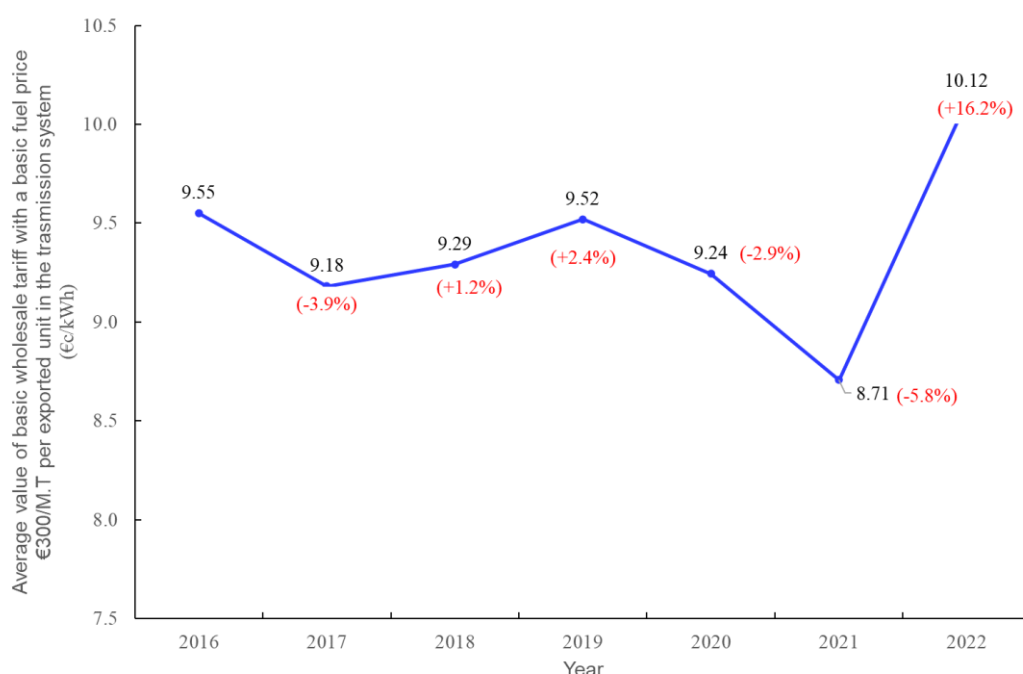


Figure 21. Allowed EAC Revenue per unit sold, for the years 2016 to 2022

Electricity tariffs

By Decision 18/2022, dated 21 January 2022, CERA approved the electricity tariff plans for 2022, as submitted by EAC Supply and instructed EAC Supply to publish the approved electricity tariff plans to properly inform electricity consumers and other participants in the electricity market.

The following Figures present data pertaining to the final electricity price for various tariffs (includes the cost of fuel and CO₂ emission allowances over €300/MT), as well as data that affect the tariff amounts.

Figure 22 presents the analysis of the fuel price adjustment (€/kWh) that was charged per kilowatt-hour to Low-Voltage consumer bills from January 2017 to December 2022, regarding fuel, cost of purchasing CO₂ emissions allowances and the cost of the Cyprus Organization for Storage and Management of Oil Stock (COSMOS). From June 2020 to January 2021, there was a negative impact on the fuel adjustment cost since the cost of fuel fell below € 300/MT.

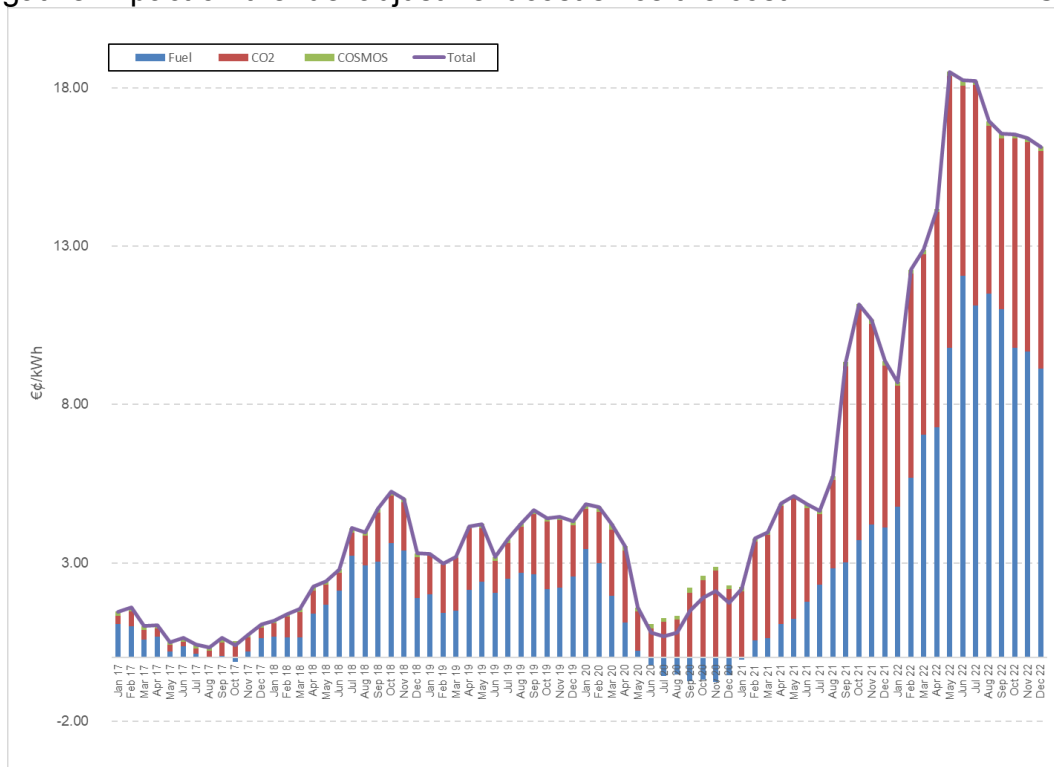


Figure 22. Analysis of the cost of fuel adjustment, Low Voltage (€/kWh)

Figure 23 shows the movement of the weighted average cost of fuel (WACF) (including the cost of purchasing greenhouse gas emissions allowances) and the WACF that only includes the cost of fuel portion, from December 2012 to December 2022. Since the calculation of the WACF for June 2022, EAC Generation has implemented a new methodology regarding the purchase of greenhouse gas allowances. In short, according to this procedure, buying emission allowances is based on actual weekly fuel consumptions in order to fully implement the actual seasonality when buying emission allowances.

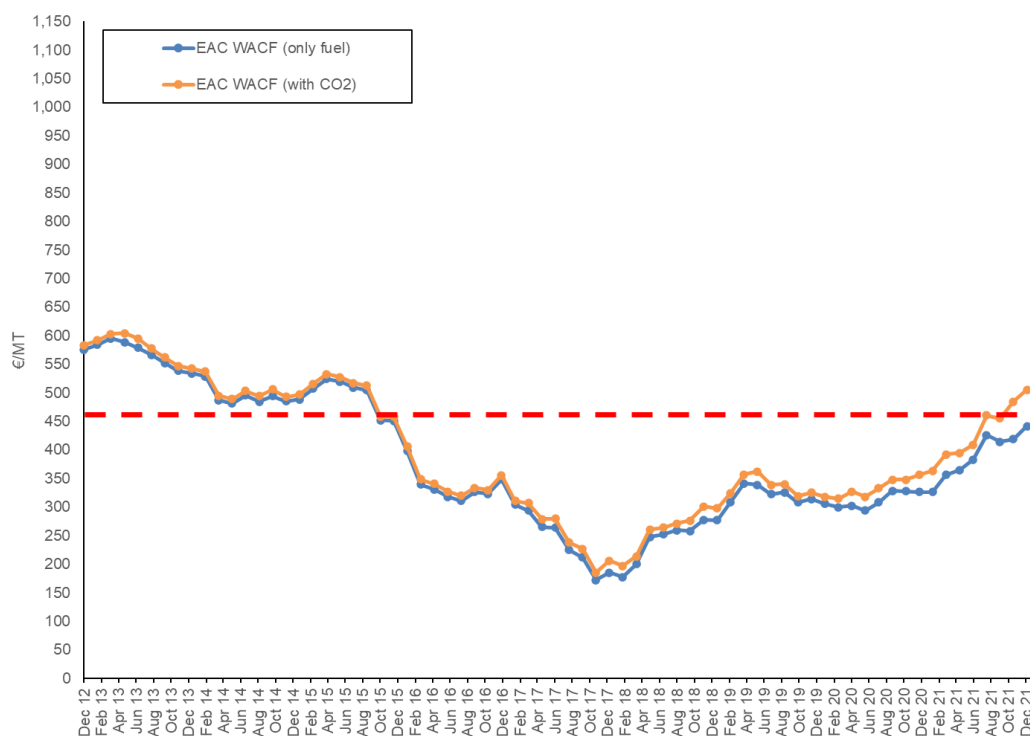


Figure 23: WACF of EAC Generation (only fuel, including CO2 cost)

Figure 22 shows the fuel mix from January 2017 to December 2022 that has been consumed for electricity generation. As it appears in the Figure, As shown in the Figure, the fuel mix for electricity generation ratio for the months of January to December 2022 were on average, HFO: 66.5%, GasOil: 33.5%.

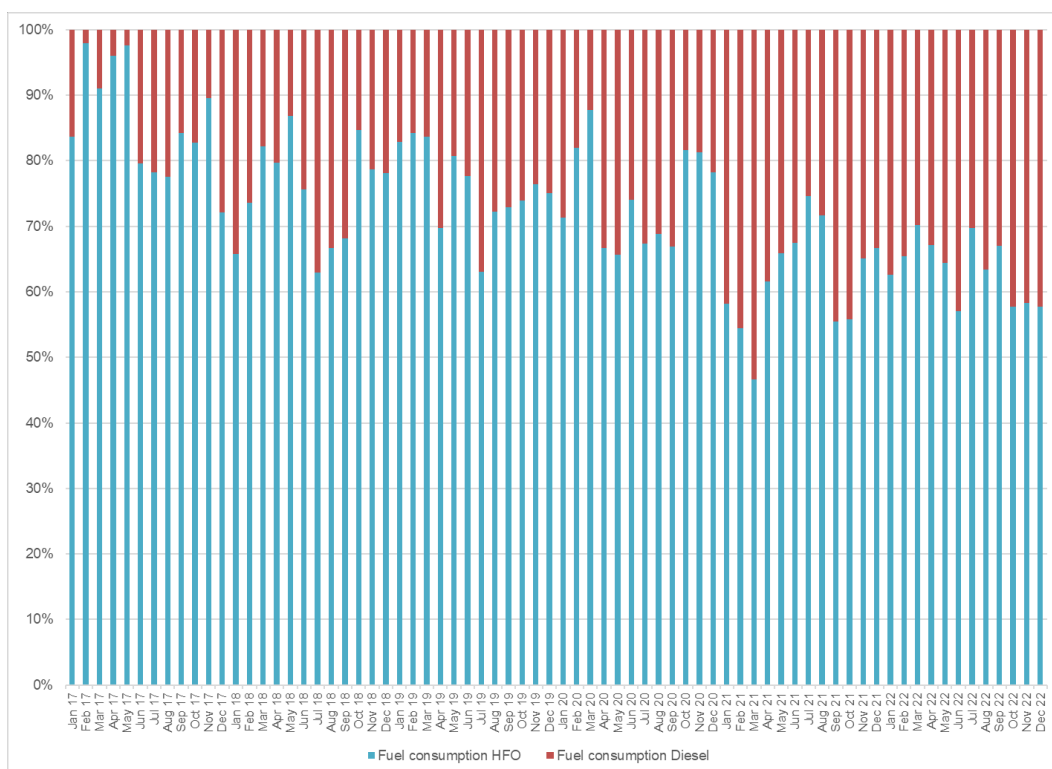


Figure 24: Fuel mix for EAC electricity generation (consumption %)

Figure 25 shows the total and average unit cost for the purchase of greenhouse gas emission allowances from January 2017 to December 2022.

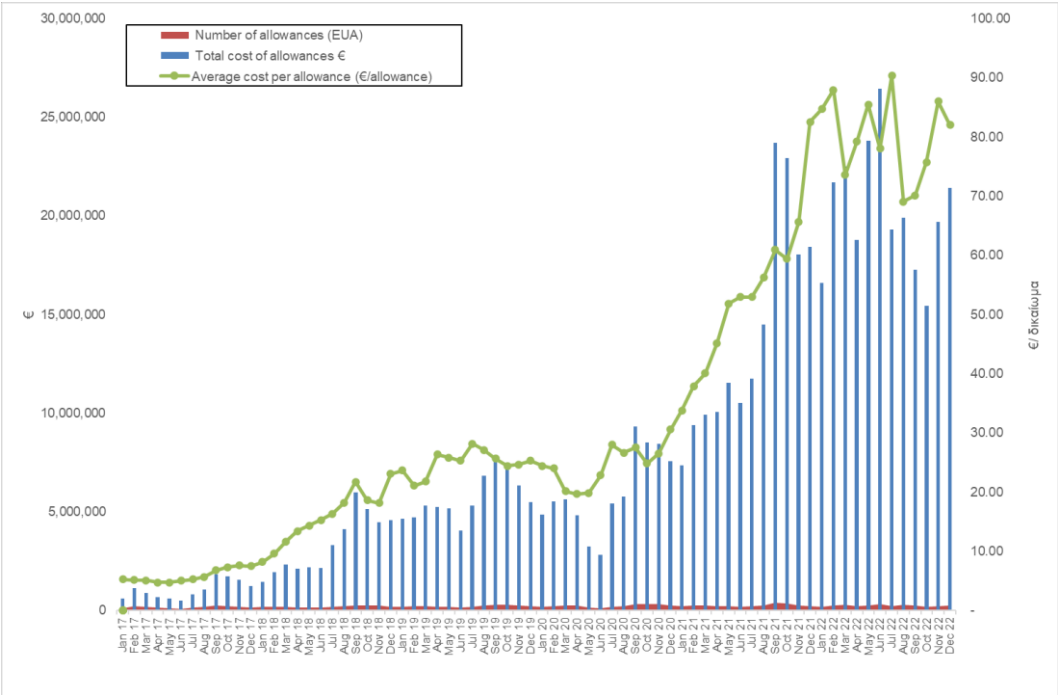


Figure 25: Total cost of CO2 emission allowances by EAC Generation, average cost per allowance

Figure 26 shows the number of greenhouse gas emission allowances that have been purchased by EAC Generation for the same period.

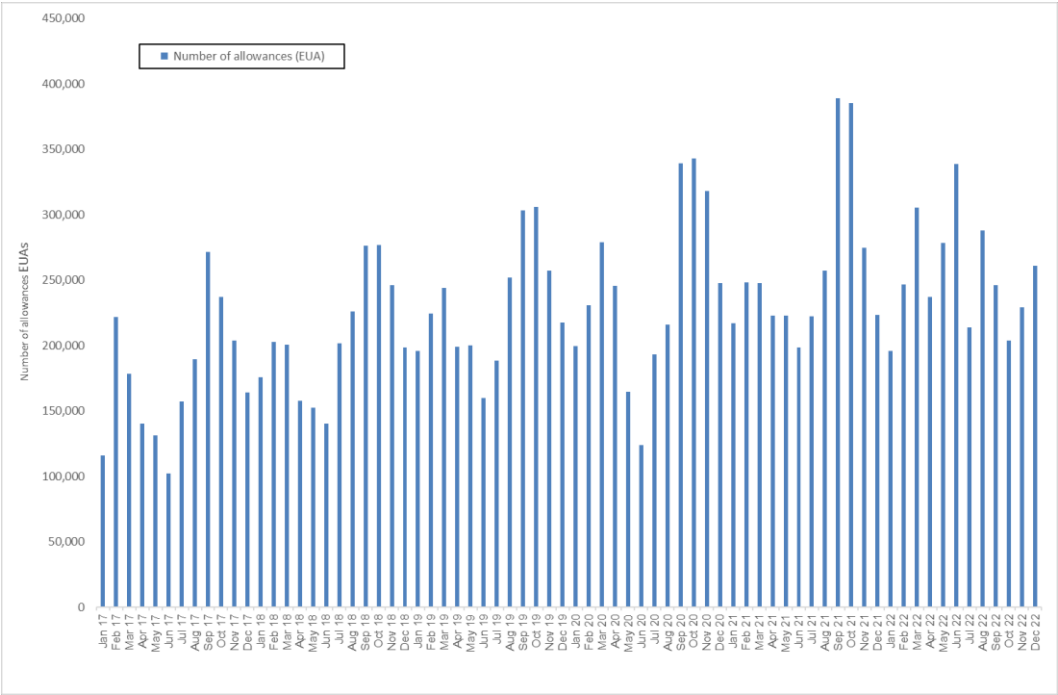
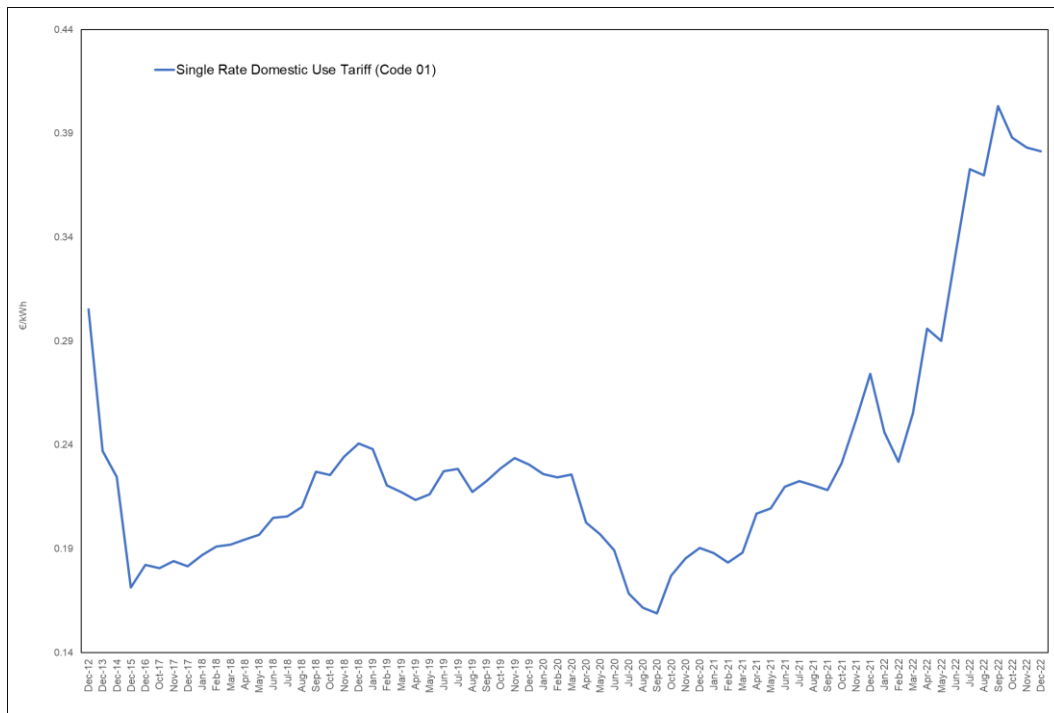


Figure 26: Number of CO2 allowances that were purchased by EAC Generation

Figure 27 shows the average tariff for household use (code 01) with a bi-monthly consumption of 600kWh from December 2012 to December 2022, inclusive of VAT and RES fee.



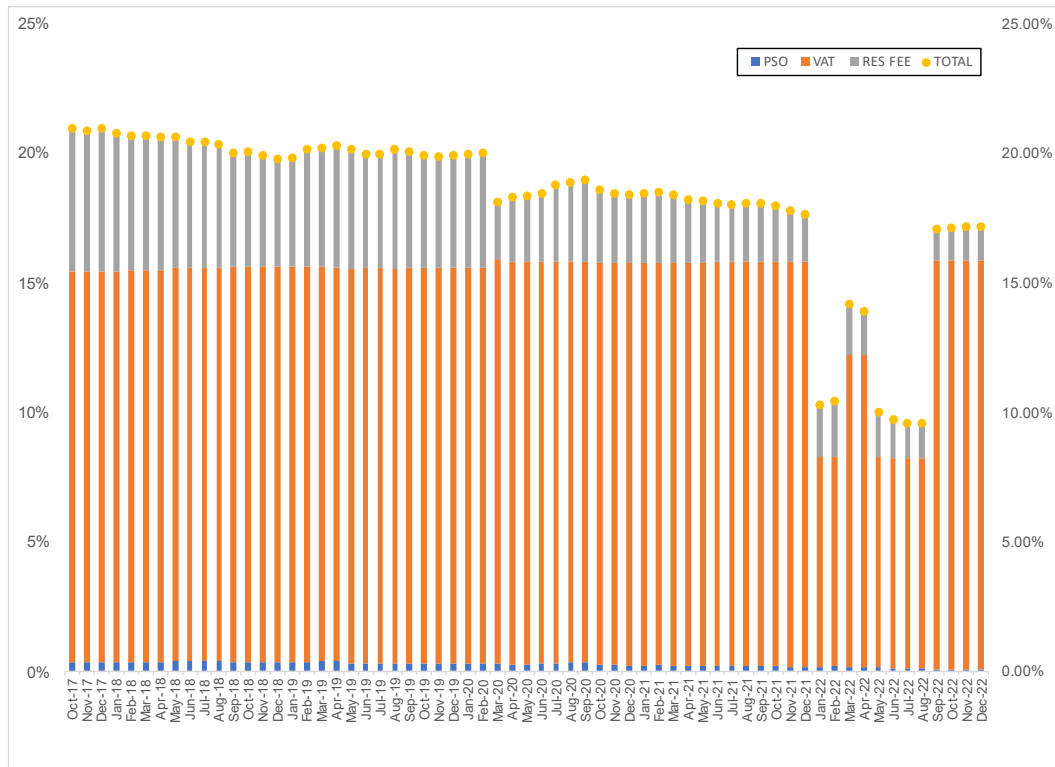


Figure 28: PSO, VAT and RES analysis for household tariff (code 01)

Figure 29 shows the average Bi-monthly Low Voltage Single Rate Commercial Use Tariff (code 10) from October 2017 to December 2022, inclusive of VAT and RES fee.

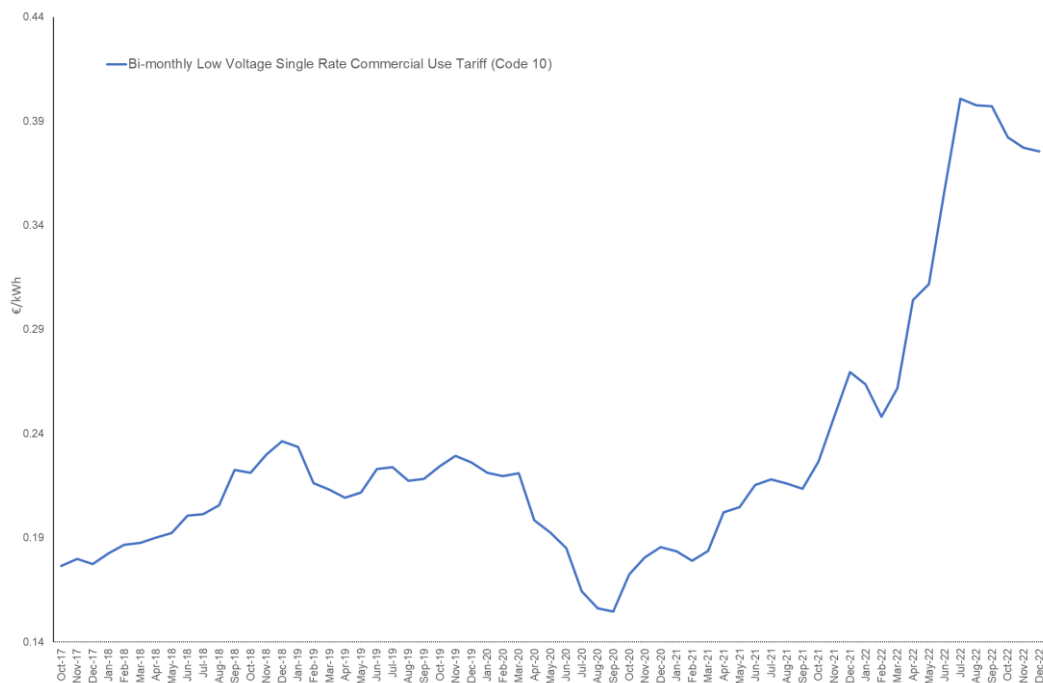


Figure 29: Average Commercial and Industrial Use Tariff (code 10)

Figure 30 shows the average Monthly Low Voltage Seasonal Two-Rate Commercial and Industrial Use Tariff (code 30) from October 2017 to December 2022, inclusive of VAT and

RES fee.

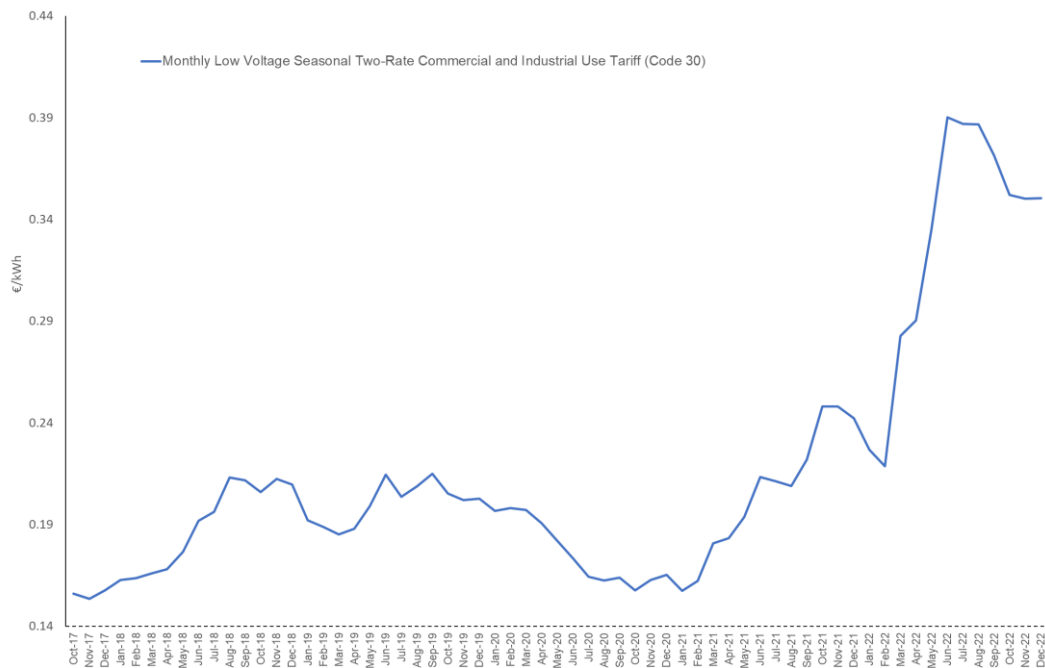


Figure 30: Average Monthly Low Voltage Seasonal Two-Rate Commercial and Industrial Use Tariff (code 30)

Figure 31 shows the average Monthly Medium Voltage Seasonal Two-Rate Commercial and Industrial Use Tariff (code 40) from October 2017 to December 2022, inclusive of VAT and RES fee.

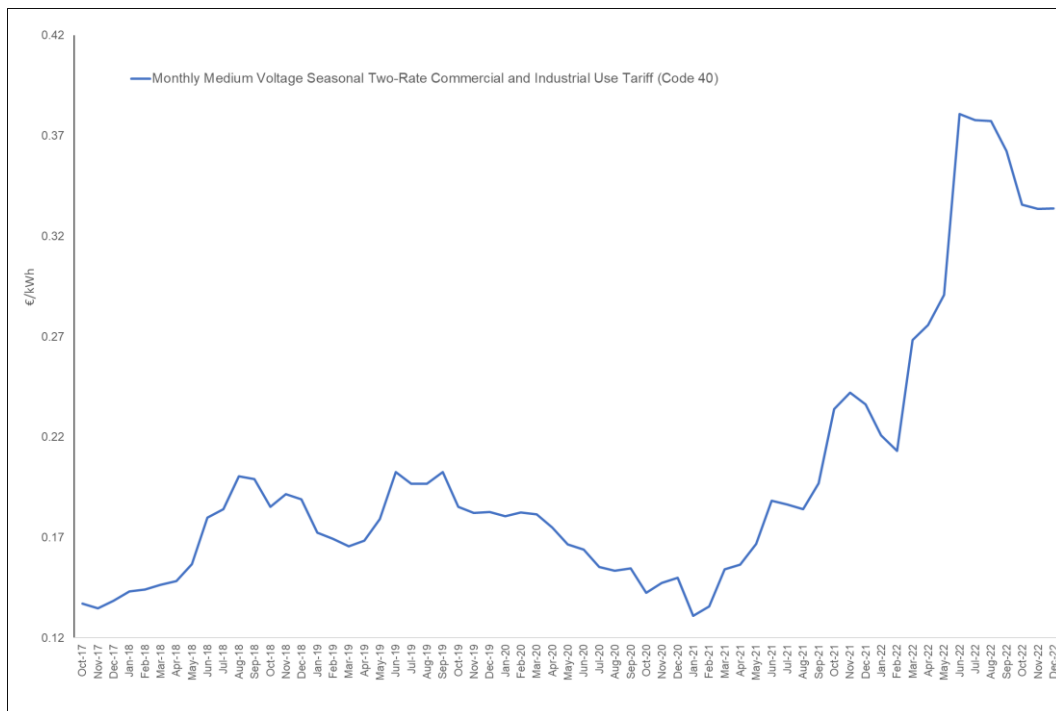


Figure 31: Monthly Medium Voltage Seasonal Two-Rate Commercial and Industrial Use

Tariff (Code 40)

Figure 32 shows the average Monthly High Voltage Seasonal Two-Rate Commercial and Industrial Use Tariff (code 50) from October 2017 to December 2022, inclusive of VAT and RES fee.

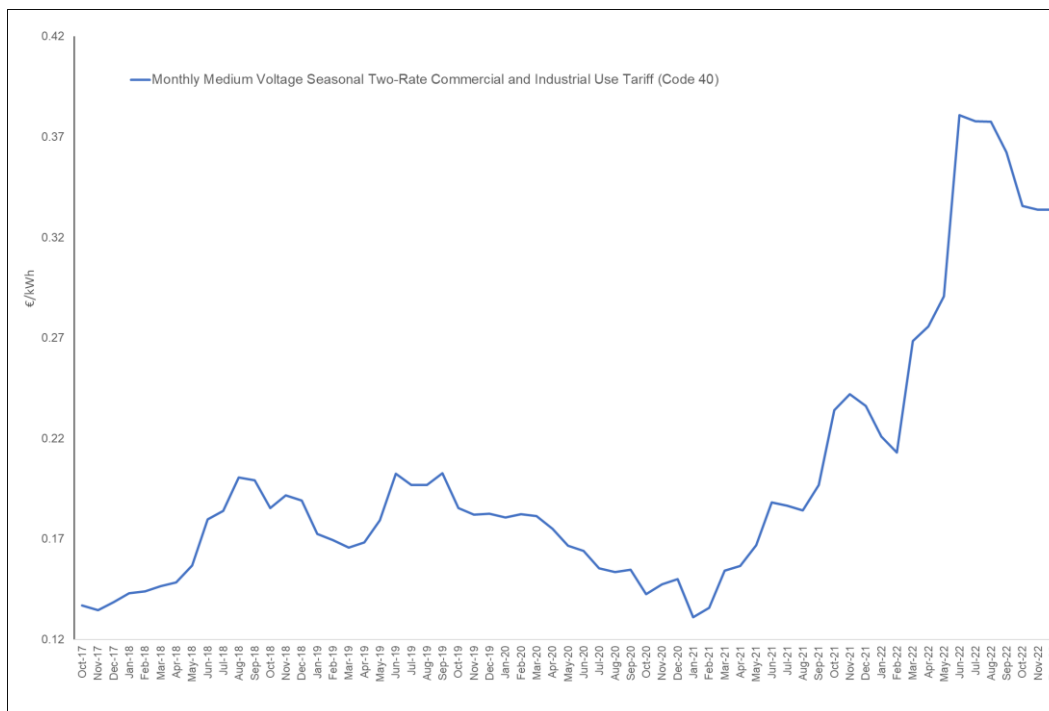


Figure 32: Monthly High Voltage Seasonal Two-Rate Commercial and Industrial Use Tariff (code 50)

The above Figures show that in 2022, the electricity tariffs for all categories had the highest upward trend compared to the previous years.

The increase in the average tariffs in 2022 is due to the increase in the cost of fuel in electricity generation, due to the global increase in the cost of fuel, but also due to the increase in the cost of purchasing greenhouse gas emission allowances.

EAC Supply Invoice Analysis

Figure 33 shows the analysis of the electricity supply invoice per charge category, for a typical household consumer with bi-monthly consumption of 600 kWh in December 2022, at the basic price (i.e. excluding fuel adjustment).

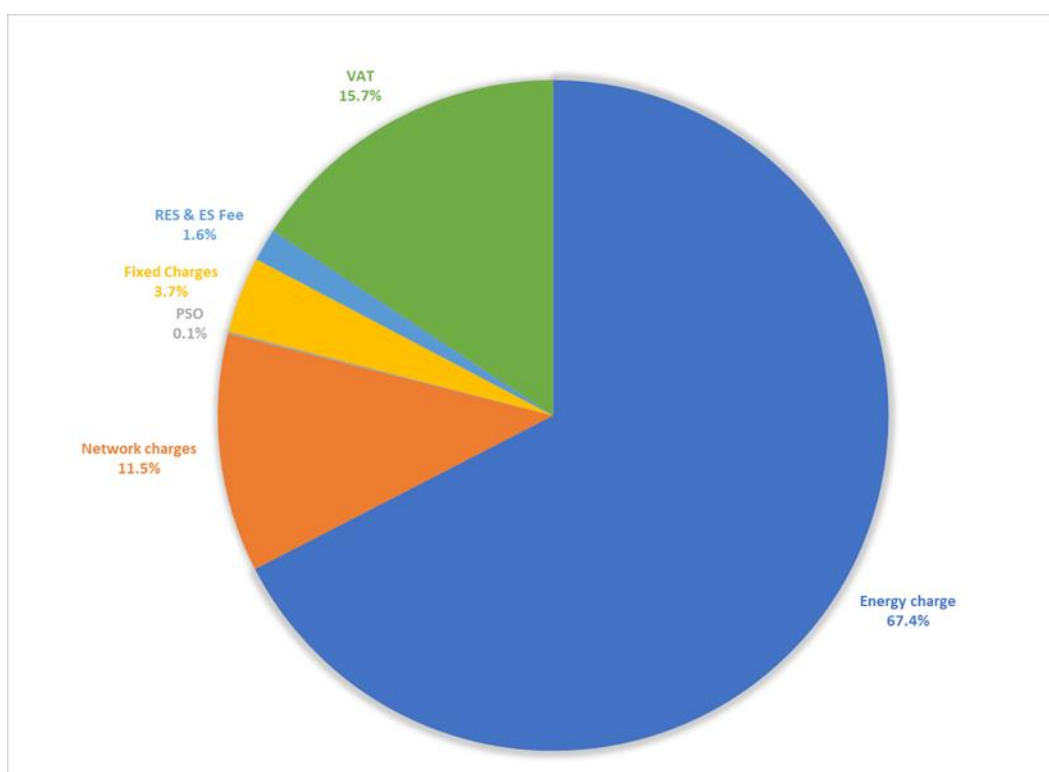


Figure 33. Electricity supply invoice analysis for a typical household consumer with bi-monthly consumption of 600 kWh (% on the final invoice), December 2021

Smart Meters

According to the Laws Regulating the Electricity Market in Cyprus of 2021 and 2022, CERA by Regulatory Decision determines the appropriate framework to ensure the deployment of smart meters throughout the territory of the Republic of Cyprus, with the aim of assisting the active participation of consumers in the electricity market.

The Regulatory Decision includes the minimum functional and technical requirements of the smart metering systems to be installed, which are in line with European standards and the provisions of the Law.

The deployment of these meters may be subject to cost-benefit assessment of all the long-term cost and benefit elements of the market and the individual consumers.

If the deployment of smart meters is assessed positively CERA, sets a timeframe for the installation of at least eighty percent (80%) of those meters to the end-consumers within 7 years from the date of their positive assessment.

In 2018, By Regulatory Decision 02/2018, “on the application of a binding timetable for the mass installation and operation by the DSO of an Advanced Metering Infrastructure (AMI)”, CERA instructed the DSO to proceed with the full roll out of smart meters. It is expected that the 400,000 smart meters shall be installed by 2025 as per DSO’s schedule. The installation of the meters is expected to start in 2022.

With respect to the provisions of the above-mentioned Regulatory Decision 02/2018, CERA performed a compliance check of DSO, the findings were recorded, and specific deviations were highlighted regarding the DSO's compliance with the regulatory framework.

Having regard to the findings of the check performed, CERA took the appropriate actions pointing out these findings to the EAC Board of Directors and particularly the specific deviation with instructions for their rectification and full implementation and compliance with the regulatory framework.

3.3. CONSUMER PROTECTION AND DISPUTE SETTLEMENT

Consumer Protection

The consumer protection measures, are effective and enforced through the Laws Regulating the Electricity Market of 2021 and 2022.

CERA has also been granted the power to contribute to ensuring high standards of universal and public service in compliance with market opening, to the protection of vulnerable customers, and to the full effectiveness of consumer protection measures.

CERA ensures that consumers are provided with all necessary information concerning their rights, current legislation and the means of dispute settlement available to them in the event of a dispute.

CERA has prepared and issued in electronic and hard copy format all the information needed regarding consumer's rights. This information is available at CERA's premises, at Citizens Service Centre and at the local district offices of the MECl. The Office of CERA, the Citizens Service Centre and the MECl shall constitute the single points of contact for consumer information purposes.

In summary, the energy consumers' rights that are covered by national legislation and comply with relevant EU directive can be classified in six categories:

- Universal service (i.e. the right to be supplied with electricity/gas of certain quality and price),
- Customer information requirements,
- Change of supplier without imposing any charges,
- Complaints handling and out-of-court settlement of disputes,
- Protection of vulnerable consumers, and
- Fair commercial practices and general consumer rights

Moreover, CERA, based on the Decision of the Minister of Energy, Commerce and Industry, issued a Regulatory Decision (03/2016), by which CERA imposed on all electricity supply

licensees, PSOs with respect to specific vulnerable groups of consumers, by including them in the special tariff (code 08) of EAC, which compared to the normal domestic tariffs (codes 01 and 02) has reduced charges and their supply of electricity cannot be cut off due to no payment.

The categories of vulnerable consumers defined in the Regulatory Decision are:

- The recipients of public assistance provided by the Social Welfare Services of the Ministry of Labour, Welfare and Social Insurance,
- The beneficiaries of guaranteed minimum income provided by the Welfare Benefits Administration Service of the Ministry of Labour, Welfare and Social Insurance,
- Families with more than 3 dependent children with an annual gross family income up to € 51,258. The income criterion of €51,258 for annual combined gross family income is increased by €5,126 for each additional child over the number of fourth,
- The recipients of severe motor disability allowance provided by the Department for Social Inclusion of Persons with Disabilities, Ministry of Labour, Welfare and Social Insurance,
- The recipients of care allowance in paraplegic individuals granted by the Department for Social Inclusion of Persons with Disabilities, Ministry of Labour, Welfare and Social Insurance,
- The recipients of care allowance in quadriplegic individuals granted by the Department for Social Inclusion of Persons with Disabilities, Ministry of Labour, Welfare and Social Insurance,
- The recipients of the grant to blind granted by the Department for Social Inclusion of Persons with Disabilities, Ministry of Labour, Welfare and Social Insurance,
- Hemodialysis renal patients who receive a mobility allowance from the Department of Social Inclusion of Persons with Disabilities of the Ministry of Labour, Welfare and Social Insurance, and
- Individuals suffering from multiple sclerosis who are registered members of the Cyprus Multiple Sclerosis Association.

Performance Indicators

CERA has the power to issue Regulations concerning the protection of the interests of the consumers of electricity requiring that any supplier of electricity and the ODS, within a prescribed time period, propose and implement procedures for the submission of complaints by consumers, which allow consumers to register complaints and prescribing how any supplier and the ODS shall respond to complaints received by consumers.

The Regulations may impose requirements on suppliers and the ODS relating but not limited to:

- Procedures for the submission and, where appropriate, re-submission of proposed complaints procedures for approval.
- The timetable for the implementation of the complaint's procedures.
- Fines for failure to comply with the consumer complaints Regulations relating to the

preparation or implementation or review of complaint procedures.

- A requirement that suppliers and the ODS review their complaints procedures at intervals of not more than five years.
- Establishing procedures to deal with complaints from consumers that are not settled through complaint procedures to the satisfaction of consumers.

Specifically, the following Regulations relevant to the above mentioned were enacted:

- Law Regulating the Electricity Market (Complaint Submission Procedure) Regulations of 2005 which are currently under internal legal review.
- Law Regulating the Electricity Market (Performance Indicators) Regulations of 2005 which are currently under the procedure of legislative amendment.

The first of the above-mentioned Regulations, determines the procedure for the submission of complaints by consumers in cases where suppliers of electricity and/or the ODS, are in breach of their obligations or duties and/or are acting outside the scope of their prescribed by the Law jurisdiction.

Specifically, the above-mentioned Regulations provide for the following, inter alia:

- Consumers' right to submit complaints to the suppliers and/or the ODS.
- The obligation of the supplier and/or ODS to respond to the complaints.
- The right to submit complaints to CERA and the procedure for examining complaints by CERA.
- The omission of the supplier and ODS to comply with CERA's' Decisions.
- The fines.

The Law Regulating the Electricity Market (Performance Indicators) Regulations of 2005, set the minimum level of performance in relation to the performance indicators of the supply of electricity, which must be achieved by the supplier and the ODS. The Regulation sets the time limit within which a supplier and the ODS must respond, determines the fines, the procedure of payment and the time at which the fines are to be paid in cases where the supplier or the DSO fail to comply with the performance indicators set out therein.

By the implementation of these Regulations, the rights of the consumers are safeguarded, their protection is secured, the procedure for the submission of consumer complaints is regulated in the event that suppliers of electrical energy and/or the ODS are in breach of their obligations, competences and duties, the end result being the improvement of the services offered to consumers.

In the context of applying and complying with the above provisions, provided below for each Performance Indicator are the fine amounts paid to the electricity consumers by EAC as Owner of the Distribution System and Licensed Supplier. These amounts have been recorded for the period from January 2022 to 31 December 2022. Also presented, for comparison purposes,

are the corresponding results in previous years.

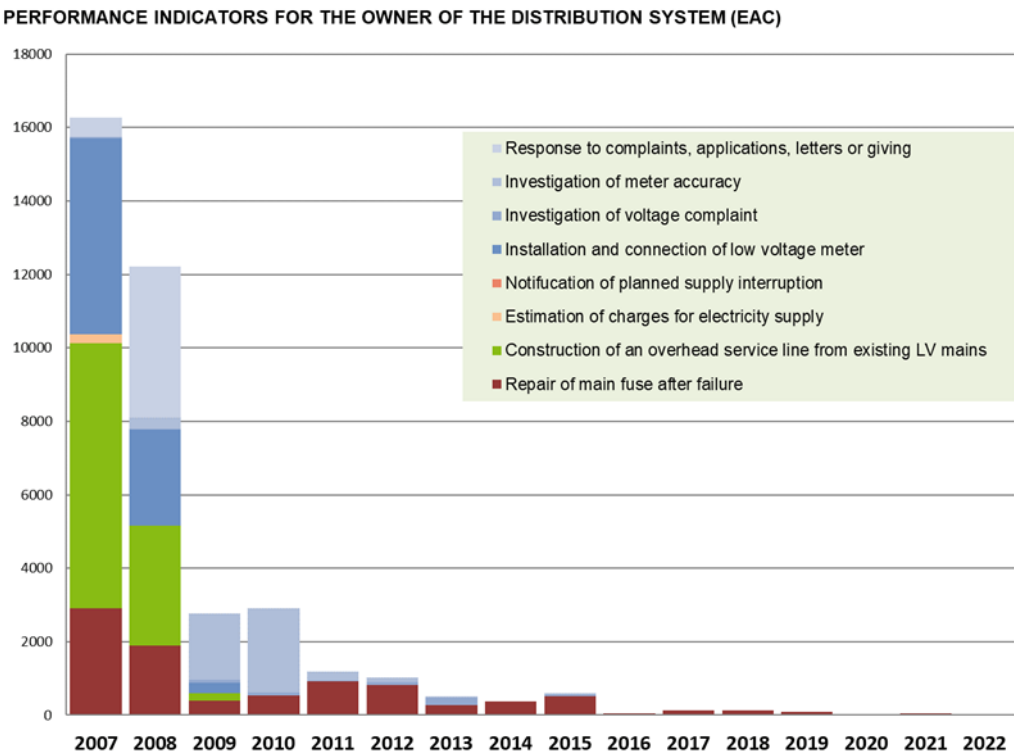


Figure 34. Performance Indicators of EAC as ODS

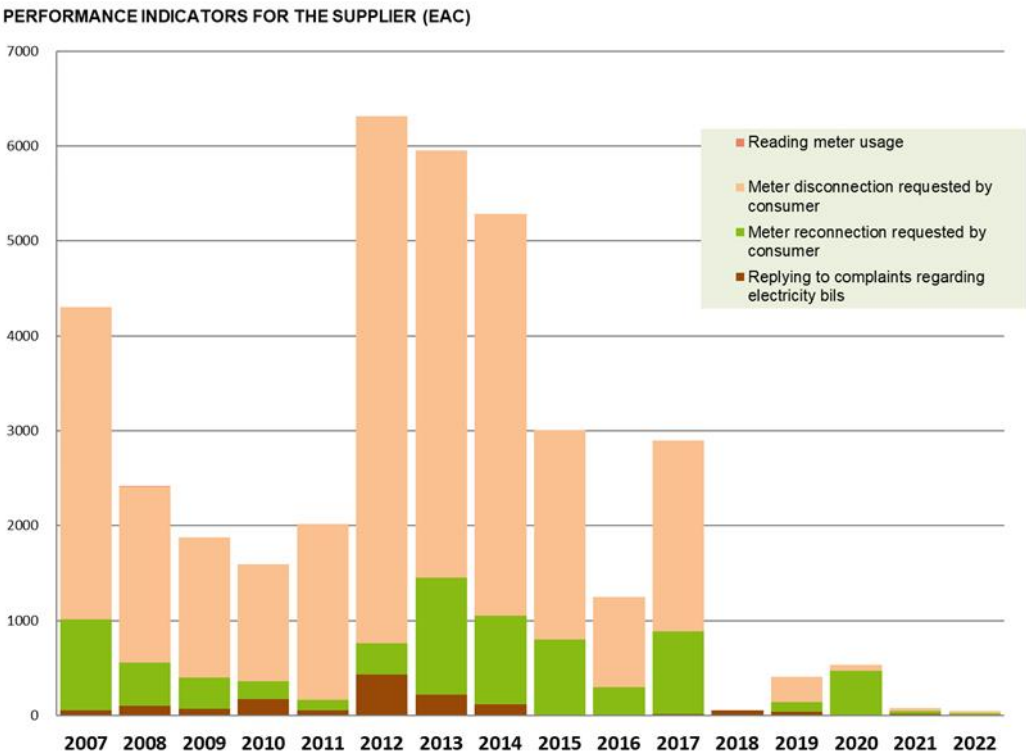


Figure 35. Performance Indicators of EAC as the supplier

From Figures 34 and 35, it appears that in the year under review, the performances of EAC both as an ODS and supplier showed improvement compared to previous years and are

therefore considered satisfactory.

Consumer Complaint Submission Procedure

By Decision 88/2022, having regard to the Laws Regulating the Electricity Market (Complaint Handling Procedure) Regulations of 2005, CERA decided to define the Consumer Complaint Submission Procedure, which is posted on CERA's website, <https://www.cera.org.cy/el-gr/katanalotes>.

According to this procedure:

- Any energy consumer may submit a written complaint to the supplier and / or Owner of the Distribution System (ODS) and/or Distribution System Operator (DSO) regarding an alleged breach of its obligations, responsibilities and duties arising from electricity supply performance indicators or a breach in relation to any other matter falling within the obligations, responsibilities and duties of the supplier and/or the ODS and/or the DSO.

The supplier and/or ODS and/or DSO shall respond to consumer complaints within the specified performance indicator deadline:

- Response to complaints, requests, letters or information - 20 days
 - Investigation into voltage-related complaints - 30 days
 - Investigation into meter accuracy-related complaints - 30 days
 - Response to bill-related complaint - 3 days
- The supplier and/or ODS and/or DSO shall consider the complaint within the specified performance indicator deadline and inform the consumer of its decision or action on the complaint within the specified performance indicator deadline.
 - In the event that the consumer is not satisfied with the decision or action taken by the supplier and/or ODS and/or DSO, the consumer is entitled to submit a new complaint within seven days of receiving such decision or response by the supplier and/or ODS and/or DSO.
 - Consumer may submit a written complaint to CERA if he or she is not satisfied with the response/decision by the supplier and/or ODS and/or DSO or if the supplier and/or ODS and/or DSO fail to respond to the complaint within the specified performance indicator deadlines or comply with the requirements set out in the performance indicators.

Only consumers that followed the above procedure and were NOT satisfied by the supplier and/or ODS and/or DSO, can lodge a written complaint to CERA.

Consumer complaints

Regarding consumer's complaints, which have been presented or formally submitted to CERA, it could be said that they were maintained within acceptable levels. Registered consumer complaints are shown in Figure 36. Most of the complaints concerned invoicing/billing issues

and connection to the grid. CERA handled with care the complaints, with the collaboration of EAC and TSOC, leaving the consumers in most cases satisfied.

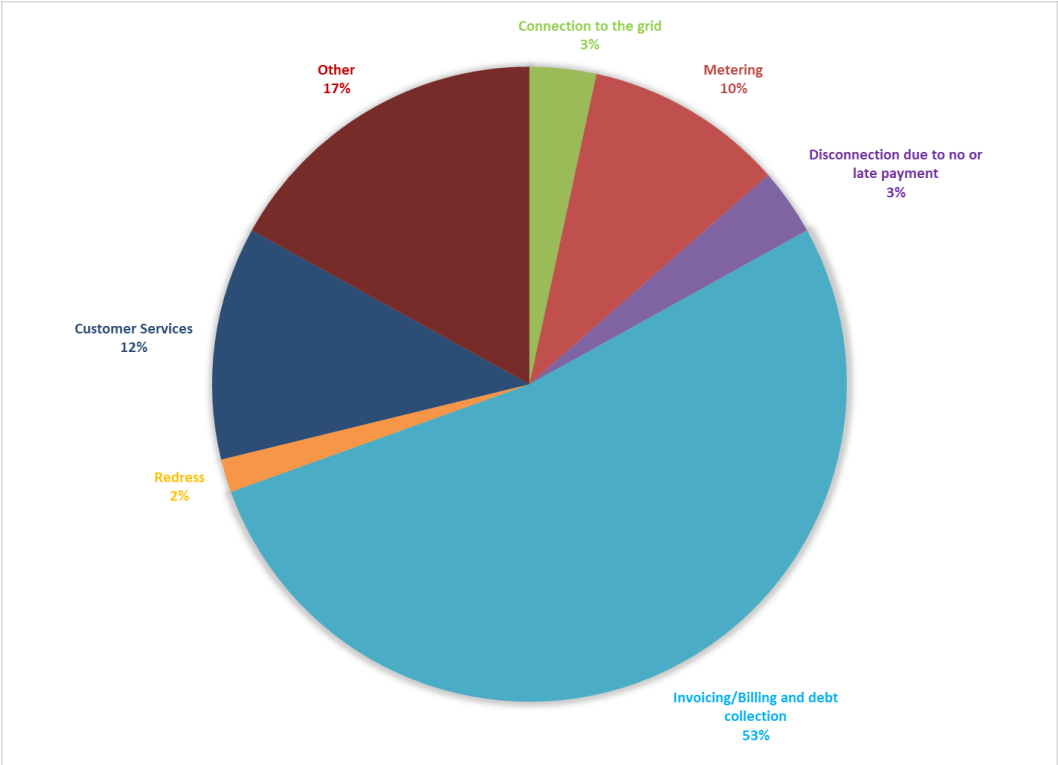


Figure 36. Complaints submitted to CERA in 2022

4. THE NATURAL GAS MARKET

Currently, the natural gas market in Cyprus is non-existent, since natural gas is not yet available in the country's energy mix. This has adverse effects on the cost of electricity generation, causing also a lack of energy source diversity for the country in general. Moreover, the environmental cost associated with the extensive use of heavy fuel oil for power generation is significant, as the country's ability to meet emission targets and limits laid down by EU legislation is affected.

4.1. LEGISLATIVE FRAMEWORK

The current Laws Regulating the Natural Gas Market of 2004 to 2022, which embrace the important features of the Third Energy Package, provide for the regulation of the natural gas market in the Republic of Cyprus and, among others, establish rules for the transmission, distribution, supply and storage of natural gas. In addition, they specify the rules for the organization and operation of the natural gas sector, the access to the market, the exploitation of the networks and the criteria and procedures required to issue licences for the transmission, distribution, supply and storage of natural gas. Also, CERA's duties, responsibilities, range of activities and role are described.

It is noted that the Laws Regulating Natural Gas Market of 2004 to 2022 contain the key provisions for the imminent introduction of natural gas in the country's energy balance. However, they do not specify the market model and the organizational framework that will be used for the development of the market, thereby providing reasonable flexibility to decision-makers to make the proper choices. In addition, they allow for derogations, according to the provisions of the Directive; however, without specifically establishing these derogations, leaving them to the discretion of the Council of Ministers.

A key element of the new operating framework of natural gas and electricity markets, as it is described in the European legislative framework (Third Energy Package), is the unbundling of activities of generation and trade of natural gas. These activities should take place within a competitive environment, like the activities of transmission and distribution, for which the regulated access of third parties is allowed under the supervision of national regulatory authorities, ACER and the European Commission.

The Laws Regulating the Natural Gas of 2004 to 2022 provide for Cyprus the possibility of derogation from certain articles, because it can be considered either an isolated or an emerging market. In the case of Cyprus, it is possible, on one hand, to derogate from applying the competition in the supply of natural gas to end consumers, especially as long as the natural gas market of Cyprus is considered emerging. On the other hand, it is possible not to separate the activities of the operators of natural gas (transmission, distribution, storage, LNG, etc.) from those of trade and supply, in the manner described in the Directive, for example, as regards ownership unbundled transmission facilities.

The Council of Ministers by Decision 87,649 dated 5 June 2019, in accordance with the provisions of the Law, determined the operating framework of the natural gas market for the effective period of the emerging market or until the Council decides to terminate the derogations, and appointed Operators. More specifically, according to the Decision, the competition is not applied in the supply of natural gas to the end consumers as long as the market is emerging; therefore, the supplier is responsible for concluding all the relevant contracts of natural gas import, including the LNG, as well as all contracts of supply of natural gas to consumers of all categories. In addition, by this Decision, the Natural Gas Public Company (DEFA Ltd) was appointed as a TSO, a DSO and a Liquefied Natural Gas Facility Operator (LNG Operator) for a period of thirty years (30), starting from the date of issuance of the corresponding licences by CERA.

Furthermore, with Decision no. 91,503 dated 7 July 2021 and based on the provision of the Law, the Council of Ministers appointed the DEFA Ltd as the Storage System Operator (SSO) for a period of thirty years (30), starting from the date of issuance of the corresponding licences by CERA. In addition, it decided on the partial derogation of implementation until 2025 of:

- Article 18 of the Laws Regulating the Natural Gas Market of 2004 to 2022, on the independence of the Transmission System Operator (TSO), which provides that the TSO must be independent in terms of its organization and decision-making from monopolistic activities not related to Transmission, namely the Distribution, Storage and Operation of the LNG System. As a result, the TSO is not required to be independent in terms of its organization and decision-making from the Distribution, Storage and Operation of the LNG System. However, the TSO shall be independent only in terms of organization and not decision-making regarding the supply of natural gas, and
- Article 24 of the Laws Regulating the Natural Gas Market of 2004 to 2022, on the independence of the DSO, which provides that the DSO must be independent in terms of its organization and decision-making from monopolistic activities not related to Distribution, namely the Transmission, Storage and Operation of the LNG System. As a result, the DSO is not required to be independent in terms of its organization and decision-making from the Transmission, Storage and Operation of the LNG System. However, the DSO shall be independent only in terms of organization and not decision-making regarding the supply of natural gas.

4.2. COMPETITION AND MARKET FUNCTIONING

In June 2016, following the report submitted by CERA regarding the options for the development of the natural gas market in Cyprus, the Council of Ministers decided on the arrival of LNG in Cyprus as soon as possible and before 2020. LNG will initially be the exclusive option of supplying the internal market with natural gas. Then, after supplying the internal market with natural gas from indigenous deposits, it will be an alternative option that will ensure the security of the energy supply.

Following the study conducted by DEFA Ltd regarding the development of natural gas market

in Cyprus, in order to make good use of the most suitable solution to import LNG by 2020 at the latest, the Council of Ministers decided, in June 2017, to assign to DEFA Ltd the announcement of two tenders for long-term supply of LNG and for a strategic investor for the required infrastructure.

Following a decision of the Council of Ministers of April 2018, a Special Purpose Vehicle - SPV under the name Natural Gas Infrastructure Ltd (ETYFA Ltd) was established which will implement the required infrastructure for the arrival of LNG.

In October 2018, DEFA Ltd, acting on behalf of ETYFA Ltd, published an invitation to tender for the design, construction and operation of the LNG import terminal station in the bay of Vasilikos. The tender was awarded to an international consortium in December 2019.

The entry of natural gas in the energy balance, in the context of the objectives of the energy policy for the diversification of the energy sources of the country and the protection of the environment, is an important decision in the energy sector.

Considering that the natural gas market in Cyprus is developing, the main goal is to create an organized market, according to the standards of the advanced global markets, and the best practices of the European natural gas market, with the proper operation of all stakeholders in the market, whether they are gas undertakings or bodies established by law.

CERA gives high priority to the fast and effective penetration of natural gas on competitive terms in the market of the Republic of Cyprus.

CERA's obligations pertaining to the purchase of natural gas and its regulatory jurisdiction are defined in the Laws Regulating the Natural Gas Market of 2004 to 2021. In the period leading up to the arrival of natural gas, CERA is working towards setting up the regulatory framework of the market, knowing that it will act as the guarantor for the operation of the market and the protection of the consumers during the derogation period, as well as the smooth transition to a healthy open market.

In this respect, CERA:

- by Regulatory Decision 01/2019 issued Statement of Regulatory Practice and Natural Gas Tariffs Methodology which includes the provisions in place during the emerging market period. The Statement specifies, inter alia, how the Operator will make its proposals to CERA which, in accordance with this Statement, will approve the required revenue from the use of the facilities that fall under the Operator's jurisdiction and the how the sole supplier, will make its proposals to CERA on the allocation of the cost of using all natural gas facilities to the various consumer categories which will be taken into account by CERA when approving supply tariffs. The Statement of regulatory practice and natural gas tariffs methodology was published in the Official Gazette on 14 June 2019.
- by Decision 91/2020, dated 5 March 2020, CERA issued the rules for supplying natural

gas. These rules regulate the rights and obligations that natural gas suppliers and customers have, during negotiation and conclusion of contracts, as well as when fulfilling their contractual obligations, in accordance with the Articles 23 and 46 of the Law.

- by Decision 245/2020, dated 31 July 2020, it decided to issue Regulatory Decision No. 04/2020 entitled “Accounting unbundling of activities of natural gas undertakings” which concern the issuance of instructions and guidelines with respect to the Accounting Unbundling of activities of natural gas undertakings, which was published in the Official Gazette on 07 August 2020.
- by Decision 246/2020, dated 31 July 2020, it decided to issue Regulatory Decision No. 04/2020 entitled “Regulatory Accounting Instructions for the preparation of separate accounts of natural gas undertakings” regarding the provision of guidelines to the Liable Organizations on the preparation of separate accounts, to ensure unhindered approval of tariffs by CERA and to prevent discrimination among consumers of the same category. More specifically, it was specified how the Liable Organizations should prepare, monitor and submit the separate accounts and what information to include in these separate accounts. Regulatory Decision No. 05/2020 was published in the Official Government Gazette on 07 August 2020.
- By Decision 73/2021, dated 26 February 2021, CERA issued the Guidelines on conducting an estimate of natural gas demand in the natural gas transmission system by the Natural Gas Transmission System Operator and the Conclusion of Interconnection Agreements. In addition, by Decision 74/2021, dated 26 February 2021, CERA issued the Guidelines on preparing the natural gas transmission system development plan, which is prepared by the Transmission System Operator and concerns the coming ten (10) years.
- by Decision 43/2022, dated 12 July 2022, it decided to issue Regulatory Decision No. 07/2022 entitled “Regulatory Decision regarding the Statement of Regulatory Practice for the supply of natural gas via virtual pipelines” with which it determined, inter alia, the roles and responsibilities of involved Operators, the supply undertaking and the final customers, as well as matters pertaining to the relevant infrastructures that are required for the transportation of compressed natural gas and LNG via virtual pipelines. Regulatory Decision 07/2022 was published in the Official Government Gazette on 15 July 2022.

Licensing

The licencing of natural gas related activities are regulated by the Laws Regulating the Natural Gas Market of 2004 to 2022 and the Natural Gas Market (Issuing Licences) Regulations.

The licences issued by CERA, in accordance with Article 8 of Laws Regulating the Natural Gas Market of 2004 to 2022, concern the following activities:

- Construction and/or operation of natural gas facilities and/or storage facility and/or pipeline networks, pipelines and similar equipment.
- Execution of the duties of the owner of the natural gas facility and/or storage facility and/or pipeline networks, pipelines and similar equipment.
- Execution of the duties of the operating system.

- Supply of natural gas, inter alia, to wholesale customers.
- Supply of natural gas to eligible customers.
- Supply of natural gas to non-eligible customers.
- Execution of the duties of the operator of the natural gas import/ storage/ transmission/ distribution network.
- Execution of the duties of the owner of the natural gas import/ storage/ transmission/ distribution network.

Operating licence for Liquefied Natural Gas Facility

An Operating Licence for a Liquefied Natural Gas Facility was issued to DEFA Ltd in 2021.

By Decision 221/2022, dated 12 July 2022, CERA decided to amend terms of the Licence, aimed at providing flexibility to the Licensee regarding the conditions for maintaining natural gas within the temporary natural gas storage pipelines, and establishing a time schedule within which the Licensee must submit a quarterly update on the progress of the implementation of the LNG facility and the estimated commencement date of its commercial operation.

Applications for LNG Facility Construction, Ownership and Operation Licence

On 31 March 2020, Hoegh LNG Ltd submitted an application to CERA for a LNG facility construction, ownership and exploitation licence. CERA assessed the application as to its completeness under Regulation 4 of the Licensing Regulations (KDP 298/2006) and asked the applicant to submit additional information in order to complete the application. Following the extensions that CERA has granted to the applicant further to its requests, the deadline for the submission of the supplementary information has been set for 31 December 2022.

Licence for the construction, ownership, exploitation and operation of a Natural Gas Transmission System

In 2021, a licence for the Construction, Ownership, Exploitation and Operation of a Natural Gas Transmission System was issued to the Natural Gas Public Company (DEFA Ltd).

Regulatory framework for hydrogen economy

Having regard to the EU's hydrogen strategy, the strong interest of European Energy Regulators regarding the hydrogen's role in the energy market, the particular characteristics of the Republic of Cyprus energy system, as well as the advantages of using hydrogen, CERA, with the contribution of external professional consultants, moved forward in September 2022 with the preparation of a Report on the need to develop a regulatory framework that will govern the hydrogen market in the Republic of Cyprus entitled, "Guidelines on the Development of a Hydrogen Value Chain in the Republic of Cyprus" (CERA Report No. 18/2022).

This Report, as published on CERA's website, inter alia provides the potential means of hydrogen penetration into the energy market of the Republic of Cyprus, the benefits of using hydrogen with particular emphasis on electricity generation and the actions required for the development of a legislative and regulatory framework based on European Directives as these will be formulated in the context of the "Fit for 55" measures, the "Hydrogen and Decarbonised Gas Market Package", and the REPowerEU plan for the integration of hydrogen to the energy system. On a regulatory level, it is deemed that the basic principles for market operation, which will guarantee transparency and control, will need to be determined, thus creating the appropriate conditions for investments.

The Guidelines constitute the commencement of CERA's preparation for drafting the regulatory framework for the hydrogen market. Pursuant to these Guidelines, the development of a hydrogen value chain in the Republic of Cyprus by 2030 can be implemented in two phases:

- **Phase 1 (2022-2025):** Early stage of market development.
In this phase, priority should be given to establishing a national energy policy for hydrogen, determining the basic principles for stakeholder engagement and harmonisation with the national legislative and regulatory framework with relevant European Directives. Based on the national policy, the legislative and regulatory framework and the required preparation of engaged stakeholders, the hydrogen value chain could launch its development and the initial pilot quantities can be used in selected applications.
- **Phase 2 (2026-2030):** Development of the hydrogen market in the Republic of Cyprus.
This phase should focus on the design and implementation of targeted measures to resolve problems in individual parts of the hydrogen value chain as they arise. In this phase it is important to achieve harmonisation with European and international practices regarding the development of the hydrogen market; while it is expected that hydrogen will participate in covering the country's energy needs.

Cross-border issues

Currently, there are no cross - border gas interconnections in Cyprus, however specific interconnection projects are promoted as PCIs. The European Commission has declared several energy projects, which are of strategic importance for Cyprus and Greece, as potential PCIs.

The projects which concern Cyprus and have been included in the 5th Union list in the cluster of natural gas and related equipment for the transmission of gas are the following:

- "EastMed Pipeline" - A pipeline from indigenous resources offshore Cyprus to the island and then to Greece mainland via Crete
- "CyprusGas2EU" - Ending the isolation of Cyprus.

The CyprusGas2EU project, is a PCI project that ends the energy isolation of an EU Member State and it is essential for the Southern Gas Corridor (SGC). The project promoter submitted a request for investment to the Energy Regulators of Cyprus (CERA) and Greece (RAE) on 28

August 2017. Following consultations between CERA and RAE, an agreement on the cross-border cost-allocation was reached on 9 October 2017.

The EastMed pipeline project relates to an offshore/onshore natural gas pipeline. This PCI's importance is especially focused on creating a direct and permanent connection of newly discovered gas reserves in the Levantine basin (Cyprus and Israel) with European markets, through other diversified routes (such as Poseidon Pipeline and IGI). The project is promoted and operated by the Natural Gas Submarine Interconnector Greece-Italy Poseidon S.A.