Brief - Capacity Remuneration Mechanisms

The Green Tank

Introduction

The decarbonization of the electricity production sector is one of the most significant opportunities and challenges of the current decade. The rapid development of clean technologies has transformed the electricity market landscape; energy storage and flexibility have become key to ensuring system reliability.

However, despite the shift towards clean technologies, fossil fuels are still receiving financial support. According to the European Environment Agency, over the 2015-2021 period, fossil fuel subsidies in the European Union ranged between €57-62 billion per year. As a consequence of the energy crisis and Russia's invasion of Ukraine, subsidies more than doubled in 2022 (€136 billion); they decreased again in 2023, albeit remaining at very high levels (€ 111 billion)[1].

The energy crisis has, inter alia, revived in many EU Member States the debate on Capacity Remuneration Mechanisms (CRMs); the latter represent a form of state aid paid by consumers to electricity production plants based on clean technologies (e.g. electricity storage; demand-response; renewable energy), fossil fuels or nuclear energy.

No CRM is currently operating in Greece. Nonetheless, a CRM was running during 2006-2014, aimed at securing long-term availability of adequate electricity production to meet the load[2]; producers issued the so-called capacity availability certificates (CACs) and were remunerated per unit of capacity at a price set by the Regulatory Authority for Energy, Waste and Water (RAAEY). These costs were eventually passed on to consumers through supply tariffs. It is estimated that, over the entire 2006-2014 period, subsidies amounted to €3.8 billion[3]; of the latter, €2.9 billion supported the operation of fossil fuel plants, while the rest was channeled to hydropower plants.

Subsequently, following a proposal by the RAAEY, in 2016, the European Commission[4] approved the Transitory Flexibility Remuneration Mechanism (TFRM)[5], aimed at ensuring the rapid interchange between participating units (lignite; gas; hydro) in meeting the load. In 2020, the TFRM was extended for one year[6] or pending the implementation of a Long-Term

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[1] European Environment Agency (EEA). 29.01.2025. "Fossil fuel subsidies in Europe". https://bit.ly/4jPdElo
[2] IPTO. 2012. Capacity Remuneration Mechanism Guide. https://bit.ly/4kJOeql
[3] WWF Hellas, 2018. Fossil fuel subsidies in Greece. https://bit.ly/4mR8sAe
[4] RAAEY. 12.08.2016. Call for applications to the Transitory Flexibility Remuneration Mechanism. https://bit.ly/3FUHebi
[5] Government Gazette B 94/26.01.2016. https://bit.ly/4l9OeAd
[6] Government Gazette B 2852/13.07.2020 https://bit.ly/4kFcxWP

CRM. The latter, designed to support mainly lignite plants, was submitted to public consultation in 2019[7], at the same time as Greece's Public Power Corporation (PPC) was attempting to sell part of its lignite portfolio. Nevertheless, this CRM never run, as it was not approved by the European Commission's Directorate General for Competition due to its incompatibility with the fundamental provisions of the -then- new Regulation (2019/943) on the internal electricity market[8].

Recently, there have been increasing references in the public debate regarding the introduction of a new CRM, focusing mainly on the remuneration of fossil gas plants. As announcements regarding new gas plants are increasing, unaccompanied by announcements regarding older plants' retirement, two questions arise: Firstly, are all these gas plants necessary for system adequacy? Secondly, will their economic viability require financial support via a CRM?

Thus, in order to prevent burdening consumers and the national economy to no avail, as well as the risk of a possible derailment from climate targets, it is vital to determine the need for such a capacity remuneration mechanism; moreover, the conditions for its establishment, as well as its distinct features, should be carefully examined.

This brief aims to contribute to this direction. First, we define the different CRM categories, their remuneration schemes, and their link to the concept of flexibility, which is essential for system reliability. Next, we present the steps to be taken by Member States in designing a CRM in line with current European legislation. We then describe the fundamental features and trends of the different CRMs currently operating in other EU-27 Member States. The brief concludes with recommendations to effectively address the challenges of capacity adequacy in Greece.

Capacity Remuneration Mechanisms (CRMs)

What are they?

Capacity Remuneration Mechanisms (CRMs) are a type of state aid. These elements of the electricity market design aim at guaranteeing adequate capacity to meet demand at all times, even in emergency conditions. Through CRMs, electricity producers are remunerated to make the capacity of their plants available over a given period in the future. In other words, they are paid for the availability of their units, regardless of whether or not these units produce energy.

Who bears the cost?

Remuneration to electricity producers is paid by the electricity system operator conducting the capacity auctions. The cost of the relevant contracts is passed on to the electricity suppliers, proportionally to the amount of electricity consumed by their customers; in turn, final electricity consumers defray these costs.

[7] ClientEarth, The Green Tank. 2019. Observations on the proposed Greek capacity mechanism. https://bit.ly/4kEVLqJ

[8] Mantzaris, N., "Conflicting policies threatening the sustainability of Greece's electricity model: short history and lessons learnt", Regional Integration, 2024 (18), pages 115-135. https://bit.ly/4432xjb

Categories

Most commonly, CRMs are capacity market-based (CM), where capacity providing units are allowed to participate in the wholesale electricity market, thus influencing price development. On the other hand, there is the case of Strategic Reserves (SR), where the respective units are not allowed to participate in the market and therefore do not affect prices. Units are remunerated exclusively through the SR mechanism to be on standby and only activated in exceptional cases to meet peak demand or other capacity supply shortages.

With regard to technologies, a CRM may include clean flexibility options (storage; demand response); renewable energy sources (RES); electrical interconnectors; fossil fuel plants (using fossil gas; lignite; coal; oil); or nuclear plants.

All CRMs are designed at national level, and can only be implemented if their necessity is sufficiently documented through a resource adequacy assessment carried out on the basis of a specific methodology. The CRM design is then submitted to the European Commission for assessment and approval regarding its compliance with both the internal electricity market and State aid rules.

Why are CRMs currently necessary?

The EU gradually introduced legislation on CRMs in response to the changes brought about by technological developments and the deregulation of the electricity market (see Figure 1 for a review of the evolution of the European legislation regarding CRMs).

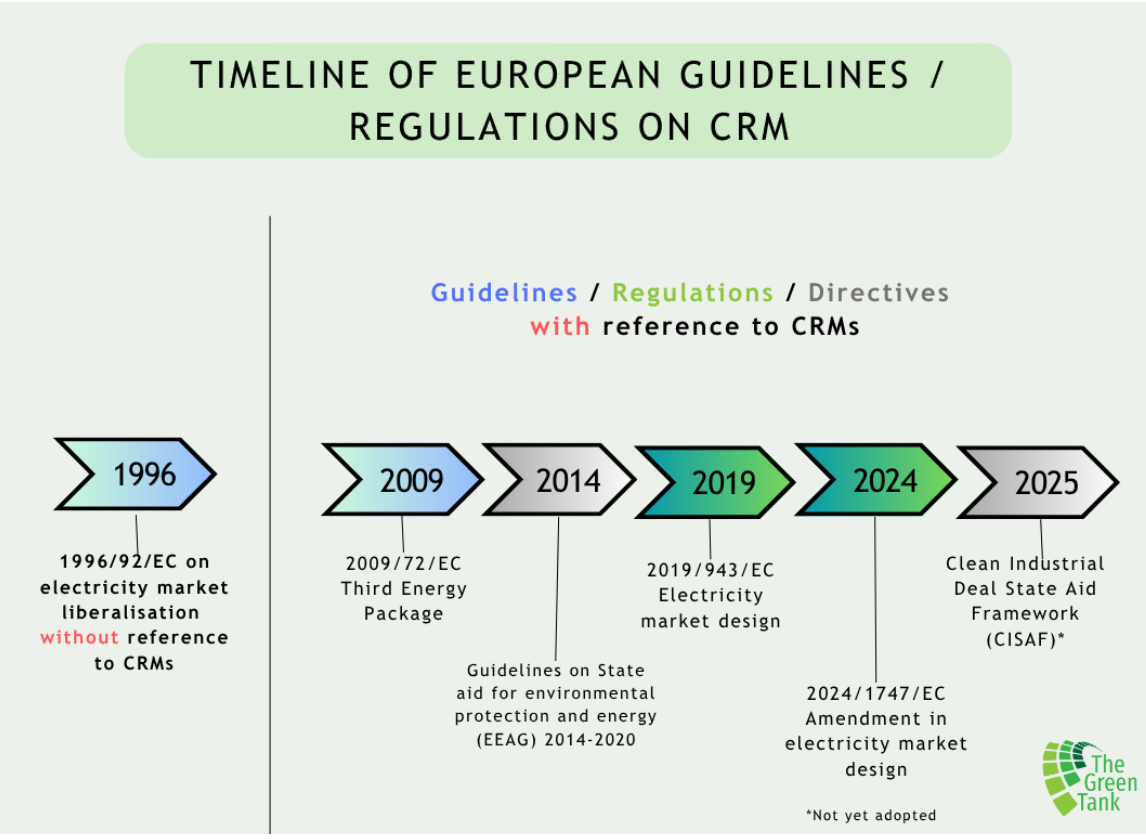

***Figure 1**: Evolution of European directives, regulations and guidelines on capacity remuneration mechanisms.*

As RES penetration in the energy mix increases, so does the need for flexibility, namely, the system's ability to respond quickly to supply and demand fluctuations, which are inherent in systems that rely heavily on RES. At the same time, the gradual decoupling from fossil fuels commands an expansion of clean flexibility options, such as electricity storage (batteries; pumped storage; thermal storage; etc.) and demand-response.

Flexibility services can also be provided by fossil gas plants, as they are able to scale up and down their production rapidly. Thus, until alternatives are developed, certain gas plants may be key to guaranteeing capacity adequacy. However, given renewables' increasing share in meeting demand, the operation of these plants may soon be significantly reduced; consequently, these plants' economic viability may not be sustained by the revenue from the sale of electricity alone. In this case, a CRM serves to provide additional financial support to these units, so as to prevent their retirement, which could, in turn, jeopardize supply security.

Risks

Nonetheless, special attention and consideration of each country's specific circumstances is required when designing a CRM to support gas plant capacity. If the latter exceeds the capacity strictly necessary to meet peak demand, there will be a disproportionate financial burden on consumers due to the additional CRM costs. Furthermore, if the CRM-supported gas plants also participate in the electricity market, the costs will further rise due to the increase in wholesale market electricity prices, as the latter are determined by default by the most expensive gas plant on a daily basis.

Furthermore, a possible surfeit of gas-fired electricity production jeopardizes climate targets. Indeed, in the case of Greece, the increased gas-fired electricity production throughout 2024 drove the sector's emissions above 2023 levels; at 15.6 Mt CO2, emissions in 2024 were nearly quadruple the National Energy and Climate Plan (NECP) target for 2030 (4 Mt)[9].

Moreover, in the case of Greece, the risk of formulating an oversized CRM in support of gas-fueled plants becomes even more visible when considering the country's current planning, which introduces additional such units -in addition to the capacity currently in commercial operation (6 GW). Specifically, taking into account:

(a) the new 877 MW gas plant, currently in trial operation[10];

(b) the new 840 MW gas plant under construction[11];

(c) the gas plants licensed for production[12];

(d) the two new gas plants in Western Macedonia (Ptolemaida V and Agios Dimitrios, with a capacity of 350-500 MW and 100 MW, respectively) that were recently announced[13];

[9] The Green Tank. December 2024. The carbon footprint of electricity production. https://shorturl.at/XkYY7
[10] GEK TERNA. Komotini Combined-Cycle Gas Turbine Power Plant fueled by natural gas. https://shorturl.at/bsxoS
[11] Copelouzos group. Alexandroupolis CCGT power plant. https://shorturl.at/GDXFs
[12] RAAEY. November 2024. Electricity production licensing registry. https://bit.ly/4jPez5y
[13] PPC. 03.04.2025. PPC Group: a €5.75 billion investment in green energy and technology transforms Western Macedonia. https://bit.ly/45VLZvL

and given that no relevant plant retirement plan has been announced to date, the total installed capacity of gas plants nationwide may reach 11.5 GW in the coming years; this figure is nearly double the current capacity and far exceeds the planning reflected in the NECP (7.9 GW of gas-plant capacity in 2030). At the same time, Entso-e data analysis (regarding the period 2019 - first half of 2024) indicates that the maximum capacity of thermal plants required to meet domestic electricity needs is constantly dropping (-27.6% compared to 2019). At 5.1 GW in 2024, the maximum required capacity was significantly below the total capacity of existing gas plants (6 GW). In fact, over the entire period January 2023-June 2024, the required thermal plant capacity did not exceed 6 GW -not even for one hour; moreover, in the 3.5 years between January 2021-June 2024, the relevant capacity exceeded 6 GW just for one hour[14].

Based on the above analysis, it is reasonable to question the need for this increased gas plant capacity in ensuring Greece's capacity adequacy. If the former is indeed deemed unnecessary following a resource adequacy assessment, launching a CRM to support excess gas plant capacity would be a step in the wrong direction: it would contradict European legislation and, upon implementation, futilely drive up electricity costs.

Design

CRMs aim at ensuring that capacity adequately meets electricity demand. Nonetheless, the European legislation stipulates that they should be designed in line with climate targets so as to safeguard the decarbonization of the electricity production sector. Based on current European legislation, the conditions for a Member State to establish a capacity adequacy mechanism are as follows (see Figure 2):

1. **Resource Adequacy Assessment:** Firstly, the necessity of a CRM must be confirmed, through the identification of capacity adequacy issues that pose a risk to supply security. To this end, a European Resource Adequacy Assessment (ERAA) is being carried out by Entso-e at European level, in line with Regulation 2019/943 (Article 23)[15]. Each Member State may also conduct a study at national level (National Resource Adequacy Assessment, NRAA), in accordance with Article 24 of the same Regulation, applying the ACER methodology[16]. The assessment is based on a central scenario, which must be consistent with national policies as reflected in the respective NECP. The study includes (i) the calculation of system reliability indicators (LOLE, EENS)[17] at various future dates, so as to quantify and time capacity adequacy issues, and (ii) the assessment of the economic viability of capacity providing units, so as to determine the capacity that may require CRM support to guarantee adequacy.
2. **Strategic Reserves (SR):** Next, and as a priority, the Member State must assess the competence of a CRM in the form of SR -namely, a scheme providing financial support to units withdrawing from the electricity market- in addressing capacity adequacy

[14] The Green Tank. 10.09. 2024. How much gas capacity does Greece need? https://shorturl.at/yL2JS
[15] REGULATION (EU) 2019/943 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 5 June 2019 on the internal market for electricity (recast) https://shorturl.at/oi589
[16] 02.10.2020, ACER, Methodology for the European resource adequacy assessment. https://bit.ly/4kA6rH3
[17] LOLE: Loss of Load Expectation; EENS: Expected Energy Not Served

issues[18]. If a Strategic Reserve mechanism is deemed inadequate, the Member State may implement a capacity-market mechanism, which allows production units' participation in the electricity market.

3. **Technological neutrality and uniform design:** Pursuant to European legislation[19], the CRM must be open to the participation of all technologies, including energy storage and demand-response, in order to guarantee the lowest possible cost for consumers. Furthermore, the European legislation recommends avoiding the fragmented planning of multiple CRMs. For instance, a Member State considering additional non-fossil flexibility schemes should consider integrating them into existing CRMs, in line with the revised Regulation on the internal electricity market (2024/1747)[20].
4. **Exclusion of coal plants:** For a fossil fuel plant to participate in a CRM, its carbon intensity must not exceed 550 g CO2/kWh. This restriction, thus, excludes coal plants[21], as the most innovative and least polluting of the latter have a minimum carbon intensity of 800 g CO2/kWh[22].
5. **Cross-border participation:** Importantly, the CRM design should promote cross-border participation, namely, allow for capacity providing units located in neighboring countries to contribute in addressing adequacy shortages in the country under consideration[23].
6. **Transparency and consultation**: The European Commission's State Aid Guidelines[24] require that, as of 1 July 2023, Member States carry out a 4-6 week public consultation on any supply security measure that requires State aid approval. This process guarantees that stakeholders are informed and have the opportunity to provide information regarding competition or cost issues.
7. **Approval by the European institutions:** ACER must approve the European Resource Adequacy Assessment carried out by Entso-e, as well as settle any differences that may arise between the European and national resource adequacy assessments. The proposal regarding the establishment of a CRM is submitted by the Member State to the European Commission's Directorate General for Competition; the latter, then, examines the proposal against the Climate, Energy and the Environmental Aid Guidelines (CEEAG) and either gives final approval or requests amendments in case of deviations from the Guidelines (as, for instance, if a consultation has been omitted).

[18] Article 21 par. 3 of Regulation (EU) 2019/943.
[19] Article 22 par. 1 of Regulation (EU) 2019/943.
[20] REGULATION (EU) 2024/1747 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 June 2024 amending Regulations (EU) 2019/942 and (EU) 2019/943 as regards improving the Union's electricity market design. Article 19g, par. 1. https://shorturl.at/eZFI3
[21] Article 22, par. 4 of Regulation (EU) 2019/943.
[22] IEA, 2016. "The long road from Paris: the carbon impact of new power generation" https://bit.ly/3FT6KxG
[23] Article 26 par. 1 of Regulation (EU) 2019/943.
[24] European Commission, 2022. "Guidelines on State aid for climate, environmental protection and energy". https://shorturl.at/GPGwj

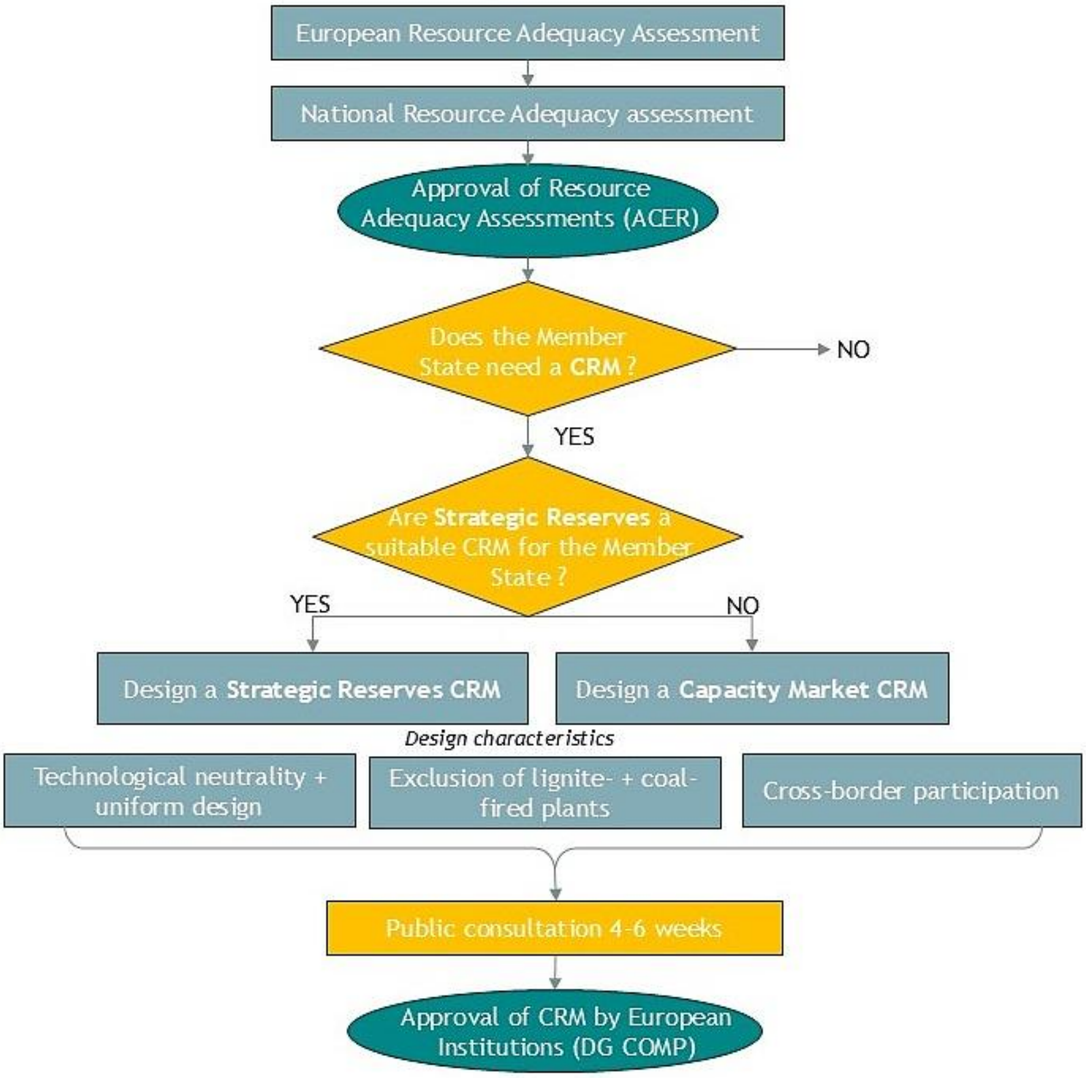

***Figure 2**: The process for establishing a Capacity Remuneration Mechanism (CRM) under European legislation.*

The European experience

CRMs in Europe mostly remunerate fossil-fueled and nuclear plants

In Europe, six countries (UK, France, Italy, Poland, Belgium, and Ireland) have market-based CRMs in operation, with subsidized plants also participating in the electricity market (CM); three countries (Germany, Sweden, and Finland) have established strategic reserves (SR).

Over time, the majority of CRM payments has been channeled into fossil fuels. According to the report by Aurora prepared for the pan-European Beyond Fossil Fuels campaign[25], from 2015 to 2024, a total of €63.7 billion has been granted to fossil fuel and nuclear plants across Europe. As illustrated in Figure 3, the largest share has been dedicated to fossil gas plants (€43.5 billion), while much less has been allocated to lignite or coal plants (€7.82 billion). Italy has spent the largest share of payments on gas plants (82% of total during the Italian

[25] Beyond Fossil Fuels. 28.01.2025. “Capacity remuneration mechanisms in Europe”. https://bit.ly/45qyNz3

CRM's six years of operation), while Poland has paid the largest sum to solid fossil fuel plants (€6 billion). A small amount (€1.8 billion) has supported other carbon-intensive technologies such as oil-fired or waste-to-energy plants, while €10.6 billion has been paid to nuclear power plants, almost entirely in France.

Significantly, the total of these payments is nearly triple the amount allocated to clean flexibility solutions (€24.6 billion). Nonetheless, as reflected in the latest auctions, particularly in the UK, Poland and Italy, clean flexibility sources are gradually gaining momentum in Europe. Notably, electricity storage plants have received the second largest amount (€11.7 billion) behind gas plants, attesting to these technologies' demand and competitiveness. With regard to other clean flexibility options, renewables (mainly biomass and biogas plants and hydro) have been granted €6.3 billion, while interconnectors and demand-response systems were paid €4.4 billion and €2.2 billion, respectively. Finally, €1.7 billion has been channeled to production plants using unknown or unspecified fuel/technology.

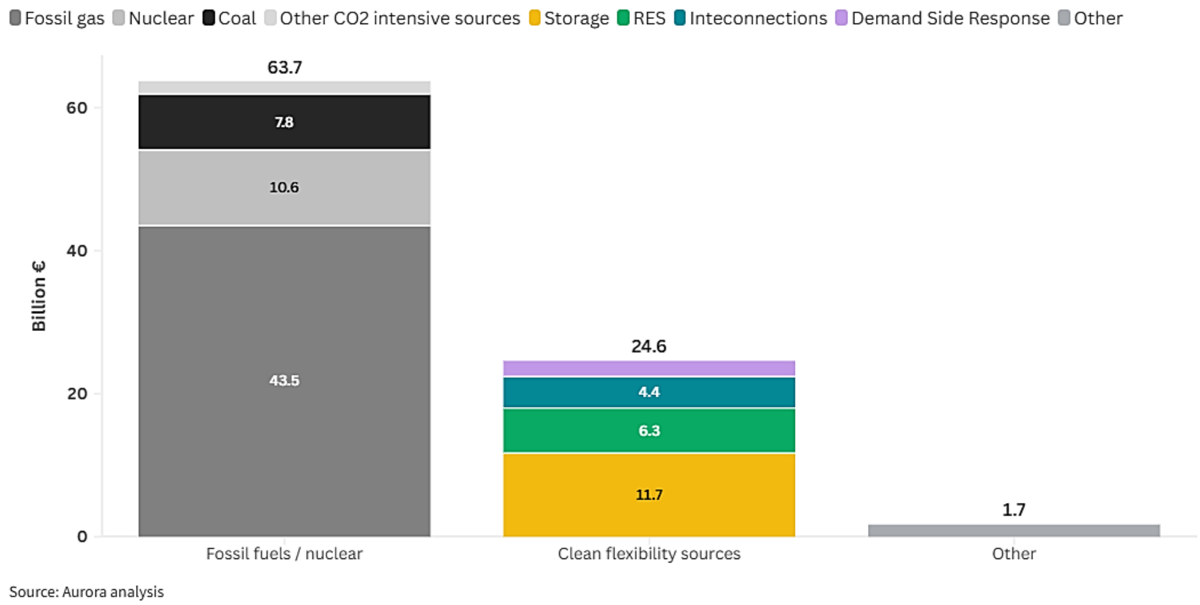

***Figure 3**: Cost of contracts under Europe's existing Capacity Remuneration Mechanisms (CRMs) by technology over the period 2015-2024.*

The UK shifts towards storage and demand-response solutions

The first country to introduce a capacity remuneration mechanism was the UK in 2014. In the 11 years since, auction clearing prices have increased significantly, from £19.4/kW in 2014[26] to £60/kW in 2025[27]. It is worth noting that, as of the first auction, a number of technologies have participated, as, for instance, fossil fuel plants, nuclear plants and clean flexibility solutions (storage; hydro; demand-response). The lion's share of the UK's CRM contracts indisputably corresponds to gas, with 68% of total payments over the period 2015-2024[25] remunerating a large part of the existing gas plant capacity (36.6 GW)[28].

[26] NESO. 02.01.2015. T-4 Capacity Market Auction. https://bit.ly/4jLTNUk
[27] NESO. 21.03.2025. Final Auction Report, 2024 Four Year Ahead Capacity Auction (T-4), Delivery Year 2028/29. https://bit.ly/4jQkQO5
[28] Global Energy Monitor. 2025. https://bit.ly/3FKfFS5

Nevertheless, the evolution of auctions in recent years reveals a gradual shift towards clean flexibility options. In particular, the capacity procured by new battery systems in the 2025 T-4 auctions -namely, for delivery in 2028-29- reached 1.8 GW; this figure represents 84% of the capacity procured by new plants through contracts in this auction[27]. Moreover, compared to last year's corresponding auctions, where new battery storage systems secured contracts of approximately 1 GW for delivery in 2027-28[29], the support for this technology has increased by nearly 80%. A similar trend is observed in demand-response systems; compared to the 2024 auction, capacity contracts in the 2025 auction increased by 0.7 GW to reach 1.8 GW. In addition, in neither auction were new gas plants awarded contracts, while the capacity procured by existing gas plants (both combined- and open-cycle) dropped from 28.7 GW in 2024 to 27.3 GW in 2025. It is worth noting that this small reduction in gas plant support and the shift towards clean flexibility solutions (storage and demand-response) went hand in hand with a downturn in auction clearing prices, from £65/kW in 2024 to £60/kW in 2025.

Similar trends were also observed in the shorter-term (T-1) and lower-capacity auctions. Specifically, support for existing gas plants decreased from 2.94 GW in 2024[30] to 2.37 GW in 2025[31]; battery contracts increased by 71 MW in one year, to reach 726 MW in 2025, while the capacity procured by demand-response systems slightly decreased (47.3 MW), from 710 MW in 2024 to 662.7 MW in 2025. The aforementioned combination again led to a clearing price reduction, from £35.8/kW in 2024 to £20/kW in 2025.

Poland shifts from lignite to batteries

The shift towards clean flexibility noted in Poland -even more pronounced than in the UK- is of particular interest. Poland's electricity production mix has the second highest carbon intensity in Europe (614 g CO_2/kWh in 2023[32]), mainly due to the sector's lignite and coal dependence, which remains at the highest levels in Europe. Nonetheless, it seems that EU policies aimed at decarbonizing electricity production have started bearing fruit. Thus, even though Poland retains the largest share of remuneration paid to solid fossil fuel plants (€6 billion out of the Polish CRM's total of €18 billion over the period 2016-2024), it also records the largest share of payments to storage plants in Europe (€4 billion or 23% of the total €18 billion)[25]. This result is mainly due to the latest auctions, where the largest share of the auctioned capacity was procured by battery systems[33].

Specifically, in the last auction (2024), 2.5 GW of the total 12 GW of capacity contracts for delivery in 2029 were awarded to battery systems. The auction cleared at lower-than-expected price levels (PLN 264.90 or $65/kW) due to both the increased participation of batteries and the strong presence of demand-response systems (1.5 GW) and cross-border

[29] NESO. 27.02.2024. Final Auction Report, 2023 Four Year Ahead Capacity Auction (T-4), Delivery Year 2027/28. https://bit.ly/43TJxmY
[30] NESO. 20.02.2024. Final Auction Report, 2023 One Year Ahead Capacity Auction (T-1), Delivery Year 2024/25. https://bit.ly/4l15asr
[31] NESO. 17.03.2025. Final Auction Report, 2024 One Year Ahead Capacity Auction (T-1), Delivery Year 2025 /26 https://bit.ly/3HTJnEH
[32] European Environment Agency (EEA), 2025. Greenhouse gas emission intensity of electricity generation. https://bit.ly/43Ep1ba
[33] PSE. 12.24.2029. Main auction for delivery year 2029. https://bit.ly/43ZnKKH

units (1.5 GW). As a result, according to estimates[34], approximately 1.7 GW of fossil gas-fired combined-cycle plants failed to secure contracts due to higher costs and lower competitiveness. It is worth noting that the capacity contracts awarded to batteries in 2024 for delivery in 2029 (2.5 GW) far exceed the respective figures of both 2023 (1.7 GW) and 2022 (merely 165 MW)[35]. These developments reveal the potential for an even higher penetration of batteries in Poland's electricity production, as these systems can now successfully compete against traditional thermal plants in CRM auctions.

Battery systems challenge gas plants' dominance in Italy

Italy hosts the largest fleet of gas plants in Europe (48.8 GW)[28] At the same time, since it began operating in 2019 and until 2024, its CRM has directed 82% of payments to gas plants; this represents the largest such share in Europe. Nonetheless, similarly to the UK and Poland, in Italy too, the predominance of gas-fueled plants is being challenged. Specifically, the auction of 2025 for delivery in 2027 marked the first time that battery systems rivaled existing gas plants. Contracts secured by batteries amounted to an estimated total of 900 MW; in particular, 95% (564 MW of 594 MW) of the capacity contracted to new providers in that auction was awarded to this technology[36]. Considering that capacity contracts secured by new battery systems in the previous auction (2024 for delivery in 2026) amounted to merely 84 MW[37], support for this technology has markedly grown.

Finland, Germany, and Sweden employ strategic reserves as cost-effective solutions

The clean flexibility sources that are currently being developed across Europe will eventually guarantee capacity adequacy; until then, support to fossil fuel plants can be provided through strategic reserve schemes, in line with the spirit of European legislation.

As ACER points out, SRs cost significantly less than other CRM schemes and do not produce additional distortions in the wholesale market. The cost of financing the different support schemes per unit of electricity demand (2020-2024) is indicated by ACER in Figure 4[38], clearly illustrating the cost difference between the two CRM categories (Strategic Reserves vs Capacity Market). In the case of countries with strategic reserves (Finland, Germany, and Sweden), the additional electricity cost due to the mechanism amounts to 0.06% of the annual average daily price in the day-ahead market, compared to 1.3%-4.4% incurred in countries operating CMs (Ireland, Poland, France, and Italy), denoting a 21- to 65-fold difference.

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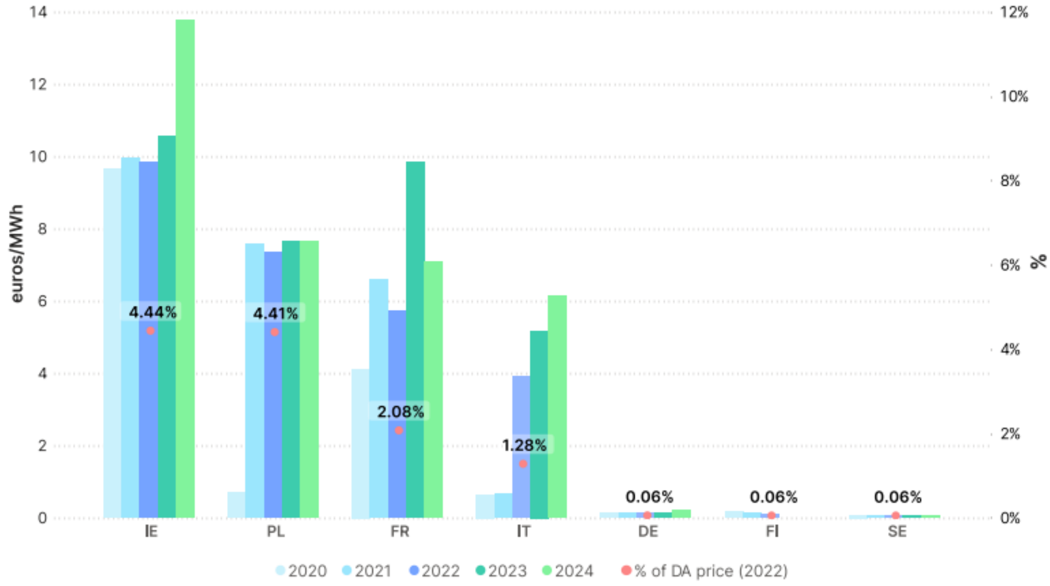
[34] PV magazine. 18.12.2024. "Polish capacity market auction for 2029 catalyzes gigawatts of battery storage projects". https://bit.ly/3HEogWR

[35] Energy Storage News. 18.12.2024. "BESS wins big in Poland's capacity market auction for 2029". https://bit.ly/43UKVps

[36] PV magazine. 28.02.2025. Terna allocates 43 GW in Italian capacity market auction for 2027. https://bit.ly/4kLrNl8

[37] Strategic Energy Europe. 16.02.2025. Terna publishes the results of the 2026 Capacity Market Auction with 38.4 GW allocated. https://bit.ly/4kNftAU

[38] ACER. 10.2023. Security of EU Supply. https://bit.ly/4mXjd3Y



Source: ACER calculations based on NRA, ENTSO-E and EUROSTAT data.

***Figure 4**: Costs incurred or projected to be incurred in 7 Member States to finance capacity remuneration mechanisms per unit of demand (€/MWh) over 2020-2024, as a percentage of the annual average daily price in the day-ahead market.*

Recommendations for Greece

Greece has been successfully phasing out lignite in the electricity production sector; nonetheless, continued progress should not be taken for granted. Given the considerable resources that have been dedicated to subsidizing fossil fuels to date, it is imperative that policies and mechanisms adopted henceforth not undermine the energy transition. Therefore, any planning regarding the introduction of a CRM must be fully documented and the mechanism's necessity must be corroborated by data; furthermore, a potential CRM should be compatible with NECP targets and bear the lowest possible cost to both consumers and the national economy.

A resource adequacy assessment is required: In principle, CRMs should only be introduced -as a last resort- when removing regulatory distortions probably fails to resolve capacity adequacy issues. The necessity -or lack thereof- of a CRM may only be established through a capacity adequacy assessment[39]. Moreover, as also mentioned in the NECP, carrying out such a study decisively contributes to the strategic planning of energy policy by preventing over-investment, which would burden consumers and damage the competitiveness of the national economy.

Strategic reserves can serve as a solution: following the completion of the resource adequacy study and the removal of possible distortions, if a need for CRM is identified, the first option should be a strategic reserve scheme. SR mechanisms cost less and do not affect market prices.

[39] Unlike the European Resource Adequacy Assessment, which is carried out on an annual basis by Entso-e, the preparation of a national resource adequacy assessment -albeit recommended- is not required in the absence of CRM planning.

The preliminary findings of Greece's resource adequacy assessment -certain qualitative results of which were presented at the Power & Gas Forum[40]- identified an economic viability issue, particularly with regard to older fossil gas plants. In this context, a few of the latter could be included in a strategic reserve scheme, to allow their contribution in peak periods or emergency conditions. The demand during such circumstances could be significantly reduced if the strategic reserve scheme is accompanied by progress in the installation of clean flexibility solutions, such as energy storage.

Priority should be given to clean flexibility: If it is verified that strategic reserves do not constitute an adequate solution, then the design of a capacity-market CRM may be considered. In this case, it is imperative that clean flexibility solutions be prioritized, as recent European experience (Poland, UK, and Italy) indicates that these technologies drive down auction prices. Furthermore, even though CRMs primarily aim at ensuring supply security rather than promoting decarbonization, they should nonetheless be fully compatible with climate targets, as explicitly provided for in the relevant European legislation[41]. These targets can be met more effectively through the use of clean and flexible energy options rather than fossil fuel plants. Therefore, minimizing fossil fuel participation in any new remuneration mechanism and promoting the integration of non-fossil flexibility in all sectors -including industry- is vital, as is adopting an integrated and holistic approach to the design of a potential CRM.

Double subsidies should be avoided: Regardless of the technologies participating in a CRM, double subsidies should be avoided; for instance, a capacity subsidy awarded via a capacity-market mechanism that includes fossil fuel plants should not coincide with a subsidy for a distinct CRM that is designed exclusively for non-fossil fuel flexibility services. Indeed, as ACER notes[42], the combination of CRMs and flexibility mechanisms requires careful design so as to ensure consistency with the wholesale market and prevent oversupply, distortions, and increased costs for consumers.

Transparency and open consultation are vital: Transparency is essential at all stages of planning and implementation. As of 1 July 2023, state aid rules provide for a consultation period of at least four weeks on any new mechanism. In addition, past experience has shown[43] that the entire approval process can last up to two years, thus, rendering adequate preparation, transparency, and alignment with European requirements all the more important.

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[40] Power & Gas Forum. 28.04.2025. https://bit.ly/4l2PQeR
[41] Article 19 e, par. 4 of EU Regulation 2024/1747.
[42] ACER. 16.12.2024. Security of EU electricity supply – 2024 Monitoring Report https://bit.ly/43ZIxh4
[43] European Commission. 03.03.2025. REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on the assessment of possibilities of streamlining and simplifying the process of applying a capacity mechanism under Chapter IV of Regulation (EU) 2019/943, in accordance with Article 69(3) of Regulation (EU) 2019/943. p.9, http://bit.ly/4jNaT4c