Contribution to consultation
on the proposal of the Ministry of Energy and Environment for the submission of the final notification to DG Competition for the establishment of a Long-Term Capacity Remuneration Mechanism in the Greek electricity market

10 May 2019

Overview
Capacity mechanisms are a fundamentally flawed scheme, especially as they are currently employed. While their stated aim is to secure electricity supply adequacy, in reality they finance fossil fuel (coal, oil and gas) power plants and fail to address the climate crisis and the decarbonisation objectives for Europe’s energy system.

The proposed capacity mechanism opens the door to state support which is inconsistent with EU climate and energy objectives, as well as internationally agreed climate mitigation obligations.

As EU competition commissioner Margrethe Vestager stated in 2016: "Capacity mechanisms need to match a problem in the market and be open to all technologies and to operators from other EU countries. They must not be backdoor subsidies for a specific technology, such as fossil fuels, or come at too high a price for electricity consumers."1

Capacity mechanisms are by definition not supposed to be a permanent state support scheme, but rather a temporary one, which cannot be approved for longer than 10 years. The Greek capacity mechanism (CM) makes a desperate run against time, in order to pre-empt the entry into force of the new regulation on the internal market for electricity.2

Given the critical impact of capacity mechanisms to the decarbonization of European economies, the consultation called by the Ministry of Environment and Energy on April 23, ending on May 10th, is of inexcusably short duration (less than a month).3

The potential for the capacity mechanism to prolong Greece’s dependence on fossil fuels is our biggest concern. This is through a potential contract for the 660 MW lignite unit Ptolemaida V, currently under construction, refurbishment contracts to extend the life of old lignite plants, and annual contracts to subsidise all fossil fuel power plants year-by-year. These contracts would slow down Greece’s vital transition to a 100% clean electricity system.

The Greek offices of WWF and Greenpeace raise a number of serious concerns in the context of the brief consultation on the Greek long-term capacity mechanism.

1. Vagueness

The Greek CM under consultation is based on vague terms, as critical definitions are missing. For example, “new entry” is not defined: therefore, it is unclear whether the 31 December 2019 deadline for commencement of commercial production will apply to Ptolemaida V, the new lignite-fired power plant under construction.

Furthermore, it does not specify which adequacy concerns it addresses, as it does not appear to be based on a thorough adequacy assessment.4

2. Indefinite duration

Capacity mechanisms are defined as “a temporary measure to ensure the achievement of the necessary level of resource adequacy by remunerating resources for their availability…”. As the full implementation phase of the CM under consultation spans through 2033, it is obvious that this can in no way be regarded as a temporary but rather as a permanent state support scheme to fossil fuels.

3. No emission limits

The agreed text of the European Parliament’s legislative resolution of 26 March introduces an emission performance standard of 550 grams of CO$_2$/kWh. According to this text, from 1 January 2020, new power plants will only be able to receive capacity payments if they meet this standard. This standard would exclude from capacity payments the high-emitting new lignite-fired power plant Ptolemaida V. From July 1st, 2025, this standard will also apply to existing power plants if their average annual CO$_2$ emissions per installed kW exceed 350 kg/year on average. Member States will have to adapt existing capacity mechanisms, without prejudice to contracts concluded before 31 December 2019.

As the new emission limit of 550 g of CO$_2$ of fossil fuel origin per kWh will most probably apply from 1 January 2020, it would be appropriate for the Commission to put on hold the approval of all CM payments planned after that date. In addition, it is obvious that the standard introduced by the agreed text should be used immediately in order to assess the appropriateness of the proposed CM (see below, point 4).

Strict CO$_2$ emissions limits for coal plants have been on the table long before the recast regulation for the internal energy market was voted at the European Parliament. Already back in 2013,5 the European Investment Bank applied the rule of <550g CO$_2$/kWh to the financing of fossil fuel plants.

4. Insufficient consideration of appropriateness “among different aid measures”.

The Guidelines on State aid for environmental protection and energy (EEAG) 2014-2020 require a showing of appropriateness among alternative policy instruments, where state aid is balanced with regulation, eco-labeling, new technology diffusion, and so forth: in fact, as the guidelines highlight, “different measures to remedy different market failures may also counteract each other. A measure addressing a generation adequacy problem needs to be balanced with the environmental objective of phasing out environmentally or economically harmful subsidies, including for fossil fuels. Similarly, a measure to reduce greenhouse gas emissions can increase the supply of variable power which might

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4 Greece’s obligation to base the “new flexibility mechanism” on a “thorough adequacy assessment including a reliability standard” is listed as a prior action in the Fourth Review of the ESM Programme of 20 June 2018. The capacity adequacy study issued by the system operator (ADMIE) in 2017 spans until 2027, whereas the CM is of indefinite duration and extends to at least 2033.

negatively affect generation adequacy concerns." The text of the public consultation does not contain any evidence of such balancing, nor any comparison or consideration of alternative policy measures.

5. Non implementation of the Target Model

As the text under consultation confirms, the implementation of the Target Model is not complete yet. It is yet unclear whether the commitment to couple the Greek with the Bulgarian and Italian electricity markets by 2019 will be met. In every case, the delay undermines the credibility of the proposed aid scheme, because it prevents the development of balancing markets (an essential element of the target model) and the harmonization of the network codes and guidelines. In view of the delay, everything mentioned about interconnections in the present text is doubtful.

6. Inadequate consideration of alternative ways of achieving adequacy

EEAG guidelines state unambiguously that "aid for generation adequacy may contradict the objective of phasing out environmentally harmful subsidies including for fossil fuels. Member States should therefore primarily consider alternative ways of achieving generation adequacy which do not have a negative impact on the objective of phasing out environmentally or economically harmful subsidies, such as facilitating demand side management and increasing interconnection capacity". In addition, and in order to demonstrate the state intervention need, the aid scheme must take into account "ongoing market and technology developments", including storage.

In order to demonstrate the appropriateness of the aid scheme, proponents must show that the measure provides "adequate incentives to both existing and future generators and to operators using substitutable technologies, such as demand-side response or storage solutions".

Finally, in order to avoid undue negative effects on competition and trade, aid proponents must "make possible for any capacity which can effectively contribute to addressing the generation adequacy problem to participate", including "operators offering measures with equivalent technical performance, for example, demand side management, interconnectors and storage...".

As the recent Tempus Energy vs European Commission judgement of the EU General Court has clarified, the Commission could not be satisfied merely by the ‘openness’ of the measure, but must also examine in greater detail "the reality and the effectiveness of the appreciation" of the above technical solutions in the capacity market. In fact, the Commission must take into account, on the basis of member state submissions, an assessment of the impact of variable generation, demand-side participation, including a description of measures to encourage demand side management, and the actual or potential existence of interconnectors, including a description of projects under construction and planned. It is against those principles that the proposed aid scheme must be weighed.

In this respect, we note the following:

- **Storage.** The status of storage is unclear in the published text. On the one hand, storage is not an eligible resource; on the other, participation of storage in the capacity auctions is "voluntary";

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8 Ibid., §3.9.1., point (220).
9 Ibid., §3.9.2., point (223).
10 Ibid., §3.9.3, point (226).
11 Ibid., §3.9.6., point (232)(a).
elsewhere, storage is mentioned as part of demand response or RES. Therefore, it cannot be maintained that storage contribution has been made possible or that storage-related market and technology developments have been taken into account.

- **Demand response.** EEAG guidelines make clear that the measure must take into account operators offering demand side management, and “should be open to potential aggregation of both demand and supply”. Instead, currently, there is no legal framework for demand response aggregators. In addition, “the parameters regarding the product design for the demand response will be examined and finalized in the balancing market design after the required public consultation”. In fact, RAE (the Greek energy regulator) confirmed (in the context of the 2017 public consultation on the TFRM), that demand response is technically possible at least for certain consumers, but it should not be currently implemented, as it not possible for those consumers to respond to “continuous TSO requests”.

The above *prima facie* views do not meet the requirements of points (226) and (232) of EEAG guidelines. The measure is neither open nor makes possible the participation or provides adequate incentives to demand-side response. At a minimum, the measure should have included a proper “assessment of the impact of demand-side participation, including a description of measures to encourage demand side management”, as point (224) of EEAG explicitly requires.

- **Interconnectors.** In 2016, the decision not to raise objections to the Transitory Electricity flexibility remuneration mechanism (FRM) noted that “the Hellenic Republic plans to increase interconnection capacity and implement market coupling”. In 2018, the European Commission’s decision not to raise objections to the transitory electricity flexibility remuneration mechanism (TFRM) mentions that “the participation of foreign generators would require a fully coordinated unit commitment on a broad area that relies on strong inter-TSO co-ordination, operation market coupling and flow-based allocation of sufficiently sized interconnectors. These conditions are not fulfilled at present. However, it should be pointed out that Greece commits to the full implementation of market coupling in the context of the national Target Model…”.

Now, in the context of the explicit participation of interconnections, the text under consultation states that “the Hellenic Republic in order to achieve full compliance with par. 232 of the EEAG, is exploring the options for the participation of foreign capacity providers in the long-term mechanism, both in the context of market coupling, and also in the Capacity Mechanism auctions. Direct participation of cross-border capacity providers, on equal terms with the domestic ones, is considered the most promising option when neighboring markets become coupled and requires a very good level of inter-TSO coordination…”.

Therefore, as these recurrent justifications suggest, no progress has been registered on that issue for more than three years. Pending further clarifications, it must be concluded that no assessment of the actual or potential existence of interconnectors has been made, “including a description of projects under construction and planned”, and therefore the requirements of paragraph (224) (c) of EEAG have not been met.

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14 Cf. Public consultation of the proposal of the Ministry of Energy and Environment for the submission of the final notification to DG Competition for the establishment of a Long-Term Capacity Remuneration Mechanism in the Greek electricity market, esp. p. 10 and 23.
15 Ibid., point (232)(a).
16 Ibid., p. 12.
17 RAE. (6.9.2017). Δημόσια Διαβούλευση για τις βασικές αρχές σχεδιασμού του Μεταβατικού Μηχανισμού Αποζημίωσης Ευέλικτης Ισχύος (ΜΜΑΕΙ) στο Διασυνδεδεμένο Ηλεκτρικό Σύστημα της χώρας μας στη βάση της «Μελέτη Αναγκών Ευελιξίας του Συστήματος για την περίοδο 2018-2027» του Διαχειριστή [Public Consultation on Basic Principles of the Transitional Electricity Flexibility Remuneration Mechanism].
20 Ibid., p. 13.
7. Flawed assessment of capacity needs

Capacity mechanisms aim to guarantee the security of supply by addressing current and future capacity gaps of electricity supply. As such, their design and scope is crucially dependent on estimations of current and future capacity needs (or gaps). At a macro EU level, there is evidence that member-states tend to systematically overestimate capacity needs, consequently using these mechanisms to subsidize conventional carbon-intensive power generation plants despite overcapacity at an EU-wide level.\textsuperscript{21}

The Greek government’s proposal for a market-wide capacity mechanism does not explicitly mention future capacity needs and simply states that “the TSO will set the LOLE target to be met for each auction”; however the quantity of capacity needed to meet the LOLE target still relies on a 2017 ADMIE study,\textsuperscript{22} whose methodology has been criticized by a Joint Research Centre report.\textsuperscript{23}

Given methodological pitfalls (and a number of debatable assumptions) in the original ADMIE study, it is important (for the purpose of public transparency) to submit any revised assessment and methodology to public consultation, for technical scrutiny.

- The methodology used in the 2017 ADMIE study is extremely conservative regarding the availability of interconnectors and their contribution to electricity adequacy. This means that it overstates future capacity problems, consequently magnifying the amount of further capacity needed to 2027. The 2017 JRC report notably recommended that ADMIE “conducts a more detailed evaluation of the interconnectors’ contribution based on ENTSO-E’s MAF 2016 method. This could be used as a basis for a much more realistic (and less conservative) modelling of the available contribution of interconnectors to adequacy”.\textsuperscript{24}

- The methodology equally ignores demand-side responses (DSR) and Demand Side Management (DSM) when evaluating the future adequacy of the system. This clearly biases policy responses towards supply-based measures (and notably lignite and gas-based electricity supply). The 2017 JRC report states that: “It is recommended that the potential benefits of DSM/DSR to the adequacy of the system are investigated” in Greece’s adequacy assessment”.\textsuperscript{25}

- The ADMIE study provides a range a different estimations based on future scenarios and planned investments (e.g. scenarios with and without interconnections). Each scenario yields sensibly different results regarding future capacity needs. However, the Greek government’s proposal for a market-wide capacity mechanism does not state which of these estimations will be taken into account for estimating the LOLE target.

- Assumptions of future energy efficiency (which determines future energy demand) are not transparent, and it is unclear whether these are consistent with energy efficiency targets set by the European Commission to 2050.

To conclude, because the Greek government’s proposal for a market-wide capacity mechanism entails long-term (10 year) incentives for new plants (presumably including new lignite plants) it is essential to determine ex ante whether and to what extent there is such a capacity need in the first place, through the use of a robust methodology that accounts for technological developments (e.g. storage technologies), demand-side responses, and interconnection potential. Failing to do so could a) lock Greece into long-term dependence on new (or existing) lignite plants, without an obvious adequacy.

\textsuperscript{22} ADMIE. (2017, May). Μελέτη Επάρκειας Ισχύος για την περίοδο 2017-2027 [in Greek].
\textsuperscript{24} Antonopoulos et al, Op. Cit.
\textsuperscript{25} Antonopoulos et al, Op. Cit.
need; and b) contribute to EU-wide overcapacity, instead of reaping the benefits of interconnections and avoiding new investments in conventional carbon intensive generation plants.

8. Lack of transparency

Contrary to the specifications of the Guidelines on State aid for environmental protection and energy (EEAG) 2014-2020, the proposed aid scheme does not contain any transparency requirements. Currently, information about previous similar schemes is sparse and difficult to locate: the Greek TSO (ADMIE, ΑΔΜΗΕ) maintains a webpage with the results of interruptible load service auctions,\(^{26}\) while the energy regulator (RAE, ΡΑΕ) has published in the past a few details about the 2015 Transitory Electricity Flexibility Remuneration Mechanism (FRM). A number of opaque provisions – e.g., concerning the determination of the strike price, the de-rating criteria, the notification period and the pre-qualification requirements– can be identified in the proposed CM. In this respect, it is worth highlighting that, according to EEAG, ”the public must have “easy access to all relevant acts and to pertinent information about the aid awarded thereunder”.”\(^{27}\)

9. Fossil fuel subsidies that fuel the climate crisis

A 2018 report by Greenpeace showed that in the EU “governments are already covertly adding almost €58 billion to energy bills to fund capacity mechanisms. Of these subsidies, 98% go to fossil fuels and nuclear energy.”\(^{28}\)

The track record of the Greek capacity remuneration schemes to date is CO\(_2\) intensive. In total, from 2006 to 2014, state aid through the Greek capacity remuneration schemes has been at least 3.8 billion EUR, 2.9 of which supported the operation of fossil fuel units.\(^{29}\) This translates to 1.4 billion EUR for lignite plants, 1.35 billion EUR for natural gas and almost 180,000 EUR for oil powered units.

Additional fossil fuel subsidies also exist in the form, for example, of the public service obligations (ΥΚΩ), which constitute a levy imposed on consumer electricity bills, in support of the electrification (through diesel-fired power stations) of the non-interconnected islands. It has been estimated that within a decade, Greek consumers have paid 5.7 billion EUR in support of power generation from oil units.\(^{30}\) Another type of indirect state support to lignite is the cost of relocation of villages threatened by coal mining, which on many occasions is charged to the state budget.

Given the clearly advantageous position of electricity generation from fossil fuels in Greece, it is rather ironic that the proposed CM excludes capacity providers from renewable energy sources already receiving support through, for example, feed-in-premium contracts.\(^{31}\)

RES providers are especially undermined in the context of this CM. As the majority receive support through feed-in premium contracts, they are excluded and also face the risk of negative returns. For example, in case the reference price (RP) is lower than the average wholesale price, the premium will be negative, i.e. the RES project will have to return at the end of the month the excess income received from the wholesale market to the RES account. Indeed the RPs in the last RES auctions were well below the average wholesale price for the same time period. As the electricity market price in Greece

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\(^{28}\) Ibid, p. 21.

\(^{29}\) In Greece the RES support mechanism for new projects is a Feed in Premium contract for difference cleared on a monthly basis, where the Reference Price (RP) is determined with auctions.
is heavily dependent on the price of CO\textsubscript{2}, its level increased dramatically in 2018 and is not expected to decrease significantly in the future.

10. “Extended contract duration” of installations “under major refurbishment”

In accordance with the proposed aid scheme, “existing capacity may receive, upon request, extended duration in case the installation is under major refurbishment. The duration of the extension will be based on the CAPEX requirements of the investment. Major refurbishment will involve either an environmental upgrade or a refurbishment necessary for the technical availability…”.

Pending further clarifications or reservations, the proposed rule, as stated, violates the appropriateness and the incentive effect requirements of the EEAG guidelines. Indeed, EEAG guidelines note that “state aid is not an appropriate instrument and cannot be granted insofar as the beneficiary of the aid could be held liable for the pollution under existing Union or national law” and that “the aid must not subsidize the costs of an activity that an undertaking would anyhow incur”. In this respect, and following the recent establishment of best available techniques (BAT) conclusions for large combustion plants, it should be noted that the reconsideration of permit conditions for outdated Greek thermal plants that fall under Annex I (point 1.1) of Directive 2010/75[16] will generally entail a “major refurbishment” in the sense of the proposed aid scheme: therefore, the proposed rule seems to guarantee contract extension for those plants.

11. Air pollution concerns

Greek lignite is notoriously polluting, while also of low thermal quality. Except for SES Meliti I, no other Greek lignite plant is compatible with the new Best Reference Document for Large Combustion Plants (LCP BREF). That’s even for the upper LCP BREF limit; no plants come close to the lower limits. The new lignite giant SES Ptolemaida V, currently under construction, will also be a high emitter: NO\textsubscript{2} \leq 200mg/Nm\textsuperscript{3}, particulates \leq 10mg/Nm\textsuperscript{3}, and SO\textsubscript{2} \leq 150mg/Nm\textsuperscript{3}.

The absence of any assessment of the environmental impact of the proposed mechanism, which essentially aims at granting support to and prolonging the life of heavily polluting fossil fuel power plants, is at odds with the EU’s Clean Air Policy Package.

12. Soft penalties

The proposed penalties are rather lenient, and cannot be deemed as dissuasive or appropriate to the severity of the environmental damage or the market distortion caused by either the exceedance of emissions limits or the non-provision of information. Suspension of “payment of the capacity premium for the period” in cases of failure to deliver contracted capacity for a predefined period is awfully insufficient, as it does not at all incentivize capacity providers to be available during peak periods.

Bankrolling fossil fuel electricity units accelerates the climate crisis, pollutes nature, and puts at serious health risk thousands of people. Big coal, oil and gas are cashing in on subsidies that distort the dismal reality for fossil fuel assets. Extending the lifeline of coal units also slows down the transition towards 100% renewable energy, which is crucial to avert the climate chaos the world is already experiencing. Greece must end this dirty practice. Especially with regard to lignite, it is high time PPC shifts its business model away from high carbon electricity generation and retakes the lead in clean energy

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innovation, which it seems to have forgotten since 1982, when it opened Europe's first wind park on
the island of Kythnos.

13. Distorting the “polluter pays” principle

There is a question mark on whether the methodology outlined to calculate the “strike” price will place
the burden of carbon emission costs on taxpayers and consumers. Indeed, according to the
consultation document the strike price will be determined “by taking into account the reference thermal
efficiency for the hypothetical low efficiency peaking unit, the gas reference price, the oil reference
price, the carbon reference price and the carbon intensity of a reference gas fired plant”. In other
terms, this mechanism will allow producers to shift the entire burden of carbon emission costs onto
the purchaser (the TSO) which, in turn, will either internalize this cost (ultimately borne by taxpayers)
or shift it onto consumer prices. Allowing the polluter to fully shift the costs of carbon emissions
downstream would clearly distort the polluter pays principle.

14. Risks of market distortion

The possible participation of new lignite plants in the capacity mechanism could stifle the participation
of other energy sources and new storage technologies into the scheme. To provide one example, if
the planned Ptolemaida V (a 660 MW lignite plant) participates in the proposed scheme, it could bid
up to 65,000 EUR per MW per annum for a 10 year period. The PPC or a future private provider could,
in short, obtain a total subsidy of up to 429 million EUR over 10 years, or 42.9 million EUR per annum.
Such subsidy would cover up to 31% of the CAPEX for the construction of the plant. According to the
European Commission, Greece’s transitory capacity mechanism budget cap was of 175.5 million EUR
for 2018.35 Assuming a budget cap of similar magnitude over the coming years, a hypothetical
participation of Ptolemaida V in the scheme could consume up to 24% of the mechanism’s annual
budget, significantly constraining the mechanism’s financing possibilities for alternative energy
sources, storage technologies, and demand-based mechanisms, for a decade. Needless to say this
would restrict the entrance of new players and new technologies in the capacity market.

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