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PUBLIC VERSION

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Subject: State aid No. SA.44465 (2017/N) – United Kingdom – Northern Irish Capacity Mechanism

Sir,

1. PROCEDURE

(1) By electronic submission dated 5 February 2017, the United Kingdom notified to the Commission under Article 108(3) of the Treaty on the Functioning of the European Union ('TFEU') draft legislation aimed *inter alia* at the establishment of a new Capacity Remuneration Mechanism to be applied to the territory and electricity sector of Northern Ireland.

(2) On 16 January 2017, Ireland had notified to the Commission under Article 108(3) of the TFEU similar draft legislation aimed *inter alia* at the establishment and application of the same Capacity Remuneration Mechanism to the territory and electricity sector of Ireland.

(3) The present Decision is addressed to the United Kingdom, but assesses both coordinated measures together. Where the Decision mentions 'the authorities', it refers to both the authorities of Ireland and Northern Ireland.

(4) The Commission also received observations from several market participants regarding the proposed Capacity Remuneration Mechanism.

The Rt Hon Boris JOHNSON
Secretary of State for Foreign Affairs
Foreign and Commonwealth Office
King Charles Street
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2. DESCRIPTION OF THE MEASURE

2.1. Context and background

(5) The electricity market on the island of Ireland is operated and regulated jointly by the Transmission System Operators ('TSOs') and the regulatory authorities of the Republic of Ireland and Northern Ireland. The current arrangements, referred to as the Single Electricity Market ('SEM') and established in 2007, are undergoing significant change. The plans for the reformed market are set out, *inter alia*, by the Irish government in its 2015 Energy White Paper setting out its energy policy objectives.[1] The new Integrated Single Electricity Market ('I-SEM') that is at the centre of the reformed market is scheduled to enter into force in May 2018. It aims at facilitating greater market integration through the application of internal energy market rules in general, and specifically at being fully compliant with the network codes and guidelines developed under Regulation (EC) 714/2009[2]. Thus, the I-SEM is intended to more fully facilitate coupling between the all-island electricity market and the rest of Europe.

(6) The notified measure is part of the wider reforms planned in the context of I-SEM. The objective of the new wholesale market rules is to align the Irish market more closely with common European practice so as to manage the envisaged transition to a low-carbon energy sector in a more competitive market environment. An I-SEM High Level Design Process took place under the leadership of the Single Electricity Market Committee ('SEM Committee'). This SEM Committee was established in 2007 as decision-making body for all SEM-related matters following the introduction of the SEM. The SEM Committee consists of representatives of the three energy and utility regulators of the Republic of Ireland, Northern Ireland and Great Britain, along with an independent member and a deputy independent member.

(7) The authorities analysed the need for additional measures alongside the I-SEM in order for the reformed energy market to deliver a sufficient degree of security of supply and concluded that a capacity remuneration mechanism ('CRM') needs to be implemented alongside the I-SEM. The authorities see a need for a CRM from the increased risks to generation adequacy resulting from various market failures which, the authorities argue, are exacerbated in the context of a small island market with high and rising levels of intermittent renewable generation. The high level design of the CRM was developed in first instance by the SEM Committee, which published consultation papers and detailed design decisions over the course of 2015 – 2017.

(8) On this basis, the authorities have requested State aid to implement the CRM, alongside and as part of the I-SEM.

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[1] Ireland's Transition to a Low Carbon Energy Future 2015-2030, http://www.dccae.gov.ie/energy/SiteCollectionDocuments/Energy-Initiatives/Energy%20White%20Paper%20-%20Dec%202015.pdf.

[2] Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003, *OJ L 211, 14.8.2009, p. 15–35.*

(9) In view of the operation of the electricity system on the island of Ireland as a single market and in view of the fact that also the envisaged CRM will be operated as a single mechanism, the Commission assesses the two coordinated and consistent notifications together.

2.2. Description of the Capacity Mechanism

2.2.1. Market structure and reforms in the Irish all-island market

(10) The island of Ireland currently imports about 40 % of its gas consumption, 100 % of its oil consumption and is reliant on gas to generate approximately 40 % of its electricity production. In the future, renewables are expected to gain ground as the Republic of Ireland and Northern Ireland have set targets of 40 % penetration of renewables in their generation mix by 2020. This target will mainly be delivered by wind generation.

(11) Historically, the all-island market has suffered from low capacity margins during certain periods. For instance, in the period of 2003-2006, during which economic growth led to increased electricity demand, tenders[3] were organised to construct new generation capacity. Also in reaction to the reduced capacity margins, trading arrangements in the aforementioned SEM market were introduced, which meant that a centralised market was created, through which generators and suppliers were obliged to trade electricity. In the SEM, generators can only bid their short-run marginal costs into the market for each half hour of the following day. Based on demand, the market operator determines the marginal price for each half-hour trading period. Hence, in the SEM there is no possibility for the price to rise above the short-run marginal cost of the most expensive generator operating in the system. In order to allow generators to recover their fixed costs, the SEM also included a capacity payment.

(12) The authorities explain that the all-island market is relatively concentrated (see market shares of currently installed capacity in the table below) and is characterised by a Herfindahl-Hirschman Index ('HHI') of de-rated capacity of around 1,800. Market power concerns are therefore also pertinent in the proposed new CRM.

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[3] Approved by the Commission in case N475/2003, http://ec.europa.eu/competition/state_aid/cases/133645/133645_496906_27_2.pdf

	Name-plate MW	Estimated de-rated MW	De-rated market share	HHI Contribution (de-rated capacity)
ESB PG (Non Wind)	4,073	3,590	38%	1,451
SSE (Non Wind)	1,264	1,065	11%	128
AES	1,022	896	10%	90
Viridian Huntstown 1&2	736	648	7%	47
NIE PPB	587	517	5%	30
BG Energy	444	391	4%	17
Tynagh Energy	386	340	4%	13
BnM	234	212	2%	5
Aughinish	162	146	2%	2
Other dispatchable generators	185	163	2%	
Demand Side	235	235	2%	
Moyle Interconnector	450	338	4%	13
EWIC Interconnector	500	375	4%	16
Total wind	3,573	511	5%	
Total	13,851	9,425	100%	1,813

Figure 1 - Market shares of currently installed capacity in the Irish all-island market (2016)

(13) In order to increase the ability of the energy market to remunerate fixed costs while mitigating risks of exercise of market power, the authorities intend to implement various measures, both as part of the I-SEM electricity market and as part of the CRM. The main measures included in the I-SEM are the following:

a. obligation on dominant generators to offer directed contracts to mitigate market power in the spot market;

b. removal of most of the price caps and restrictions imposed on the offers made by generators. Implementation of a new price cap reflecting the value of lost load, which is currently approximately 11,000 EUR/MWh;

c. implementation of a new balancing market with no offer/bid caps on energy bids/offers (but with bidding controls), and an 'administrative scarcity pricing' function to ensure prices rise when electricity is scarce;

d. preservation of vertical ring-fencing of ESB's supply and generation functions.[4]

2.2.2. The need for a capacity mechanism in the future Irish all-island market

(14) The authorities have identified various characteristics that make the all-island market particularly prone to generation adequacy issues.

(15) In terms of structural market failures, the authorities argue that the market suffers from the ‘missing money’ problem, resulting from the inability of prices to reflect scarcity and the lack of certainty that prices will rise sufficiently. Moreover, they highlight the notion of reliability as a public good in electricity markets, implying that suboptimal levels of reliability will be delivered by the market due to the inability of consumers to express what they would have been willing to pay if they were individually disconnected on the basis of their individual value of lost

[4] ESB (Electricity Supply Board) is the state-owned incumbent electricity company in Ireland.

load[5]. The authorities argue that these two market failures affect the ability of capacity providers in the all-island market to generate sufficient revenues to recover their fixed and variable costs.

(16) In terms of particular characteristics affecting security of supply on the island of Ireland, the authorities explained that the high and rising levels of intermittent renewable generation combined with the limited potential for demand response as well as the relatively limited interconnection (two high-voltage direct current ('HVDC') lines with Great Britain), mean there is a great need for flexible generation that can respond when renewables are not available – for example gas-fired power plants. Since the Irish all-island market is small, a new power plant of minimum efficient scale will be a relatively large investment in relation to the market, and a single new generating unit may have a significant impact by reducing the level and frequency of scarcity prices. Therefore, when any investor responds to scarcity signals, it has to take into account its own impact on the market, which may reduce the incentives to invest. The operator needs to be certain it can recover its costs through a sufficiently high number of running hours or a small number of hours in which prices will be high. If the size of the investment is large relative to the market, this may make it more difficult for an investor to achieve that certainty.

(17) To quantify their concerns about the generation adequacy of the all-island market, in 2014 the authorities tasked EirGrid and SONI, the TSOs of Ireland and Northern Ireland respectively, to carry out an adequacy assessment in the absence of a capacity mechanism. The TSOs carried out and published annual Generation Capacity Statements projecting capacity margins for the ten following years. These statements assumed the continued existence of the SEM market and its capacity payment scheme.

(18) This adequacy assessment published in 2014[6], assessed the adequacy situation for the years 2017, 2020 and 2023, using data from the All-Island Generation Capacity Statement 2014-2023. The methodology applied revolved around the central question whether or not a sufficient number of capacity providers will be able to recover their annualised costs through energy-only market revenues in a number of potential scenarios containing assumptions on the development of demand and supply, interconnection availability and demand side participation. The assessment concluded that in two of the three years under assessment, namely in 2020 and 2023, a reliability standard of 8 hours loss of load expectation ('LOLE') would not be met.[7] In 2016, a follow-up study was carried out assessing

5 For a more detailed explanation of the public good nature of electricity security of supply see: Sector Inquiry into Capacity Mechanisms: Staff Working Document accompanying the Final Report of the Sector Inquiry on Capacity Mechanisms, {COM(2016) 752 final} http://ec.europa.eu/competition/sectors/energy/capacity_mechanism_swd_en.pdf, see in particular Section 2.2.2 Market and regulatory failures undermining incentives to invest.

6 https://www.semcommittee.com/sites/semcommittee.com/files/media-files/SEM-14-048%20Assessment%20of%20Generation%20Adequacy%20SEMC%20Submission.pdf.

7 Note that currently the generation adequacy standard is 8 hours LOLE/year in Ireland and 4.9 hours LOLE/year in Northern Ireland. The all-island standard used in the existing Capacity Payment and Capacity Statement is 8 hours LOLE/year, which according to the authorities is consistent with the Value Of Lost Load ('VOLL') for the island.

all years between 2017 and 2025, whereby the methodology was expanded so that income from ancillary services could be taken into account as well.

(19) The first step of the 2016 assessment is a market simulation determining the expected dispatch volumes per capacity provider, which is then divided into their individual, annualised cost so that a 'required average price' can be determined. It is assumed that generators can earn up to 3,000 EUR /MWh on the wholesale market. Generators with no running hours, or with low running hours that require revenue of more than 3,000 EUR /MWh on average, are assumed to leave the market and be removed from the generation portfolio. Subsequently, the study assesses the level of security of supply that results from the residual generation capacity, for each of the three years under assessment and for a range of scenarios. It compares a generation portfolio, in which each unit has a forced outage probability, against an input demand curve and calculates the probability of demand not being met in each hour of the year under assessment. The following figure summarises these different steps.

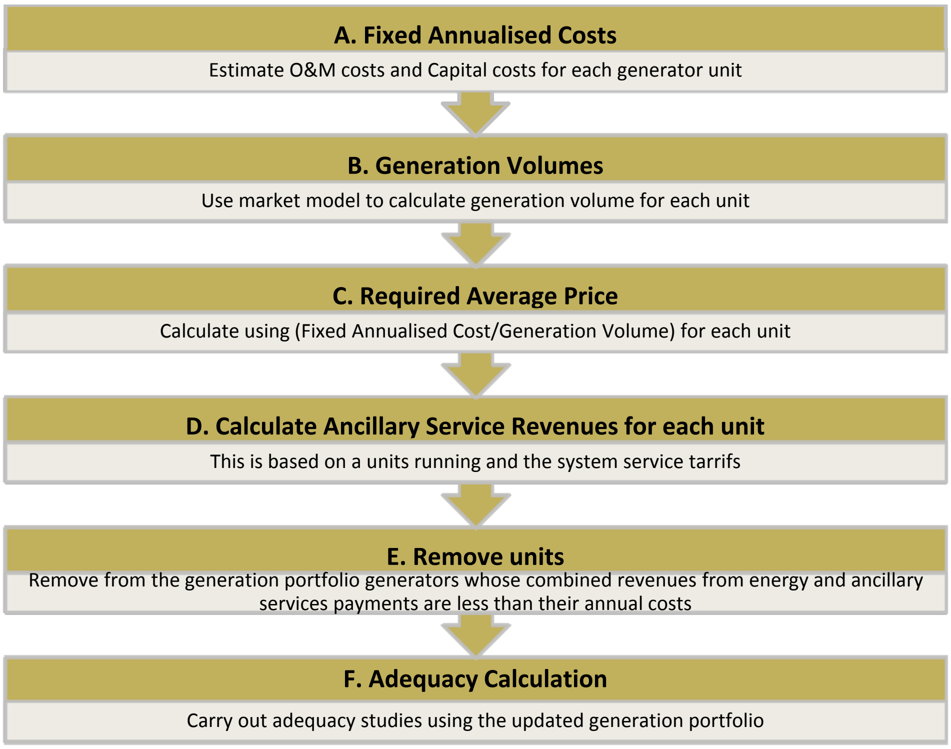


Figure 2 - Outline of methodology and workflow used in the TSOs' adequacy assessment, source: authorities

(20) The 2016 assessment concludes that capacity shortfalls would arise in all the assessed years if capacity providers had to rely on energy market revenues only and had to recover both their capital and operation and maintenance ('O&M') costs. The analysis indicates that the capacity margin is expected to tighten in the period to 2023 mainly because expected demand growth erodes excess capacity on the system and because some older generation plants retire. The analysis also demonstrates that assumptions about closure decisions particularly affect capacity adequacy. Also the availability of interconnector capacity in tight periods is a significant factor in determining the magnitude of the shortfall in capacity adequacy in the higher closure scenarios.

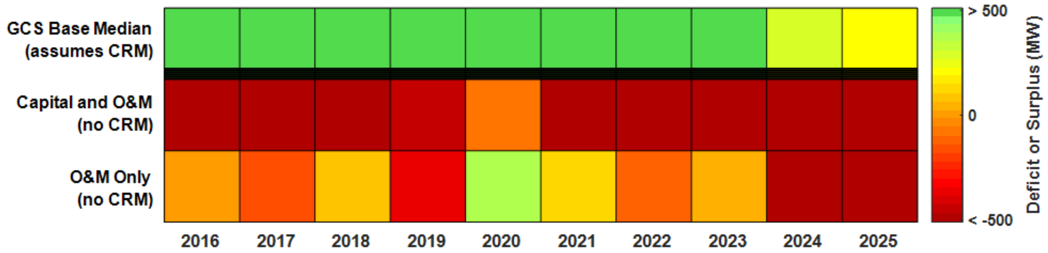


Figure 3 - Generation adequacy assessments when units that have not recovered their costs in the cost recovery modelling have been removed. In this figure a cut-off price on the electricity market of 3,000 €/MWh plus ancillary service revenues was used.

(21) The 2016 assessment contains an additional scenario, according to which the generators can earn up to 11,000 EUR/MWh in the wholesale market, i.e. a price cap reflecting the level of the value of lost load ('VOLL'). Also in this scenario, capacity would be inadequate – i.e. not meeting the reliability standard – in most years. Indeed, even if units could achieve a price that high, a too high number of units would still not recover their costs from the energy-only market to ensure generation adequacy at the 8-hour LOLE standard.

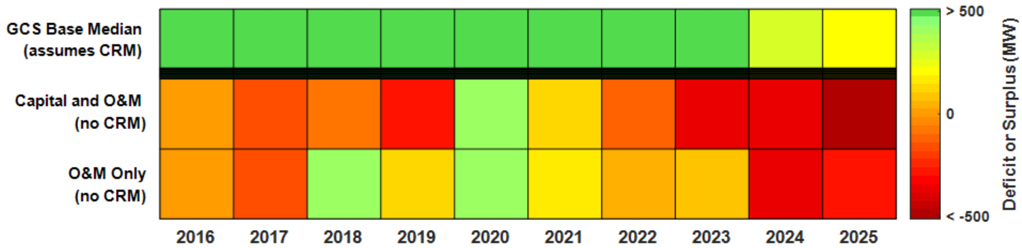


Figure 4 - Generation adequacy assessments when units that have not recovered their costs in the cost recovery modelling have been removed. In this figure a cut-off price on the electricity market of 11,000 €/MWh was used.

2.2.3. Detailed description of the Capacity Remuneration Mechanism

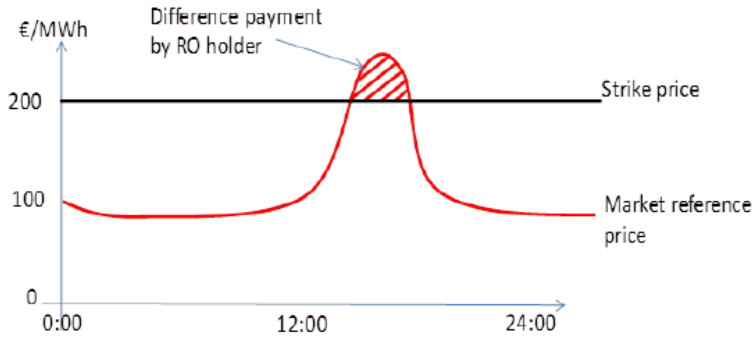
(22) The authorities intend to complement their I-SEM market reforms with a central buyer capacity mechanism based on 'reliability options' ('ROs').

(23) In short, it is a scheme whereby a central buyer, in this case the market operator, which is the Single Electricity Market Operator (SEMO)[8], purchases capacity, through an auction, up to the volume required to ensure security of supply. The SEMO, who financially administers the scheme, buys the capacity from capacity providers (e.g. power plants or demand response operators) in the form of reliability options. The amount of reliability options a capacity provider can[9] sell to the market operator primarily depends on the size of his facility and his average availability. The capacity provider that has sold the reliability option will receive a payment (the 'option fee'), i.e. the clearing price of the auction. In return, the capacity provider complies with certain availability obligations and is obliged to pay back 'difference payments' whenever the electricity price on the wholesale market exceeds a certain 'strike price'. These obligations are laid down in the

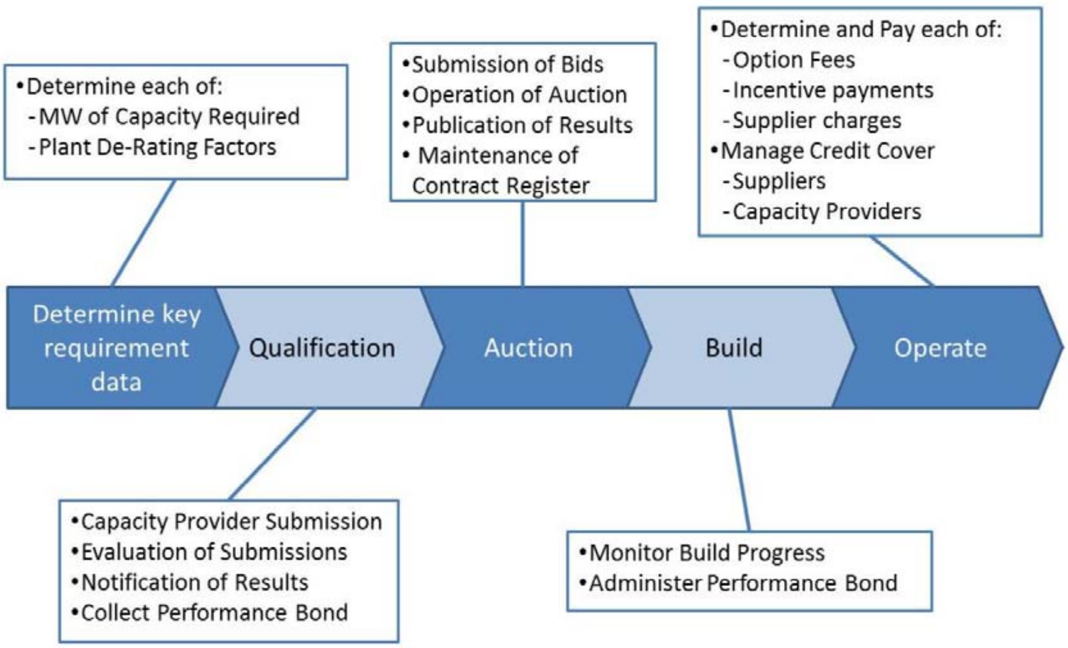
[8] A joint venture between the TSOs EirGrid and SONI.

[9] Depending on the type of capacity, there may be an obligation to participate in the CRM.

market codes[10] governing the CRM. The strike price is specified in the reliability option and administratively determined before the auction. The difference payment is the market reference price minus the strike price. The market operator finances the option fees through a 'capacity charge' imposed on electricity suppliers. It also makes difference payments to the suppliers in case the wholesale price exceeds the strike price. In this way, prices paid by suppliers are capped at the strike price and capacity providers are ensured a certain and fixed payment. The concept of ROs is set out in more detail in Section 2.2.8.



(24) The CRM has five key stages as depicted in the following figure provided by the authorities:



(a) **Determine key requirements**: setting the level of capacity that will be needed to maintain security of supply (i.e. the amount of capacity the market operator will buy in the auction) and the de-rating factors applied to different capacities.

(b) **Qualification**: start of the procurement of capacity from providers. This process aims to identify those potential providers of capacity that are

[10] In particular the Capacity Market Code and Trading Settlement Code.

likely to be able to deliver the capacity they offer. Those 'credible' providers 'qualify' to participate in the subsequent auction.

(c) **Auction**: the auction is a competitive procedure between qualified capacity providers in order to be awarded ROs for the provision of capacity. This auction will allocate sufficient ROs to at least meet the capacity requirement identified under stage (a).

(d) **Build**: ROs can be awarded in the auction to new capacity providers for new capacity to be built.

(e) **Operate**: the 'Operate' phase is when capacity is available to, and being paid for by, the I-SEM. This leads to the following payments:

   a) fixed “per MW” **option-fee payments** to capacity providers for their capacity

   b) variable “per MWh” **difference payments** from capacity providers at time when electricity prices are high (above the strike price);

   c) the **capacity charge**: payments from suppliers to the TSOs to cover the “per MW” option fee payments to capacity providers; and

   d) payments to suppliers (per MWh) at times when electricity prices are high (above the strike price).

The following sections will describe these phases in more detail and provide an overview of the planned CRM.[11] In particular, the design of the reliability option product is described in more detail in Section 2.2.8 under the heading 'the operating phase'.

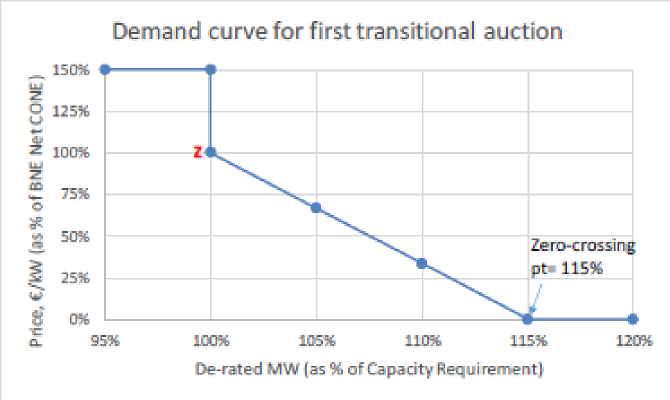
2.2.4. Determining the capacity requirement

(25) Before the auction is launched, it needs to be determined how much capacity is needed. The minimum quantity the market operator SEMO will buy in the auction is referred to as the 'capacity requirement'. It has to be sufficient to maintain the aforementioned reliability standard of 8 hours LOLE, in an unconstrained system (i.e. without taking into account potential transmission capacity constraints).

(26) In the first auction the central buyer will buy a quantity of capacity based on the capacity requirement. This amount is corrected for capacity that capacity providers have decided not to participate to the CRM. Moreover, the precise volume that the central buyer purchases in the auction will be based on a sloping demand curve. This means that in case the price of capacity is lower than a predefined level, the central buyer will buy additional capacity, as shown in the figure below:

[11] Note that the description is not exhaustive, but explains the most important high level design choices only. For a complete overview of all the design features one can consult the extensive consultation papers followed up by decision papers on the I-SEM website. Specific consultations and decisions were carried out regarding locational issues, market power issues and the setting of key parameters. See: https://www.semcommittee.com/i-sem

Figure 12: Demand curve decision



(27) As mentioned in recital (18), the capacity requirement is primarily based on the reliability standard applicable to the I-SEM, which is set at 8 hours LOLE. This means that in an average year there will be 8 hours where there is insufficient generation to cover demand. A stricter standard, i.e. a lower LOLE value, would mean an increased level of security of supply, but would also come with a higher capacity requirement and thus additional costs. To ensure the correct trade-off between costs and security of supply, the authorities calculated the actual value that consumers place on additional security of supply (the value of lost load or VOLL) and compared that with the costs of additional security of supply (the cost of the so-called 'Best New Entrant' plant, i.e. a peaking plant that would just cover its fixed costs if its annual running hours were the same as the LOLE). On that basis, the authorities explain that the estimated VOLL corresponds to an 8-hour LOLE.

(28) The 8-hour LOLE standard thus corresponds to a capacity requirement, which varies according to the scenario used for the development of the demand. The capacity requirement that is ultimately selected to determine the quantity that is procured for the CRM reflects the quantity that corresponds to the demand scenario with the lowest regret costs. The authorities have calculated for each demand scenario what the costs would be if the scenario did not materialise but another scenario did. The authorities provided the following example (where demand level 1 corresponds to lower demand than demand level 5): to calculate the regret costs for demand level 5, if demand level 1 transpired then the regret cost is that too much generation has been procured and this is valued at excess generation procured multiplied by cost of that generation calculated as cost of new entry or 'CONE'. If instead, demand level 10 transpired then expected energy non-served ('EENS') would be higher than expected. This regret cost is valued at additional EENS multiplied by VOLL. The demand scenarios are then ranked by their worst regret costs and the demand scenario with the least worst regret cost is selected. In this way, the least worst regrets analysis removes subjectivity from the choice of demand scenario to use for the auction capacity requirement.

(29) The basis of the auction capacity requirement will be the quantity of capacity that is required to satisfy the 8-hour LOLE adequacy standard for the demand scenario selected by the least worst regrets analysis. The basic requirement had not been calculated yet at the time of writing of this decision, but it is expected to be around 8 GW for the delivery year 2018/2019. The precise quantity that ultimately will be procured by the market operator can still deviate from this basic capacity requirement due to the fact that the aforementioned sloping demand

curve is applied in the auction and also due to the fact that certain locationally important capacity providers may be additionally contracted.

(30) A second key parameter to determine the capacity requirement is the extent to which a capacity provider is reliable. The authorities have measured the reliability for different power plant types by assigning each category a 'forced outage rate', expressed as a percentage of the time during which the plant is not available. The forced outage rate is based on historic performance data, whereby depending on the technology different methodologies will be used.[12] Factors including the forced outage rate are used to calculate a 'de-rating' factor to the capacity of providers active in the market. Capacity providers are thus only eligible for capacity contracts up to their de-rated capacity.

2.2.5. Qualification: eligibility and product design

(31) Once the capacity requirement is established, the qualification phase determines who can participate.

(32) The eligibility criteria are wide, meaning that all potential capacity providers, including renewables generators, storage operators, demand side units (including aggregated units), capacity with non-firm access to the transmission grid, new capacity and interconnectors, are allowed to participate. There is no minimum bid size.

(33) Beyond the general functioning of the mechanism described in Section 2.2.3 and the general openness of the mechanism, there are specific rules applicable to renewable energy sources ('RES'), to demand response, to capacity with non-firm access to the transmission grid[13] and to interconnectors. The specific rules applicable to new capacity are set out in Section 2.2.7.

(34) As regards RES generators, the authorities explain that these can participate irrespective of whether they currently receive renewables subsidies. In Ireland the subsidy scheme automatically reduces the RES subsidies when income from electricity or capacity increases (and vice versa). In Northern Ireland on the other hand the existing Renewable Obligation Certificate (ROC) scheme awards ROCs to qualified RES generators who can sell them on the market. In the absence of a link between the revenues arising from the sale of ROCs and the revenues from a potential capacity market contract, the award of ROCs will exclude the possibility to participate in the capacity mechanism and vice versa.

(35) The de-rating factors applicable to RES are generally higher than those of dispatchable capacities, typically conventional generators, reflecting their level of reliability. Whilst this limits their participation in the CRM, the authorities

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[12] The various methodologies to determine de-rating factors for the different technologies have been subject to a separate consultation and decision process. The documents related to this process can be consulted at: https://www.semcommittee.com/publication/sem-16-082-crm-capacity-requirement-and-de-rating-methodology-decision-paper

[13] Capacity with non-firm access to the grid is subject to the same de-rating factors as firm generators of the same technology, however it is exempt from any requirements to bid in the CRM auction, in respect of any volume in excess of their firm generation access.

explain, contrary to conventional generation variable RES generators are not obliged to participate in the CRM.

(36) As regards demand response (including aggregated demand response), the rules governing the CRM set out that they can participate in the auction and become RO holders, should they be successful in the auction. In the event that the reliability option is called, the treatment of a demand side operator (hereafter, demand side unit or "DSU") is different from that of generation. When the RO is called and the DSU reduces its demand, the end consumer's supplier is billed for a commensurately lower electricity purchase from the market. Therefore to the extent that there is reduced electricity consumption, this saving accrues to the supplier (and possibly the end consumer), but not the DSU. Contrary to a generator that has sold its power and received the market price for it, the DSU operator generally does not receive this energy payment. To address this issue, the authorities have decided that difference payments do not apply to DSUs when the contracted demand reduction is delivered. In order to ensure similar penalties as for generation units, difference payments however apply when the demand reduction is not delivered at times of scarcity.

(37) In addition to the rules applicable to DSUs described above, further policies are put in place by the authorities to take account of DSU specificities:

a) A percentage of the capacity requirement will be reserved for the T-1 auctions[14] for DSUs as it may be more difficult for DSUs to contract with demand sites 4 years in advance of capacity delivery. The volume to be withheld from the first T-4 auction will be in the range 2 % to 5 % of the Capacity Requirement.

b) The existing capacity price cap[15] will not apply to DSUs, although they will still need to bid below the auction price cap applicable to all bidders.

c) DSUs will have more flexibility in relation to the de-rating of their capacity (i.e. how much they are able to offer in the auction).

d) The RO strike price includes a DSU-related floor price to avoid distorting incentives.

(38) As regards cross-border participation, the CRM will follow a so-called "interconnector led" model, which means that interconnectors can directly participate to the CRM, with the amount of their (de-rated) capacity. Generators located outside the island of Ireland cannot directly participate, but the authorities have committed to endeavour to implement the full explicit participation model for capacity auctions that take place in 2020, subject to satisfactory and committed cooperation with the British counterparts.

(39) The CRM contains an obligation for existing capacity providers to pre-qualify in order to demonstrate that they are able to take part in the CRM auctions.

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[14] T-1 auctions are the auctions that take place 1 year before delivery. T-4 auctions take place 4 years before delivery.

[15] See recital (50) for a discussion of the price caps applied in the auction.

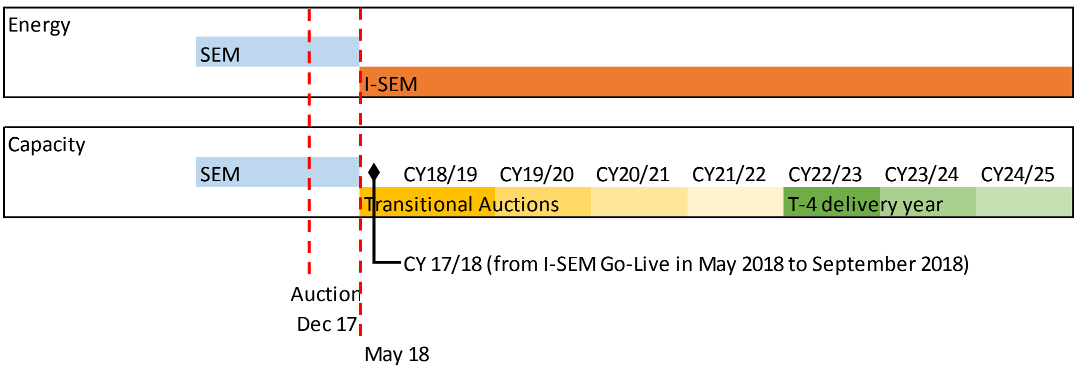
(40) The CRM and qualification process was designed to include a mechanism whereby potential capacity providers could notify to the TSOs the proportion of their de-rated capacity that they intended to offer into the auction. These quantities cannot deviate significantly from the pre-determined de-rated capacity: each provider has a "tolerance band" for its capacity offer depending on the type of technology class its capacity belongs to. The authorities have initially (for the first T-1 auction) set these tolerance bands at zero for all technology classes except DSU. The authorities explain that the application of mandatory bidding is inspired by the need to prevent the potential abuse of market power, whereby a generator could withhold some of its capacity from the auction in order to drive up the clearing price to the benefit of the remainder of its capacity. For intermittent renewables plants, mandatory bidding does not apply, reflecting the fact that penalties for non-availability may outweigh the benefit of option fees for these capacities. In practice, they may therefore decide not to participate in the CRM.

2.2.6. Allocation by auction

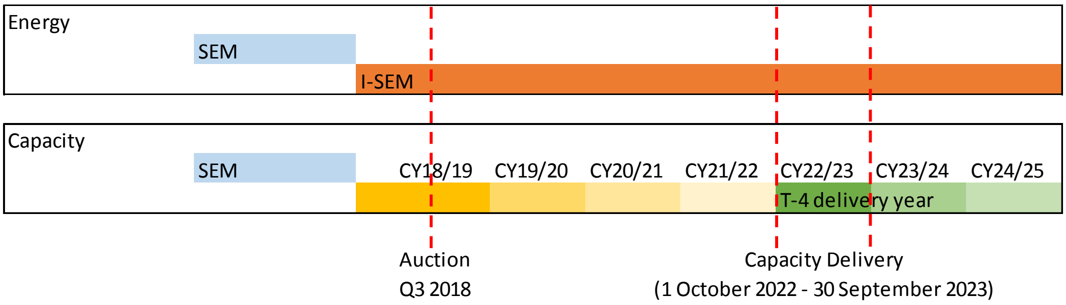
(41) The auction is a competition between qualified capacity providers for the award of ROs. This auction will allocate sufficient ROs to meet demand based on the capacity requirements as described in Section 2.2.4.

(42) In the first years of the CRM until 2022/23, transitional auctions will take place, whereby the delivery year is the year following the year of the auction ('T-1 auctions'). Transitional auctions will cover the period up to the delivery year of the first T-4 auction, which is scheduled to be held in 2018 for delivery in 2022/2023. Therefore, there will be four T-1 auctions and four T-4 auctions before 2022.

(43) The delivery period for the first T-1 auction will cover a period from the start of the I-SEM (currently planned for 23 May 2018) to the end of Capacity Year 2017/18 (30 September 2018) as well as all of the Capacity Year 2018/19. That is, the delivery period for the first T-1 auction will thus be from 23 May 2018 until 30 September 2019:



(44) The first T-4 auction will cover the delivery period of the Capacity Year 2022/23, and will be held approximately 4 years in advance of the start of the Capacity Year, so between Q3 2018 and Q1 2019.



(45) With regard to the auction design, the authorities assessed various models and decided to implement an interim solution first and a definitive model at a later stage.

(46) The interim solution that will be applicable during the transitional phase is based on a simple sealed bid format, whereby bidders simultaneously submit sealed bids comprising their supply curves. The bids are then aggregated, and the clearing price at which supply equals the demand is determined. All in-merit bidders will receive that clearing price (pay-as-clear). This interim solution is expected to be applied to all the transitional auctions and also to at least the first two T-4 auctions.

(47) The permanent solution is based on a sealed bid combinatorial auction, whereby bidders simultaneously submit one or more bids, per capacity unit, with each bid consisting of a single price / quantity pair for that Capacity Year. If the bidder chooses to submit multiple bids these bids are mutually exclusive, i.e. the auctioneer cannot accept both bids for the same unit. The auctioneer then chooses the optimal combination of bids to meet the capacity requirement. Also for this auction format the pay-as-clear principle will be applied. The authorities explain that the complex IT-infrastructure required for this type of auction is not yet available. Implementation of the permanent auction format is therefore envisaged as of the T-4 auction of 2020 (delivery year 2024/25).

(48) The authorities explain that a key concern they need to take into account in designing the auction relates to the so-called 'locational issue'. In the short and medium term, there are significant capacity constraints in the transmission network. The system is therefore not indifferent to the location of capacity. At the same time, capacity that is necessary due to its location may not win in the auction.

(49) The authorities have decided to address the locational issue through the design of the CRM and in particular through the design of the auction. Under the initial auction design as applicable during the transitional phase (i.e. until Capacity Year 2022/2023), the auction will be run without taking into account the location of the capacity provider. All providers up to the clearing price are awarded a capacity contract and entitled to an option fee at the level of the clearing price. However, if a plant that is crucial for security of supply because of its location was not successful in the capacity auction, this plant will also be awarded a capacity contract, with the option fee set at its individual bid price. In sum, the locationally important plant does not replace the marginal capacity provider but is contracted on top of it. The authorities concede that this approach results in procuring more capacity than established in the capacity requirement that does not take into account any grid constraints. However, the authorities maintain that this approach

better reflects the long term needs of the system as it awards a contract to the marginal capacity that is competitive and will be needed once the transmission constraints are resolved.

(50) In order to limit the exercise of market power in the capacity auctions, capacity providers can only bid up to a pre-established maximum auction price cap. The auction price cap is related to the cost of new entry and is provisionally set at 1.5 times the net cost of new entry ('Net CONE'). The CONE was also used for the determination of the capacity requirement and as such the approach helps to ensure that no capacity is procured at a price higher than the CONE and thus, that no capacity is procured at a price that is not reflective of consumers' willingness to pay. In addition to the market-wide auction price cap, existing capacity providers have to bid at a price no higher than a pre-defined 'existing capacity price cap'. This existing capacity price cap is also related to the CONE, but set at 0.5 x Net CONE. By limiting the amount at which existing capacities can bid, the authorities limit the potential exercise of market power further. Moreover, the authorities have estimated that at this level almost all plants required to meet the capacity requirement will be able to earn their net going forward costs. However, those capacities that have higher net going forward costs may submit an application to obtain a higher Unit Specific Price Cap at a level commensurate with those costs. Such applications are scrutinised by the regulatory authorities. Demand-side response operators and new capacity are not subject to this cap and can bid up to the market wide auction price cap (1.5 x Net CONE).

(51) Reliability options will be tradable on the secondary market, provided the buyers and sellers make use of a mandatory centralised market. Secondary trading is expected to be a useful tool for CRM participants to manage planned outages by suspending both option fees and difference payments in relation to the affected unit for the duration of the outage. Due to technical issues in implementing the enduring secondary market trading system, it is not expected to be operational until Q4 2018. In advance of this an interim solution has been put in place where capacity providers are relieved of their obligations for planned outages that have been agreed with the TSOs.

2.2.7. *Build: the participation of new capacity*

(52) New capacity and existing capacity requiring significant new investment for refurbishment are allowed to participate and compete against existing capacity in the auction. There are some specific rules for new capacity.

(53) In terms of rights, the main distinction between existing and new capacity is that the latter can acquire capacity contracts of up to ten years vs. one year for the former. New capacity can also benefit from a longer lead time, up to 18 months longer in T-4 auctions, which leaves a total period of 5½ years between the auction results and the termination date to complete their project. And, as explained above, new capacity can bid up to the general auction price cap.

(54) To qualify for a 10-year contract the capacity provider has to demonstrate that it will invest more than a certain EUR/MW threshold, which will initially be set at 300,000 EUR/MW. The threshold is set at 40 % of the gross costs of the best new entrant, which according to the authorities strikes the right balance between on the one hand allowing ten-year contracts for large investments only and on the

other hand enabling and encouraging large refurbishments. This threshold will be set for each auction by the authorities.

(55) Furthermore, incentives are in place to make sure that new capacity that is successful in the auction will actually be built. First, the new project has to provide a performance bond shortly after the auction. Second, an agreement with milestones will have to be entered into by the capacity provider, whereby in case milestones are not met, insufficient progress is made or false information is submitted, the performance bond will be forfeited and a termination fee[16] will be due, following a pre-determined termination fee schedule.

2.2.8. The operating phase: the concept of reliability options

(56) Capacity providers that are successful in the auction obtain reliability options and receive the option fee. In all settlement periods in which the market reference price exceeds the strike price the RO holders[17] will be required to pay an amount equal to the difference between these two prices.

(57) By being subject to difference payments at times when prices are high, the capacity providers have a financial incentive to be available at times of scarcity, because the payment has to be made irrespective of whether they were selling electricity during the settlement period. The reliability option design moreover ensures that capacity providers have access to a certain and fixed revenue stream rather than making them depend only on potentially volatile and thus uncertain revenue from the electricity sales. This thus incentivises market participants required for ensuring the adequate level of security of supply to stay on the market and / or to invest in new capacities.

(58) With respect to the strike price, the authorities have determined that the strike price must reflect the short run marginal costs of a peaking unit. In the energy-only market, that plant would need to recover the highest costs and would be in-merit and setting the price only at times of scarcity. To determine what that price is, the authorities, following extensive consultations, have developed a formula that takes into account fuel costs, carbon cost and the cost of reference of a demand response unit of 500 EUR /MWh which reflects the cost incurred by demand side when switching off.

(59) The market reference price will be the price actually obtained by an individual RO holder selling its electricity on the electricity market i.e. either the day-ahead, intraday or balancing market. For instance, for power sold on the day-ahead market, a potential difference payment reflects the difference between the price on the RO holders obtained when selling their electricity only on the day-ahead market and the strike price. The treatment of suppliers is similar, which means they receive difference payments based on the difference between the strike price and the price of the market on which they purchased their electricity. This so-called ‘split market’ approach is intended to ensure that only unreliable capacity is penalised, thus contributing to the objective of security of supply. If an RO

16 The maximum termination fee for the first auction is after the start of the Capacity Year: 40 EUR/kW

17 Demand response operators are subject to payback obligations in case of unavailability only, as they generally do not receive energy payments.

holder fails to sell its electricity in a period when a difference payment is due, it will be compared to the balancing market price.

(60) A further important feature of the reliability option concerns the so-called load following obligation. This obligation entails that the quantity that a capacity provider is contracted for under its RO varies with the actual overall system need for capacity. The authorities explain that when scarcity happens outside a period of peak demand for instance or because of low plant availability during the summer, it is not necessary for the capacity requirement in that period to be equal to the total volume of ROs sold in the auction. This allows each individual RO obligation to be scaled down pro-rata to reflect the actual demand for capacity. This load-following rule thus leaves the hedge of both providers and suppliers intact and balances the difference payments paid and received. Moreover, the difference payments reflect the actual value of scarcity.

2.3. The beneficiaries

(61) The beneficiaries of the CRM are those capacity providers successful in the auction. They receive the fixed option fee in the amount of the clearing price of the auction. As set out above, the eligibility criteria are broad to ensure market-wide participation.

2.4. Financing mechanism

(62) The fixed option fee that the market operator has to pay to the capacity providers will be recovered from electricity suppliers in the form of a capacity charge. The charge will be in proportion to the consumption of their customers, whereby a ‘profiled’ approach is used that focuses on where the demand is higher at times of system stress, so as to ensure the costs of the CRM are recovered from the demand that caused them.

(63) The difference payments that capacity providers have to pay in case of scarcity prices are used to compensate suppliers for those same scarcity prices. In most cases these amounts should be equal, but the authorities explain that there may be situations in which the amount of difference payments received will not be enough to hedge all suppliers. Such a shortfall can for instance arise because generators decide not to take part in the CRM (e.g. RES generators can opt out), because demand response is only subject to difference payments in case of unavailability, or because total demand in a particular period is higher than the total amount of ROs auctioned (which for example may occur 8 hours per year according to the reliability standard). Another reason is the applicability of a stop-loss provision (or ‘penalty cap’), which limits the amount of difference payments to 1.5 x the annual option fees received. The authorities have decided to pass on these revenue shortfalls by an increase in the capacity charge.

2.5. Budget

(64) The annual fixed payments resulting from the auction will depend on the clearing price of the auction and the amount of capacity to be procured. The authorities estimate that if the auction clears at the auction price cap, the capacity cost would be in the order of EUR 860 million for the first auction (based on the current best estimate of the capacity requirement). In practice however, the authorities expect the first auction will clear at a much lower level

and thus the annual fixed payments resulting from the auction would be significantly lower.

(65) The actual annual cost of the CRM can only be known ex-post at the end of the delivery period. It is the result of subtracting the effective differential pay-backs of all participants during the delivery year from the total fixed payments paid ex-ante. It is important to distinguish between the annual fixed payments resulting from auctions and the actual annual cost of the CRM, as the latter is systematically and significantly lower than the former.

(66) The division of the costs of the scheme between Ireland and the UK is based on the ratio of end-user consumption in Ireland and Northern Ireland, which means that approximately 75 % of the costs will be borne by Ireland and 25 % by Northern Ireland. As regards charging, capacity charges are settled on a per MWh of consumption basis for all suppliers across the all island market.

2.6. Duration

(67) The measure is envisaged to be in place for a period of ten years starting as of the day the reformed I-SEM market enters into force, currently foreseen for May 2018. As set out in the necessity assessment in Section 3.3.2 below, the structural market failures in the electricity market are of such a nature that capacity remuneration alongside energy revenue is expected to be necessary in order to continue meeting the reliability standard. The authorities explain that they will keep the CRM under revision during the first years of its operation and amend the rules where necessary through the capacity market code. A more comprehensive evaluation is foreseen to take place several years after the introduction of the I-SEM market.

3. ASSESSMENT OF THE MEASURE

3.1. Qualification of the CRM as State aid

(68) Article 107(1) TFEU provides that "*save as otherwise provided in the Treaties, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market*".

(69) The qualification of a measure as State aid requires the following conditions to be met cumulatively: a) the measure must be financed through State resources; b) it must grant an advantage liable to favour certain undertakings or the production of certain goods; c) the measure must distort or threaten to distort competition and d) the measure must be liable to affect trade between Member States.

(70) The authorities do not object to the qualification of the CRM as State aid within the meaning of Article 107(1) TFUE and have notified it for approval by the Commission. The authorities put forward that the measure complies with the

conditions set out in the Guidelines on State aid for environmental protection and energy 2014-2020 ("EEAG")[18].

3.1.1. Existence of State resources and imputability

(71) In order for a measure to be imputable to the State and financed from State resources, the Court of Justice has held that it is not necessary to establish that there has been a transfer of money from the State budget or from a public entity.[19] This has been confirmed in *Vent de Colère*[20], where the Court held that a mechanism, developed by the State, for offsetting in full the additional costs imposed on undertakings because of an obligation to purchase wind-generated electricity at a price higher than the market price, by passing on those costs to all final consumers of electricity in the national territory, constitutes an intervention through State resources. In other words, the Court considered that State resources were involved where funds for a measure were financed through compulsory contributions imposed by domestic legislation and managed or allocated in accordance with the provisions of that legislation.

(72) Similarly, the General Court confirmed that the German renewables support scheme ('EEG') involved State resources even though the support for renewables did not come from the general budget of the State but from the EEG surcharge paid eventually by the final consumers without passing through the State budget and thus not involving any burden on the general budget.[21] The General Court considered that for State resources to be involved it is sufficient i) that the TSOs had been designated by the State to manage the system of aid for the production of EEG electricity and ii) that the obligation on the TSOs that additional payments be made to producers of electricity from renewable energy sources was compensated by means of the funds generated by the EEG surcharge, administered by the TSOs and allocated exclusively to finance the support and compensation schemes set up by the EEG 2012.

(73) In the present case, the measure and the mechanism to finance the measure have been developed jointly by the authorities of Ireland and of Northern Ireland. The decision papers which were published by the SEM Committee and will be laid down in legally binding market codes indicated that the costs of the measure can be passed on to suppliers in the form of the abovementioned capacity charge. The measure is therefore imputable to the State of Ireland and of the UK.

(74) It also follows from the case law referred to above that the concept of "intervention through State resources" is intended to cover not only advantages which are granted directly by the State but also "*those granted through a public*

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[18] OJ C 200, 28.6.2014, p. 1.

[19] *Doux Elevage*, EU:C:2013:348, paragraph 34, *France v Commission*, EU:T:2012:496, paragraph 36; Judgment in *Bouygues Télécom v Commission*, C-399/10 P et C-401/10 P, EU:C:2013:175, paragraph 100; *Vent de Colère*, C-262/12, EU:C:2013:851, paragraph 19.

[20] *Vent de Colère*, EU:C:2013:851.

[21] Judgment in *Germany v Commission ("EEG 2012"),* Case T-47/15, ECLI:EU:T:2016:281, paragraphs 81- 128.

or private body appointed or established by that State to administer the aid".[22] In this sense, Article 107(1) TFEU covers all the financial means by which the public authorities may actually support undertakings, irrespective of whether or not those means are permanent assets of the public sector.[23]

(75) In that respect, the Commission notes that, since the TSOs are mandated to collect and attribute the funds by law, the financial flows are constantly under the control of the State even if they take place between private parties, i.e. in the present case, capacity providers and suppliers, with the TSOs as intermediaries tasked by the State to administer the funds. The decision papers and forthcoming market codes referred to in recital (23) clearly confer on the TSOs a series of obligations and rights as regards implementation of the mechanism resulting from the codes, so that the TSOs are the central point in the operation of the system laid down by it. The funds involved in the operation of the CRM are administered exclusively for the objective of security of supply as pursued by the CRM and in accordance with detailed rules defined beforehand by the Irish and United Kingdom legislatures. The codes will allow the TSOs to recover the full costs of this activity from suppliers. Those funds do not pass directly from the suppliers to the capacity providers, that is to say, between autonomous economic operators, but require the intervention of intermediaries (TSOs), who are entrusted by the State with their collection and administration. Accordingly, it must be held that the funds generated by the CRM and administered collectively by the TSOs remain under the dominant influence of the public authorities. On this basis, the funds must be categorised as State resources.

(76) The Commission therefore finds that the measure is financed through State resources and imputable to the State.

3.1.2. Existence of a selective advantage

(77) An advantage, within the meaning of Article 107(1) TFEU, is any economic benefit which an undertaking would not have obtained under normal market conditions, that is to say in the absence of State intervention.

(78) The Commission notes that the capacity providers of the CRM who were successful in the auction would not have received the remuneration they receive through the CRM if they had continued to operate in the electricity market on normal economic conditions selling electricity and ancillary services only.

(79) The measure is also selective because it only applies to certain economic operators, namely those capacity providers eligible to take part in the auction.

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[22] Judgment in *Steinike & Weinlig v Germany*, Case 76/78, EU:C:1977:52, paragraph 21; Judgment in *PreussenElektra*, C-379/98, EU:C:2001:160, paragraph 58; Judgment in *Doux Elevage and Cooperative agricole UKL-ARREE*, C-677/11, EU:C:2013:348, paragraph 26; Case *Vent de Colère*, C-262/12, EU:C:2013:851, paragraph 20; *Sloman Neptun*, joined cases C-72/91, C-73/91, EU:C:1993:97, paragraph 19.

[23] Judgment in *Doux Elevage*, EU:C:2013:348, paragraph 34, Judgment of 27 September 2012, *France v Commission*, T-139/09, EU:T:2012:496, paragraph 36, *Vent de Colère*, C-262/12, EU:C:2013:851, paragraph 21.

(80) The Commission therefore finds that the measure confers a selective advantage on its beneficiaries.

3.1.3. Distortion of competition and effect on trade

(81) The CRM risks distorting competition and affecting trade within the internal energy market. The liberalised all-island electricity market will be open and connected directly to that of the United Kingdom, its neighbour, and, through Great Britain, to the rest of the internal electricity market. Electricity is traded within the internal energy market and market functioning ensures that power is generated where it costs least and transmitted via interconnectors to be consumed where demand is highest. Creating a separate revenue stream for capacity and ensuring a certain amount of capacity investment in the market is expected to influence electricity prices, for example reduce prices or at least reduce price volatility, compared to an energy-only market. This affects the prices and profitability of local capacity and of capacity connected to the all-island system.

(82) Based on these considerations, the Commission finds that the remuneration paid to the capacity providers in the CRM has the potential to affect intra-Union trade and distort competition.

3.1.4. Conclusion on the existence of State aid

(83) In the light of the above assessment, the Commission concludes that the CRM constitutes State aid within the meaning of Article 107(1) TFEU.

3.2. Lawfulness of the aid

(84) By notifying the measure before its implementation, the authorities have fulfilled their obligations under Article 108(3) TFEU.

3.3. Compatibility of the CRM with the internal market

(85) In order to prevent State aid from distorting competition in the internal market and having effects on trade between Member States in a way which is contrary to the common interest, Article 107(1) TFEU lays down the principle that State aid which distorts or threatens to distort competition, in so far as it affects trade between Member States, is prohibited. In certain cases, however, State aid may be compatible with the internal market under Articles 107(2) and (3) TFEU.

(86) On the basis of Article 107(3)(c) TFEU, the Commission may consider compatible with the internal market State aid to facilitate the development of certain economic activities within the European Union, where such aid does not adversely affect trading conditions to an extent contrary to the common interest.

(87) The Commission has assessed the compatibility of the CRM in the light of the EEAG. In the EEAG, the Commission has set out the conditions under which aid for energy and environment may be considered compatible with the internal market under Article 107(3)(c) TFEU. Section 1.2 EEAG contains a list of the types of aid measures that may be considered compatible under the guidelines. For these types of measures, specific rules are provided in Chapter 3 EEAG.

(88) The Commission takes the view that the CRM is a measure to ensure generation adequacy and security of electricity supply and therefore falls within the scope of Section 3.9 EEAG on State aid for generation adequacy.

(89) To assess whether the CRM can be considered compatible with the internal market, the Commission assesses whether the design of the measure meets the following criteria listed in Point 27 EEAG (with more specific details for measures ensuring generation adequacy in Sections 3.9.1 to 3.9.6 EEAG):

(a) contribution to a clearly defined objective of common interest (see section 3.3.1 of this decision);

(b) need for State intervention (Section 3.3.2 below);

(c) appropriateness (Section 3.3.3 below);

(d) incentive effect (Section 3.3.4 below);

(e) proportionality (Section 3.3.5 below);

(f) avoidance of undue negative effects on competition and trade (Section 3.3.6 below);

(g) transparency of the aid (Section 3.3.7 below).

3.3.1. Objective of common interest

(90) As stated in Point (30) EEAG, the primary objective of aid in the energy sector is to ensure a competitive, sustainable and secure energy system in a well-functioning Union energy market. Points (219) to (221) EEAG define more specific criteria for how Member States should define the common objective for measures in the field of generation adequacy.

(91) Point (219) EEAG determines that measures for generation adequacy can be designed in a variety of ways and can be aimed to address both short term flexibility concerns and concerns about the ability to meet a generation adequacy target. The Commission notes that the CRM is a market-wide capacity mechanism aimed at ensuring the long term ability of capacity to meet the all-island reliability standard (8-hour LOLE). This standard can be regarded as the generation adequacy target referred to in Point (219) EEAG, because it indicates the degree of security of supply the authorities aspire to, based on their estimates of the willingness of consumers to pay for secure power supplies. The Commission notes that concerns about meeting this standard are justified, based on the generation adequacy assessment, which, as described in recital (20), shows that absent a capacity mechanism, in almost all years under consideration shortfalls are expected to arise. The Commission also underlines that the fact that new capacity is allowed to participate and encouraged by means of longer term contracts indicates that the CRM is intended to send a long term investment signal.

(92) The necessity assessment carried out by the TSOs has convincingly demonstrated that the reliability standard will not be met if capacity providers have to rely on energy market revenues only. The Commission notes in

particular that this conclusion already takes into account the development of the grid and the demand side, as explained in recital (18).

(93) Point (220) EEAG explains that aid for generation adequacy may contradict the objective of phasing out environmentally harmful subsidies and that alternative ways for achieving generation adequacy without these negative environmental impacts should be considered. It suggests that alternative ways could be the facilitation of demand side management and the increase of interconnection capacity.

(94) In this context, the Commission notes that the primary objective of the CRM is to ensure security of supply. Security of supply entails the availability of a sufficient amount of flexible back-up capacity in case intermittent renewables do not produce. The Commission notes the ambitious Irish and Northern Irish decarbonisation objectives mentioned in recital (10). The Commission furthermore notes that the main contribution to the increasing share of renewables will be delivered by wind generation, which is particularly variable and requires back-up generation. Furthermore, the Commission is aware that, in addition to the CRM, various projects are ongoing aimed at increasing the degree of active demand side response[24] and at increasing the interconnection[25] capacity of the all-island market. However these measures alone are not sufficient to meet the reliability standard, as is clear from the adequacy assessment's conclusions described in recital (20).

(95) The Commission notes that the CRM is a technology neutral scheme open to all potential capacity providers and therefore may involve payments to all capacity providers, including conventional generation based on fossil fuels such as coal and peat[26][27].

(96) The Commission is furthermore aware of the existence of a scheme in Ireland involving a public service obligation ('PSO') on generators using indigenous peat and has assessed whether the co-existence of this scheme with the CRM is compatible with Point (220) EEAG on the phasing out of subsidies for fossil fuels.

(97) The Commission first of all notes that the PSO scheme will be phased out in December 2019 and that, until that date, any possible revenues from the CRM

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24 Examples of measures aimed at the development of demand side response are the STAR and Powersave schemes. A detailed description of the schemes can be found on the website of Eirgrid: http://www.eirgridgroup.com/customer-and-industry/becoming-a-customer/demand-side-management/.

25 Interconnection projects that are ongoing include, but are not limited to, the expansion of interconnection capacity between Ireland and Northern-Ireland and the establishment of a link between Ireland and France.

26 There are two coal-fired power plants in the all-island market (the Moneypoint plant (915 MW) in Ireland and the Kilroot plant (520 MW) in Northern-Ireland). There are three peat plants in Ireland: Edenderry (128 MW), Lough Ree (100 MW) and West Offaly (135 MW). Combined, these capacities constitute some 1,800 MW on a total capacity requirement of around 8,000 MW.

27 The Commission draws attention to the fact that a proposal for a new regulation for the electricity market (EU-Regulation COM (2016) 861 of 31 November 2016) is under negotiation and that the measure is without prejudice to the future rules applicable to electricity market design.

for these generators will reduce their revenues under the PSO so that overcompensation is excluded. Furthermore, the Irish authorities have submitted to the Commission their view on the future of peat generation in Ireland after the phasing out of the PSO. The Irish authorities indicate that although the peat plants can continue to operate in the market and are in principle allowed to participate in the CRM, the two remaining peat plants under the PSO have been approved under the Renewable Energy Feed In Tariff 3 Scheme for PSO support for co-firing 30% of total capacity (45 MW out of 150 MW for West Offaly and 30 MW out of 100 MW for Lough Ree) out to 2030. It is expected these plants will begin co-firing on biomass in 2019. Therefore, the non-cumulation rule for aid received under the renewables scheme, as set out in recital (124), applies. The third peat plant – Edenderry – already uses biomass for co-firing. The Irish authorities furthermore underline that in the decade beginning in 2021, the new Renewable Electricity Support Scheme (RESS) will incentivise investment in further renewable generation beyond the current target and that peat burning generation will gradually be replaced by sustainable biomass. The Irish authorities therefore indicate that they expect that with the PSO backed peat contracts expiring at the end of 2019 and the anticipated increases in carbon prices reducing the commercial viability of peat, the output of the plants will reduce over time as more efficient and low carbon generation takes their place in the economic merit order.

(98) The Commission thus considers that the CRM is open to all potential capacity provider and does not contradict the objective of phasing out environmentally harmful subsidies including for fossil fuels (see recitals 95-97). The Commission notes that the authorities have considered and implemented other measures, including in the field of DSR and interconnection, which are however insufficient to remove the generation adequacy concerns as set out in recital (18). The Commission therefore concludes that the CRM is compatible with Point (220) EEAG.

(99) Point (221) EEAG underlines amongst others the need to clearly define the objective at which the measure is aimed, including when and where the adequacy problems are expected to arise.

(100) The Commission notes that the primary objective of the notified measure is to ensure that a sufficient amount of electricity capacity remains available in the reformed I-SEM market to ensure that the reliability standard can be met, thus ensuring an economically efficient level of security of supply. The Commission agrees that on the basis of the detailed adequacy assessment, as described in Section 2.2.2, it is reasonable to expect that generation adequacy issues will arise absent a capacity mechanism. As set out in recital (20), the assessment has demonstrated that in almost all years under consideration (2018-2025) shortfalls are expected to arise. The Commission in particular notes that the size of the CRM is limited to a level that reflects the willingness of the consumers in the all-island market to pay for security of supply. By setting the amount of capacity to be procured at this level, the authorities clearly demonstrate that the objective is to ensure their security standards are met and that capacity is not remunerated for other reasons. Furthermore, the Commission accepts that the identified transmission constraints may affect security of supply in particular locations and notes that CRM aims to address these threats to security of supply as well, as part of its objective to safeguard security of supply.

(101) On this basis, the Commission concludes that the CRM is targeted at and contributes to a well-defined objective of common interest, namely that of security of supply.

3.3.2. Need for State intervention

(102) As a general principle, in order to demonstrate the need for State intervention it must be established that a market failure exists that prevents market forces from achieving generation adequacy and thus risks undermining the objective of security of supply. Points (222) to (224) EEAG define more specific criteria of how Member States should demonstrate the need for State intervention.

(103) Point (222) of the EEAG requires in particular a proper analysis and quantification of the generation adequacy problem. Therefore, irrespective of the type of capacity mechanism a Member State intends to implement, a thorough adequacy assessment needs to be carried out before implementing a capacity mechanism. An adequacy assessment based on probabilistic modelling can provide reliable projections as to the likelihood of supply being sufficient to meet demand in the medium to long term. Where the assessment demonstrates that the probability of loss of load events is high, market reforms are likely to be necessary and it may be appropriate to accompany them by a capacity mechanism to ensure an appropriate level of security of supply is maintained. An adequacy assessment is moreover essential to identify the amount of capacity that needs to be maintained in the system in order to ensure secure supplies, i.e. to prevent uneconomic under- or overprotection. Moreover, as required by Point (223) EEAG the existence of market failures have to be clearly demonstrated.

(104) The Commission notes that the authorities have carried out probabilistic adequacy assessments – described extensively in Section 2.2.2 of this Decision – that have sought to establish whether or not in the absence of a capacity mechanism the pre-determined reliability standard would be met (i.e. the 8-hour LOLE requirement, as explained in Section 2.2.4).

(105) The Commission considers that the probabilistic assessment is based on the approach of calculating the necessary revenues for each generation unit and comparing these with the expected revenues in a market without capacity mechanism. The Commission regards this as a satisfactory way of analysing the likelihood of existing capacity remaining in the market. The Commission agrees that on the basis of the outcomes of such assessment, realistic expectations can be developed as to the future ability of the system to meet the reliability standard. The Commission underlines that, as set out in recital (20), in almost all years under consideration shortfalls are expected to arise if capacity in the all-island market had to rely on energy-only market revenues only.

(106) The Commission moreover notes that the quantity of capacity that the authorities intend to procure and remunerate is directly based on the necessity assessment, because the authorities used an objective reliability standard based on the LOLE-metrics. The Commission is therefore reassured that no over procurement will take place, with the exception of the additional contracting of locationally important plant as set out in recital (49) and assessed in recital (152), but that the size of the CRM is economically rational.

(107) In line with Point (223) EEAG, Ireland and Northern Ireland have also identified and substantiated the existence of various market failures, as described in recitals (14) to (16). The Commission acknowledges that in smaller markets with relatively low interconnection and important shares of variable renewables, the unexpected closure of only one or a few capacity providers can have a significant impact on security of supply. The Commission also notes that it has been convincingly demonstrated, by way of the probabilistic adequacy assessment described in detail in Section 2.2.2., that capacity in the island of Ireland is expected to suffer from a missing money problem in case they would have to rely on revenues from the energy market only. The Commission notes that the fact that in practice this has not been demonstrated can be explained by the design of the current 'SEM' market arrangements, in which all generators are ensured to receive sufficient funding to recover their fixed costs. However, the adequacy assessment convincingly demonstrates that capacity shortfalls would arise in all the assessed years if capacity providers had to rely on energy market revenues only. In view of these market failures, the Commission agrees that a capacity mechanism can be an effective instrument to reduce the uncertainty among investors about their returns. The Commission notes that in particular a mechanism based on the idea of reliability options, whereby capacity providers give up (part of) their uncertain scarcity rents in exchange for a certain payment (in the form of the option fee), is suitable to take away the uncertainty that may prevent capacity providers from becoming or staying active on the market. Finally, the Commission welcomes that the authorities are in parallel taking steps to improve price signals in the electricity market by reforming the market framework so that prices will more accurately reflect scarcity situations. Moreover, the implementation of a system of Administrative Scarcity Pricing ('ASP') as described in recital (13) ensures that prices are high at times of scarcity and enhances the confidence of future capacity providers that their availability at times of scarcity will be duly rewarded.

(108) Point (224) of the EEAG requires the Commission to take account of various assessments to be provided by the Member State, relating to the impact of variable generation, demand side participation, interconnection and any other element causing or exacerbating the generation adequacy problem. The Commission has taken account of and scrutinised the reports related to all four elements mentioned in Point (224) that the authorities submitted in the context of the notification of the CRM and that demonstrate the need to take additional measures to ensure security of supply. Of particular relevance in this context is the generation adequacy assessment[28], which the Commission has assessed to understand whether and why the CRM is necessary. This assessment indeed takes into account the various elements set out in Point (224) EEAG, namely the increasing share of variable RES on the all-island market, the development of the demand side and the expected development of the generation mix in view of changing economic circumstances for the different technologies.

(109) Based on the foregoing considerations, the Commission takes the view that the CRM is necessary.

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[28] The generation adequacy assessment can be accessed via: https://www.semcommittee.com/sites/semcommittee.com/files/media-files/SEM-14-048%20Assessment%20of%20Generation%20Adequacy%20SEMC%20Submission.pdf.

3.3.3. Appropriateness

(110) As a general principle, a State aid measure is appropriate if it is designed in a way as to properly address the market failures identified. The EEAG further specify in Points (225) and (226) that in the context of aid for generation adequacy this implies that the aid should remunerate solely the service of pure availability provided by the generator and that the measure should be open and provide adequate incentives to both existing and future generators and to operators using substitutable technologies, such as demand response or storage solutions.

(111) This section first analyses whether the market-wide CRM is the most appropriate among the various options to address the identified adequacy concern (section 3.3.3.1 of this decision). It then analyses whether the specific design of the CRM is in line with the abovementioned specific EEAG requirements (section 3.3.3.2 of this decision).

3.3.3.1. Appropriateness of the CRM as instrument

(112) The Commission notes that generation adequacy concerns should first and foremost be addressed by reforming the market so as to provide the incentives for capacity providers to become or remain active on the energy-only market and deliver security of supply at lowest possible costs.

(113) As concluded in Section 3.3.1 of this decision, the objective of the measure is to ensure secure electricity supply in the all-island electricity market. However, there are multiple ways to address the market failures identified by the authorities.

(114) The Commission notes that the measure has been designed to support and complement the ongoing reform of the market ('I-SEM') the goal of which is to ensure compatibility with the EU internal energy market legislation. Of particular importance to ensure an electricity market that provides efficient price signals are the introduction of day-ahead, intraday and balancing markets, enabling balancing responsible parties to manage their positions efficiently. The integration of demand-side response to the electricity market will also be actively encouraged by the regulatory authorities[29]. Also the ancillary services market will be reformed, via the introduction of the so-called DS3 Programme[30], which ensures market-based purchase of system services by the TSOs. The Commission furthermore notes that important investments in grid infrastructure are ongoing to solve the capacity constraints in the Dublin area and Northern Ireland, such as the completion of the North-South interconnector.

(115) The Commission agrees that the market reforms set out in the whole island of Ireland are in theory appropriate to ensure the market will deliver a maximum

[29] In terms of demand side response on the island of Ireland 201 MW of capacity was registered in the SEM at the start of 2015, compared with 41MW in 2012 thanks to specific schemes conducted by EirGrid. Ireland and Northern Ireland plan to take further measures that should increase demand-side participation in the future.

[30] For a description and overview of the reform of the ancillary services market see: https://www.semcommittee.com/ds3.

degree of security of supply. However, as concluded in Section 3.3.2, the adequacy assessment carried out by the TSO, combined with the analysis of the market failures on the all-island market, have convincingly demonstrated that in the coming years those market reforms and investments cannot be relied upon to solely bring about a level of security of supply that meets the established economic reliability target.

(116) The Commission furthermore notes that in the present case, where reforms are underway but where structural market failures are expected to affect investment signals and therewith security of supply, a well-designed and market-wide capacity mechanism may be an appropriate form of intervention. Among the various types of market-wide capacity mechanism, a system based on reliability options has the advantage of leaving price signals in the market intact, as the pricing incentives of its beneficiaries remain undistorted, in particular given that the capacity mechanism includes a load following obligation and applies de-rating, which both have the effect of limiting the share of capacity that is subject to pay-back obligations at any point in time. In practice, this means that participants not only are remunerated in order to stay in the market, but also have the incentive to be available when scarcity occurs and prices are corrected so as to reflect that scarcity. Given that holders of reliability options are subject to a pay-back obligation the amount of which is directly related to the market prices during the scarcity period, they will have an incentive to sell their energy in the market and receive the scarcity price. In sum, the reformed market and the CRM are expected to be mutually reinforcing.

3.3.3.2. Remuneration of availability only

(117) With regard to Point (225) EEAG, the Commission recalls that the main reason for the need for capacity mechanisms to remunerate availability only and not the actual electricity produced, is to limit distortions of the wholesale electricity price on the market. Such distortions could arise when granting electricity payments to capacity providers in the scheme and not to those without a capacity contract.

(118) The Commission notes that the option fee paid to capacity providers with a reliability option consists of a fixed payment for maintaining the contracted capacity available for any periods of scarcity. It thus remunerates the availability of the capacity and does not include remuneration for the amount of electricity the capacity providers will offer on the market.

(119) The Commission therefore concludes that the requirement to remunerate the availability service only is met.

3.3.3.3. Eligibility rules

(120) Point (226) EEAG determines that capacity mechanisms should be (i) open to different technologies, (ii) provide adequate incentives for both new and existing capacity, and (iii) take into account to what extent interconnectors can help remedy the generation adequacy problem identified.

(121) As set out in recitals (32) to (38), all types of capacities can participate in the CRM, irrespective of the technology they use to generate electricity. Also demand-side units, storage and interconnectors can participate. New capacity

can participate and can get up to ten-year contracts so as to avoid putting them at a competitive disadvantage compared to existing facilities.

(122) The Commission considers that the eligibility rules for all types of capacities are appropriate to ensure that a level playing field exists between the various potential capacity providers in the CRM.

(a) Participation of renewable generators and other supported generators

(123) With regard to RES, the Commission has assessed whether the participation of RES that are already supported via the Irish and Northern Irish support schemes (as described in recital (34)) for the development of renewables leads to over-compensation of aid and therefore distorts the level playing field between RES generators and other capacity providers. The Commission is satisfied that this is not the case.

(124) In the case of the Republic of Ireland, the payments received in the context of the CRM will be subtracted from the payments made through the renewables support scheme 'REFIT'. In Northern Ireland a certificate scheme (ROC scheme) is in place which allows operators of renewable energy generation units to sell certificates on the open market. The authorities have committed to amend the design of the I-SEM in the following manner: renewable generators will be free to participate in the CRM but in order to do so, they will have to forgo any support that they receive through the Northern Ireland renewables obligation scheme. If they do not wish to forgo the renewables support they will be free to participate in the CRM only once their renewables contracts expire. As the ROC scheme is now closed in Northern Ireland, all new renewable generations will be eligible to bid for capacity contracts.

(125) The Commission has also assessed whether revenues received from the scheme supporting peat used in electricity generation (ending in December 2019) would be cumulated with revenues from the CRM. The support from the former scheme is calculated as the difference between allowable costs and the total market revenues. The authorities indicated that the total market revenues will include any revenues earned under the capacity mechanism (net of RO difference payments). The CRM revenues will reduce the level of subsidy payment made through this peat scheme. Accordingly, there will be no cumulation of aid in respect of the operation of the peat scheme and the new CRM.

(b) Participation of demand response

(126) With regard to demand response, the Commission notes that demand side units ('DSUs') – contrary to generators – are not subject to a payback obligation to the extent the demand reduction is delivered in line with the capacity contract. The authorities explain that the reason to exempt DSUs from the payback obligation is that under the I-SEM, it is not possible for DSUs to receive an energy payment for the demand reduction. Under the I-SEM, only suppliers can be remunerated for demand reductions, i.e. when their customers reduce their loads they will be credited with the market price at the time of the reduction. The authorities explain that DSUs are generally aggregators that do not buy and sell on the energy market, but whose role is to contract flexible consumers and offer the flexible capacity to the CRM.

(127) The Commission agrees with the authorities that applying the payback clause to DSUs that do not receive an energy payment would indeed place them at a disadvantage compared to other capacity providers, notably generators, who can fully finance the payback from the energy payments during peak prices. The Commission however notes that the situation that DSUs cannot access energy payments needs to be remedied in the medium term. Once the I-SEM reforms are implemented, it will become possible for demand response providers, i.e. flexible consumers, to be credited – directly or via their supplier – with an energy payment. The Commission furthermore notes that it cannot be excluded that under the proposed solution (i.e. the exemption from the payback obligation for DSUs in case of delivery) DSUs indirectly benefit from energy payments, for instance via the consumers whose demand reductions they aggregate or via a supplier to whom they are affiliated. The Commission has therefore requested Ireland and Northern Ireland to strive to enable a DSU treatment equivalent to that of other capacity providers.

(128) The authorities have acknowledged that the exemption from payback obligations for DSUs is an interim solution due to the present market design that does not allow DSUs to be active on the energy market. The authorities however underline that it is unlikely that in practice DSUs benefit directly or indirectly from energy payments because in the large majority of cases the DSUs are not affiliated with any supplier. The authorities also underline that at short notice it is not possible to assess all contractual arrangements between DSUs and consumers on the one hand and consumers and suppliers on the other. Changing the rules immediately and unexpectedly may have the undesired effect of discouraging large portions of potential demand side response from participating.

(129) On this basis, the authorities have committed to end the exemption from payback obligations for DSUs as of the delivery period starting in October 2020.

(130) The Commission concludes that the exemption of DSUs is acceptable as a temporary solution, in view of the potentially prohibitive effects that full application of the payback clause would have on DSUs and therewith on the participation of demand response as a whole in the CRM. The Commission welcomes the commitment of the authorities to end the exemption for DSUs as of the delivery period starting October 2020.

(c) Cross-border participation

(131) With regard to interconnectors, the Commission notes that the authorities envisage for cross-border participation the "interconnector led" model, whereby interconnectors can directly participate in the CRM, with the amount of their de-rated capacity.

(132) The authorities have explained that whilst the direct participation of foreign capacity providers is the preferred model, there are important technical and regulatory hurdles which prevent direct participation in the first auction. In practice, direct cross-border participation entails first and foremost effective cooperation with the various actors in the neighbouring market of Great Britain (TSOs, regulatory authority and market operator). The authorities have committed to endeavour to implement the direct participation of foreign

capacity in the capacity auctions in 2020, subject to satisfactory cooperation with the authorities of Great Britain.

(133) The Commission has acknowledged the complexity of direct participation of foreign capacity in its decision on the market-wide capacity mechanism of France[31], allowing for a three-year transition. The Commission therefore accepts the timeline to which the authorities commit, i.e. direct participation of foreign capacity of as of the auctions taking place in 2020.

(d) Participation of new capacity

(134) With regard to new capacity – the participation requirements of which are set out in Section 2.2.7 – the Commission is satisfied that allowing new capacity to receive a longer term contract will enable them to secure lower-cost financing for their investment. This can help mitigate barriers to entry for new investments, in particular those of new entrants, and help them compete more effectively alongside existing generation.[32] By encouraging competition in the market thanks to the development of new capacities, longer term contracts can therefore help lowering costs for consumers in both the energy and capacity markets.

(135) One market participant however submitted to the Commission that the CRM design would create barriers to entry and competition for new entrants. First, while new entrants would benefit from longer contracts (10 years as opposed to 1 year for existing players), the duration of such contracts would be too short to ensure new plant financing and should be increased to 15 years, similarly to the capacity mechanism in place in Great-Britain. Setting the contract duration at 10 years would moreover lead to windfall profits for existing plants in years where new entry is required, because the payment new entrants need would be higher with a 10-year contract than with a 15-year contract. Second, new plants would not benefit from fully depreciated capital costs contrary to existing plants and would thus need separate auctions in order to be able to effectively enter the market. Third, a number of parameters used to determine the contract volume and remuneration (e.g. the derating factor, the level of ASP, the reliability option strike price formula) are set once, at the time of the auction of the first year, and would constitute a competitive disadvantage for new plants in comparison to existing plants which contracts are set on an annual basis. Fourth, transitional auctions (held between 2017 and 2021) will be held the year before the delivery year, which would leave no room for new entrants. Fifth, the market participant also argues that new entrants can only be granted long term contracts in constrained areas if they are in-merit and considers this to be discriminatory towards new plants. Sixth, the market participant in addition claims that the deliberate disjointing of the DS3 auction from the CRM auction will create an additional investment barrier, because capacity providers with significant investment costs need to maximise their investment certainty by receiving

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31 Commission Decision C(2016) 7086 of 8 November 2016, http://ec.europa.eu/competition/state_aid/cases/261326/261326_1840296_301_2.pdf.

32 For a more detailed description of the Commission's position regarding longer term contracts for new capacity see: European Commission, "Designing a Competitive Bidding Process, and Ensuring Competition Between New and Existing Capacity" http://ec.europa.eu/competition/sectors/energy/capacity_mechanisms_working_group_april2015.pdf.

revenue under both the DS3 system services and the CRM. The complainant considers in addition that by preventing new plants to enter while they would arguably have lower costs once they have paid off their investment costs, the CRM design favours existing plants and in turn provides them with overcompensation.

(136) As regards the contract duration for new entrants, the authorities have considered different options in their public consultation. They concluded that providing a 15-year contract contains "*the risk that some plant will benefit from Reliability Option Fees beyond the date at which that plant should have closed*", while "*plant with an economic life that is longer than [10 years] will be able to obtain Option Fees for the remainder of their economic life by competing (as existing plant) in auctions for annual Reliability Options after the expiry of their initial (and long) Reliability Option.*"[33]. The Commission considers that the authorities' choice to avoid the risk of financing and thus overcompensating plants that should have closed before the contract expiry date is legitimate and concludes that the duration of the contracts for new players is appropriate.

(137) As regards the need for separate auctions, the EEAG explicitly require measures to be open to both existing and new plants (Point (226)), not to create separate auctions. The Commission in addition considers that the fact that the full investment of new entrants must be recouped is already taken into account in the bidding caps, since new capacities can bid up to 1.5 Net CONE compared to 0.5 Net CONE for existing capacities. In addition, existing plants do not necessarily have already fully depreciated their capital costs. A single tender for both new plants and existing plants (irrespective of their depreciation level) is therefore appropriate.

(138) As regards the adaptation of de-rating factors and other parameters, the Commission considers that the fact that the parameters are stable for new capacity throughout their longer term contract brings additional certainty for new plants from which they should benefit in their financing.

(139) As regards the lead time of the transitional auctions and the participation of new plants in these auctions, the Commission notes that new capacity is not excluded from participating to the transitional T-1 auctions and that a T-4 auction will be launched as of 2018. The fact that the first delivery year for the first T-4 auction is 2022 necessarily results from the phasing-in of the CRM.

(140) As regards the fact that new entrants can only be granted long term contracts in constrained areas if there are in-merit, the authorities have introduced this rule for the following reasons: "*There is a concern that the presence of constraints could create conditions where new entry could exploit limited competition in the constrained zones to gain a high priced 10-year contract, particularly in the transitional auctions.* […] *Since committing to longer term higher price pay-as-bid contracts could commit customers to paying for longer term locational capacity when cheaper transmission investment solutions may be available, we would not propose to allow any capacity provider to obtain a pay-as-bid*

[33] SEM Committee, Second Consultation Paper SEM-15-104, page 7.

Reliability Option for more than 1 year".[34] The authorities also explain that this will only apply to transitional auctions at this stage as the locational constraints are expected to be resolved afterwards. In addition, they might consider long-term arrangements on a case-by-case basis if needed for security of supply. The Commission considers that this rule is justified in light of the risk of contracting new capacities at a too high cost, but underlines the importance of resolving the transmission constraints swiftly.

(141) As regards the disjointing of the DS3 auction from the CRM auction, the Commission considers that joint auctions may not necessarily be required since they are aimed at procuring different products. The Commission also notes that the authorities intend to develop DS3 services that are consistent with the CRM design.[35] The Commission acknowledges that it is important for new capacity to be able to estimate potential income from all revenue streams, including ancillary services. However, the Commission notes that the DS3 market as well as the other I-SEM market arrangements will be implemented before the first T-4 auction and that this should allow new entrants to get insight in their potential revenues.

(142) The Commission therefore concludes that overall the specific rules that apply to new capacity are appropriate to address the identified need to increase certainty of future revenues for new capacity in order in particular to secure low-cost financing, and that the specific rules do not discriminate against new capacity in favour of existing capacity.

(e) Conclusion on appropriateness of the measure

(143) Based on the foregoing considerations, the Commission considers that the planned CRM is the appropriate instrument to address the security of supply risks identified by the authorities. The Commission also considers that the design of the CRM is appropriate, as it is in principle open to all types of capacity providers and remunerates only availability. The Commission takes note of the authorities' commitments to modify the eligibility criteria to further improve the conditions of participation for demand response operators and by implementing direct cross-border participation of foreign capacity by 2020, subject to satisfactory cooperation with the British authorities.

3.3.4. Incentive effect

(144) A State aid measure has an incentive effect if it changes the behaviour of the undertakings concerned in such a way that they engage in activities which they would not carry out without the aid or which they would carry out in a restricted or different manner. The EEAG has laid down more specific guidance as to the interpretation of this criterion in Section 3.2.4, namely that the measure should induce the beneficiary of the aid to change its behaviour to improve the functioning of a secure, affordable and sustainable energy market, a change in behaviour which it would not undertake without the aid.

[34] SEM Committee, Decision Paper SEM-16-081 pages 56-57.

[35] SEM Committee, Third Consultation Paper SEM 16-010, pages 10-11.

(145) The Commission recalls that the objective of the measure is to ensure security of supply by keeping available sufficient capacity. As shown in the adequacy assessment, without the capacity mechanism there would be insufficient capacity to ensure security of supply because a significant portion of plants is projected to make insufficient revenues from the energy-only market to cover their costs. In addition, the payback obligation creates a financial incentive to be available at times of scarcity.

(146) The measure will thus have an incentive effect for existing capacities to stay on the market and to be available at times of scarcity, and for new capacities to enter the market. The measure will thus incentivise new and existing market players to contribute to the objective of security of supply.

3.3.5. Proportionality of the aid

(147) The aid amount is proportionate if it is limited to the minimum needed to achieve the objective pursued. The EEAG specify this requirement for generation adequacy measures in points (228) to (231), which aim to ensure that beneficiaries do not earn more than a reasonable rate of return and that windfall profits are excluded.

(148) The Commission notes that an auction procedure is applied to select the capacity providers of the CRM. The Commission furthermore notes that thanks to the wide eligibility criteria, in combination with the fact that the capacity requirement is expected to be lower than the presently available installed capacity in the market, the auction can be expected to be competitive and deliver an efficient outcome. Furthermore, the Commission recalls that the capacity requirement, as described in recital (28), is based on the willingness of consumers to pay for additional capacity, which in principle prevents uneconomic over procurement. For the capacity providers, the remuneration can therefore in principle be considered proportionate.

(149) The Commission is however also aware that specific rules have been designed and put in place with the aim of ensuring that the auction remunerates only those costs that are necessary for plants to remain available and that capacity providers with market power cannot abuse that power by submitting inappropriate bids. In particular, the Commission recalls that both an auction price cap and an existing capacity price cap apply, as explained in recital (50). Furthermore, as mentioned in recital (49) the Commission notes that locationally important plants can be 'constrained on' – i.e. contracted on top of the capacity contracted directly on the basis of the auction – if they do not directly obtain a capacity contract in the auction.

(150) With regard to the auction price cap and the existing capacity price cap, the Commission notes that Points (228) and (230) EEAG determine that on the one hand beneficiaries should earn a rate of return that is reasonable and that on the other hand windfall profits should be prevented. Point (229) EEAG determines that this can be ensured by a competitive bidding process based on clear, transparent and non-discriminatory rules.

(151) The Commission notes that the objective of the caps is to mitigate market power and thus to limit the amount of aid to what is a fair remuneration for the service of availability. The Commission agrees there is a case for restraining the

exercise of market power in the auctions in view of the concentrated ownership structure in the market. The Commission furthermore notes that the principle of applying the caps and their level have been the subject of extensive consultation and that the outcome reflects the views of the majority of respondents. The Commission also agrees with the parameters upon which the authorities have based the price caps. In both cases, these are related to the actual costs of existing capacity going forward (the 'net going forward costs'), which do not include remuneration of such costs as depreciation or financing costs, but which allows for a 10 % tolerance in the estimate of the net going forward costs. The Commission agrees with the authorities that sunk costs do not need to be reflected in the existing capacity or unit specific price cap, because in a competitive market a bidder in a pay-as-clear auction can be expected to include only his forward-looking costs in his offer, so as to maximise his chances of securing a contract. The Commission furthermore recalls that parties can apply for a higher individual price cap (the 'unit specific price cap') in case their 'net going forward costs' are higher than the existing capacity price cap. Based on these considerations, the Commission takes the view that the bid caps strike the appropriate balance between on the one hand preventing the abuse of market power and on the other hand ensuring a reasonable and proportional aid amount.

(152) With regard to the solution found regarding locational issues, as set out in recital (49), the Commission notes that by separately contracting additional, locationally important capacity on top of what is needed to meet the reliability standard, Ireland and Northern Ireland procure more capacity than the minimum that would be needed to meet the global capacity requirement. Moreover, it may give an incentive to the locationally important plant to exercise its local market power by increasing its bid to the extent the price cap applicable to it allows this. At the same time, it must be recognised that without the additional capacity the reliability standard might not be met on a regional level. Because of the existing capacity constraints in the transmission network, the normally procured capacity might not be able to prevent loss of load events.

(153) The Commission agrees that where investments in additional transmission capacity take time to be completed, there is a need to temporarily remunerate the locational value of plants that are indispensable to meet security of supply standards in specific locations. However, the Commission is concerned about two potential effects the proposed solution (of contracting the locationally important plants 'on top'):

a) plants that are not locationally important may be granted a capacity contract even though they are not needed, thus granting more aid than is needed

b) the locationally important plants appear to not be able to monetise their locational value in the energy-only market, and thus distort the signal for investments in these locations.

The Commission has discussed these concerns with the authorities.

(154) In their notification, the authorities explained that the proposed solution to address the locational issue is the result of in-depth discussions between the public bodies and market participants involved as well as of a separate consultation and a decision paper. Various approaches to deal with the

locational issue were examined. On this basis it was decided that in the first transitional auctions, additional capacity would be secured to meet locational constraints, but in the long run, the abovementioned 'full combinatorial auction' would be implemented to handle the identified transmission constraints more efficiently.

(155) There are two main reasons why the interim solution of contracting locationally important capacity on top of the capacity requirement was selected as the preferred option. First, the origin of the locational constraints lies in concrete grid congestions which are in the process of being addressed by grid expansion projects and are expected to be gradually resolved to a large extent by the end of the transitional period, i.e. 2024. If plants in a non-congested area fail to secure a capacity contract this would send the wrong exit signal, given that they may be efficient once the constraint is resolved. The authorities stress the importance of sending the right exit signals given that as a result of the CRM some 2.25 GW of existing capacity may leave the market (equivalent to 25 % of de-rated installed capacity). Second, the implementation of the combinatorial auction requires significant changes to the IT-systems needed to run the auction.

(156) The authorities agree that ideally no corrective interventions in or after the procurement auction should be necessary and that therefore the notified solution is of a temporary nature only. The authorities underline that the expected over-procurement is limited to 4-5 % of the total capacity requirement. Moreover, the authorities have committed to implement another[36] interim solution for the third and fourth transitional auctions, i.e. those for delivery in the periods 2020/21 and 2021/22, to remove any over procurement. Under this second interim solution, the total amount of capacity that won in the auction would be reduced to offset the additional capacity required to meet locational constraints.

(157) The authorities confirmed that the locational value of capacity should in principle be reflected in the market prices, sending the right locational signals to incentivise investments in generation or transmission capacity in shortage areas. The authorities underline that in parallel to the implementation of the CRM also the I-SEM will be implemented which includes an overhaul of the ancillary services market. Although these reforms will overall improve the locational signals in the market in the long run, the immediate effect on existing operators in the market is uncertain with respect to their revenue streams (energy payments, system services, availability) all of which affect their commercial decisions as to whether to stay in the market. The risk that too much capacity would leave the market therefore justifies the over procurement during a short interim period.

(158) The Commission considers that the authorities will implement an interim solution that reflects transmission constraints and takes note of the commitment that the interim solution will be amended as of the transitional auction of 2020/2021 in order to remove any over procurement. The Commission underlines the importance of implementing market reforms, in particular in the ancillary services market, that reward the locational value of plants, as a

[36] Other than the interim solution notified and described in recital (155).

condition to move away from the separate procurement of locationally important plant.

3.3.6. *Avoidance of undue negative effects on competition and trade between Member States*

(159) Any potential negative effects of the CRM on competition and trade in the internal electricity market must be sufficiently limited, so that the overall balance of the measure is positive. The EEAG specify this requirement in Points (232) and (233).

(160) Point (232) (a) to (c) EEAG underlines the importance of ensuring competitive pressure in selecting the capacities through a sufficiently broad participation and wide eligibility criteria. In Section 3.3.3.3 of this decision the Commission assessed the eligibility of different technologies, demand response and foreign capacity for the CRM, concluding that the eligibility rules are sufficiently open. Furthermore, the auction design as assessed above, in combination with the fact that the capacity requirement is expected to be lower than the total amount of eligible capacity, suggests that the procurement process will be competitive and produce an efficient outcome.

(161) Point (232) (d) EEAG aims to ensure that regulatory distortions in the energy market are removed. The Commission notes that in general, the CRM is part of a wider set of reforms, named I-SEM, intended to implement a market design that is in line with EU legislation and thus remove regulatory distortions.

(162) The Commission notes in particular that Point 232 (d) EEAG explicitly mentions the existence of bidding restrictions as elements that could negatively affect market functioning. The Commission has been made aware by some market participants that in the future bidding controls will be applicable in the CRM as well as the I-SEM. In the CRM, as described above, a market-wide auction price cap applies and, specifically for existing capacity, an existing capacity price cap is applicable. Both caps limit the maximum bid that capacity providers can place in the procurement auction. In addition, in the I-SEM's balancing market bids for so-called non-energy actions will be implemented, whereby legislation will prescribe the cost categories that may be taken into account in the cost-based bids. Some market participants are concerned that these caps affect their possibilities to earn sufficient revenues to cover their costs, in particular where they are not allowed to incorporate their sunk costs within their offers or where they would miss out on a capacity contract in the initial procurement auction. They warn that the effect of the combined bidding restrictions may force some plants to close down even though they are important to ensure generation adequacy (in particular in certain locations). This would compromise the CRM's ability to maintain the reliability standard. The market participants also indicate that should these plants leave and be replaced by new plants, this may lead to higher costs for consumers.

(163) The Commission reiterates its conclusion of recital (133) that the bid caps in the CRM are a justified and proportionate means to address market power concerns. The authorities have moreover clarified the effects of the various bidding controls in the CRM and in the market on the revenues of locationally important plants.

(164) The authorities expect the combined revenues of selling energy in the reformed energy market, ancillary services and capacity income to be sufficient to cover costs. They point in particular to the reform of the ancillary services market and the increased budget for the TSOs to procure ancillary services. They also underline that relatively expensive plants can apply for a higher unit specific price cap which includes a 10 % top-up to cover for risks. The authorities moreover stress that the administrative scarcity pricing, described in recital (98), will increase generators' income automatically whenever scarcity arises on the all-island market. Furthermore, the bidding controls only apply to non-energy actions in the balancing market and not to any of the other markets, where it will still be possible to earn infra-marginal rents. The authorities also reiterate the general observation that the overall installed capacity on the island is bigger than the capacity required to meet the reliability standard and that hence some capacity will be left without capacity contract and should indeed leave the market. Finally, the authorities indicate that there may be a need to put in place targeted contracting mechanisms, arguably in the form of ancillary services, to address local security of supply requirements, but stress that details of such arrangements have at present not been designed.

(165) On the basis of the answers received, the Commission is confident that the combined effect of the price controls in both the CRM and the I-SEM will not affect the ability of the CRM to secure a sufficient amount of capacity in the necessary locations.

(166) Point (233) (a) to (c) EEAG aim to ensure that the negative effects of a capacity mechanism on market functioning are kept to a minimum, which in general means that the mechanism should leave the price and investment signals of the wholesale market, or 'energy-only market', intact.

(167) The Commission notes that market-wide capacity mechanisms in general create a stream of certain revenues which generally enable capacity holder to recover some or all of their fixed costs of being operational in the electricity market. This means that the capacity holders no longer need to recover these costs from the energy-only market. As a result, prices on the wholesale electricity market may be lower than without capacity mechanism. Where much value is remunerated in the capacity market and little in the electricity market, the electricity market loses its vital functioning of creating market-based investment signals for new capacity (or, market-based price signals for existing capacity). The Commission is of the opinion that the CRM and the I-SEM, and in particular the 'administrative scarcity pricing' referred to in recital (107), enable the market to reflect the value of electricity at times of scarcity and thus send appropriate investment signals.

(168) With regard to the undue strengthening of market dominance (Point 233 (d) EEAG), the Commission notes that in comparison to the existing regulatory framework, in which the revenues of all generators in the market was strictly regulated, the new I-SEM market and its accompanying CRM increase the risk of market power abuse by dominant parties. There are however various market power mitigation measures as described in recital (13) that were introduced in order to ensure that dominance is not abused. Moreover, the openness to new capacity and the availability of long term contracts is expected to ensure that existing dominance is not unduly strengthened.

(169) Finally, with regard to giving preference to low-carbon generators in case of equivalent technical and economic parameters (Point 233 (e) EEAG), the authorities have confirmed that a rule applies determining that in such 'tie-break' situations capacity providers defined as ‘clean’ clear ahead of those that are not clean. A clean capacity provider is defined as follows:

(a) if the unit is a generator, it generates electricity using only renewable energy sources; and

(b) if the unit is a DSU, the demand response is provided by means of changes of electricity load by final customers or off-setting load through the generation of electricity using only renewable energy sources.

This information is captured during the qualification process.

(170) Based on these considerations, the Commission is satisfied that, thanks to its design, the negative effects of the CRM on competition and trade in the internal electricity market are sufficiently limited.

3.3.7. Transparency of the aid

(171) Aid has to be transparent in line with Section 3.2.7 EEAG. For individual aid awards of EUR 500,000 or more, Member States must publish on a comprehensive State aid website the full text of the aid scheme and its implementing provisions (or a link to it), the identity of the granting authority, the identity of the individual beneficiaries, the form and amount of aid granted to each beneficiary, the date of the granting, the type of undertaking, the region in which the beneficiary is located and the principal economic sector in which the beneficiary has its activities.

(172) The authorities have confirmed they will apply the applicable transparency requirements.

3.4. Additional observations

(173) Since the United Kingdom notified on 29 March 2017 its intention to leave the European Union, pursuant to Article 50 of the Treaty on European Union, the Treaties will cease to apply to the United Kingdom from the date of entry into force of the withdrawal agreement or, failing that, two years after the notification, unless the European Council in agreement with the United Kingdom decides to extend this period. As a consequence, and without prejudice to any provisions of the withdrawal agreement, the present decision only applies if (i) the United Kingdom is still a Member State on the first day of the period for which the notified scheme is approved, and (ii) to individual aid granted[37] under the notified scheme until the United Kingdom ceases to be a Member State.

[37] According to the case-law of the CJEU, aid must be considered to be granted at the time that an unconditional right to receive it is conferred on the beneficiary under the applicable national rules (See Case C-129/12 Magdeburger Mühlenwerke EU:C:2013:200, paragraph 40).

4. CONCLUSION

The Commission has accordingly decided:

> not to raise objections to the aid on the grounds that it is compatible with the internal market in accordance with Article 107(3)(c) TFEU.

If this letter contains confidential information which should not be disclosed to third parties, please inform the Commission within fifteen working days of the date of receipt. If the Commission does not receive a reasoned request by that deadline, you will be deemed to agree to the disclosure to third parties and to the publication of the full text of the letter in the authentic language on the Internet site:

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Your request should be sent by registered letter or fax to:

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Yours faithfully
For the Commission

Margrethe VESTAGER
Member of the Commission